THESIS

MICHIGAN STATE UNIVERSITY LIBRARIES
3 1293 10662 7684

LIBRARY
Michigan State
University

This is to certify that the

dissertation entitled

The Effect of an Experimenter's Presence
on the Quality of Interpretable Data
in Human Figure Drawings

presented by

Jeffrey Paul Roach

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology

Major professor

Date 7/5/84

MSU is an Affirmative Action/Equal Opportunity Institution

O-12771

# *THE EFFECT OF AN EXPERIMENTER'S PRESENCE ON THE QUALITY OF INTERPRETABLE DATA IN HUMAN FIGURE DRAWINGS*

By

*Jeffrey Paul Roach*

*A DISSERTATION*

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

*DOCTOR OF PHILOSOPHY*

*Department of Psychology*

*1984*

# *ABSTRACT*

## *THE EFFECT OF AN EXPERIMENTER'S PRESENCE ON THE QUALITY OF INTERPRETABLE DATA IN HUMAN FIGURE DRAWINGS*

By

*Jeffrey Paul Roach*

Handler and Reyher (1964) demonstrated that manifestations of anxiety in human figure drawings have two sources: (a) the anxiety producing characteristics of the laboratory situation and (b) the anxiety producing characteristics of the task of drawing the human anatomy. Man, woman, and automobile drawings obtained under stressful conditions tended to show a dimunition of articulation, effort, and detail. However, the effects tended to be more comprehensive for human figures than for the automobile figure. In a subsequent study, Roach (1981) replicated and extended this pattern of results. The current study attempts to extend this line of research by addressing two issues. First, it examines the proposition that manifestations of anxiety in figure drawings that reflect the participant's reactions to the task of drawing the human anatomy tend to be masked or minimized when the drawings are obtained under stressful conditions. Second, it examines the proposition that figure drawing anxiety indices (Handler, 1967) differ in the extent to which they are sensitive to the situational source of anxiety. The current study evaluates a proposed categorization scheme that places Handler's indices into Highly, Moderately, and Mildly Sensitive and Insensitive categories. Man, woman, and car drawings were obtained by a male experimenter from 108 male undergraduates in either experimenter present or absent conditions. A three factor MANOVA was used to analyze the effects of experimenter's presence-absence, drawing type, and order of the drawings on the figure drawing anxiety indices. In addition, a multiple groups, confirmatory factor analysis was used to assess the effectiveness of the categorization scheme. The results did not support the first hypothesis that the effects of high anxiety producing conditions tend to mask or minimize the effects of the anxiety producing characteristics of drawing the human anatomy. Mild support was provided for the proposed categorization scheme which ordered the anxiety indices in terms of their sensitivity to the situational source of anxiety. Based on the these results, the indexes were reordered, and a Post Hoc analysis indicated that the altered scheme was more effective. Additional analyses were also examined and discussed in terms of their practical applications for the improvement of the measurement of the figure drawing anxiety indices.

*To JoAnn:*
*for your love, support,*
*and understanding.*

## *ACKNOWLEDGEMENTS*

I would like to express my appreciation to those individuals that have made contributions to this project. Joe Reyher, my chairperson, served as a source of continual enthusiasm and support. I appreciate his wisdom and guidance, and have profited greatly by identifying with his dedication to research. At different stages in the project, Norbert Kerr and Terry Allen provided valuable insight into complex issues. John Hurley was also available during a time of need. Invaluable aide in the collection and coding of the data was provided by Kevin Alverson, Bill Abler, and Bill Chips. Their enthusiasm for learning was contagious, during the arduous, monotonous phases of the project. Finally, I want to express appreciation to JoAnn for her support, understanding, and patience during the frustrating and frantic times.

*TABLE OF CONTENTS*

## LIST OF TABLES

*Table* *Page*

*LIST OF FIGURES*

Handler and Reyher (1964) proposed that manifestations of anxiety in human figure drawings have two sources: "(a) the laboratory stress situation, and b) the anxiety-producing intrapsychic processes activated by drawing the human figure." Their male, college student participants completed figure drawings of a man, a woman, and an automobile under high anxiety-producing conditions (individually tested while attached to a polygraph in a laboratory) and low anxiety producing conditions (group administration in a classroom with implied anonymity). Handler and Reyher (1964) included the automobile as a relatively neutral comparison drawing for the two human figure drawings. They reasoned that drawing the automobile was less likely to activate anxiety-producing intrapsychic processes than drawing the human anatomy. They found that a significantly greater number of figure-drawing anxiety indices[1] differentiated high from low anxiety-producing conditions on the man (15 of 21) and woman (11 of 21) figure drawings than on the automobile figure drawing (5 of 17).[2] Based on this finding, they concluded that their hypothesis was strongly supported.

---

1 Handler (1967) developed a set of 21 indices that measure various structural and graphic aspects of drawings.
2 Analogous measures cannot be designed for the car drawing for some indices such as hair shading and head simplification.

When discussing the impact of the situational manipulation, Handler and Reyher (1964) noted a common, directional pattern for the figure drawing anxiety indices that differentiated the high from low anxiety-producing situations. They suggested that the indices reflected a "dimunition in effort, articulation, and detail" in the high anxiety-producing situation. Based on this finding, Handler and Reyher (1964) hypothesized that "the anxiety-producing characteristics of the task, and/or situation may create a desire to finish the figures with a minimum of effort and to leave the situation as quickly as possible (flight)."

Roach (1981) attempted to replicate and extend Handler and Reyher's (1964) findings. He noted that multiple situational variables were manipulated by Handler and Reyher (1964), and reasoned that the most potent of the group was the experimenter's presence versus absence during administration of the DAP task (see appendix A for a discussion of the literature pertaining to this topic). Roach (1981) replicated Handler and Reyher's (1964) pattern of a greater number of indices differentiating the high and low anxiety-producing conditions for the human figure drawings than for the car drawing. Furthermore, all of the findings were in the expected direction; they indicated a "dimunition of articulation, effort, and detail" when the experimenter was present. Handler and Reyher's (1964) hypothesis that participants finished quickly to leave the anxiety-producing situation received additional support since the time spent by participants in the present condition was 62, 67, and 67 percent of the time spent in the absent condition on the person, car, and opposite sex person drawings respectively.[3]

These findings suggest a serious problem for clinicians who administer the Draw a Person test with the intent of learning about interesting intrapsychic processes of their clients. When figure drawings are obtained in anxiety-producing conditions, the findings suggest that much of the rich detail that is reflective of interest and involvement with the task is omitted in the participant's rush to flee the situation. When laboratory conditions result in the participant producing a minimal effort, the participant is unlikely to have sufficient time to react fully to the task. Thus, differences between participants' reactions to the task of drawing the human anatomy and the participants' reactions to the task of drawing the neutral car figure may be minimized or masked by the participant's reactions to the more potent laboratory situations. The primary purpose of the current study is to evaluate whether the quality of interpretable data is diminished under high

---

3 The Mean number of seconds spent drawing the Person, Car and Opposite Sex Person drawings for the present condition were 107, 94, 164, and for the absent condition were 173, 141, and 246 respectively.

anxiety-producing test administration conditions.

In addition to the replication, Roach (1981) attempted to extend Handler and Reyher's (1964) findings. He argued that the graphic indices of anxiety could be separated into the following three groups: a) indices that were primarily sensitive to the situational (external) source of anxiety, b) indices that were primarily sensitive to the the intrapsychic (internal) source of anxiety, and c) indices with equivocal results. The classification of drawing indices into these categories was based upon the pattern of findings in Handler and Reyher's 1964 study. indices that differentiated high from low stress conditions across all three drawings were considered to be sensitive to the external source, because these variables seemed to be unaffected by whether the drawing was animate or inanimate. indices that differentiated stress conditions on both human figures, but not on the automobile figure were considered to be primarily sensitive to the internal source, because the pattern of findings indicated that the participants reacted to the process of drawing the human anatomy, but not to the process of drawing the car. Since the remaining indices did not fit either pattern of findings across drawings, they were not classified.

Roach (1981) predicted that the patterns would be repeated for both of the classified groups of indices, i.e. that the indices considered to be primarily sensitive to the external source would differentiate experimenter-present from absent conditions across all three drawings, while the indices considered to be primarily sensitive to the internal source of anxiety would differentiate the experimenter present from absent conditions for both human figures, but not for the car figure. The first hypothesis was strongly supported while the second hypothesis was only mildly supported.

Although Roach's (1981) attempt at classifying the indices was interesting, careful reflection reveals flaws in his reasoning. First, the indices that were classified as "primarily sensitive to the internal source of anxiety" are clearly mislabeled. Although they may be highly sensitive to the "internal" source, they are also sensitive to the "external" source, i.e. they were also affected by the situational manipulation. Thus, they should be considered to be sensitive to both sources of anxiety.

Second, Roach's (1981) use of the terms "internal" and "external" to label the two sources of anxiety is misleading. The problem lies in the fact that both sources of anxiety originate externally to the participant, i.e. the two "sources" of anxiety are the threatening laboratory conditions and the instructions to draw the human figure. Both external sources trigger anxiety-producing intrapsychic processes that affect drawing performance. Although both sources are external in origin, their effects are not similar. Each source activates different internal processes that in turn produce different effects on figure drawing performance.

Based on this conceptualization, the two sources of anxiety identified by Handler and Reyher (1964) may be labeled: a) the anxiety-producing characteristics of the laboratory situation, and b) the anxiety-producing characteristics of the task of drawing the human anatomy. In the interest of brevity, in subsequent discussion. these sources will be labeled the situational source and the drawing-task source.

The third flaw in Roach's (1981) reasoning was in his attempt to classify drawing indices as primarily sensitive to one and only one source of anxiety. Since the two sources of anxiety are considered to be independent, classifying the indices as primarily sensitive to either one source or the other denies the possibility that some drawing indices may be highly sensitive to both sources. Further, it eliminates from consideration the possibility that one source may elevate a drawing index while another source may simultaneously depress the same index. For example, traditional clinical interpretations suggest that the presence of shading indicates conflict and anxiety. Therefore, human figures should be more heavily shaded than non-human figures. However, results from Reyher and his associates are consistent in indicating that less shading occurs under stressful conditions. Thus, a participant's reaction to a threatening situation may act to depress shading on the human figure while the participant's reactions to the task of drawing the human anatomy may increase it. The solution is to abandon the attempt to associate directly particular indices with each source of anxiety in human figure drawings. A more productive manner of proceding is to view the indices as variables that have multiple determinants, i.e. that they can be affected by more than one source. Once this assumption is adopted, attention may turn to the more interesting problem of how and to what degree the various indices reflect the participant's reactivity to each source.

The secondary purpose of the present study was to evaluate the proposition that figure drawing indices differ in the extent to which they are sensitive to the anxiety-producing characteristics of the laboratory situation. Based upon a review of the literature (see appendix B), figure drawing anxiety indices were classified into the following four categories: Highly Sensitive, Moderately Sensitive, Mildly Sensitive, and Insensitive (see table 1 for a list of the indices within these categories). The literature contains little information that is useful for classifying the indices. Consequently, the classification scheme relied heavily upon the original studies of Handler and Reyher (1964) and Roach (1981). The indices were classified according to the number of drawings (man, woman, and car) in which high and low anxiety producing conditions were discriminated. Mildly, Moderately, and Highly sensitive indices discriminated anxiety-producing conditions on one, two, and three drawings respectively; Insensitive indices failed to discriminate anxiety producing conditions on all three drawings. Specifically, the secondary goal of this study was to determine if figure drawing indices could be appropriately classified into these categories.

With the two purposes of the study in mind, a formal statement of the hypotheses is now appropriate.

Hypothesis I

Manifestations of anxiety in figure drawings that reflect the participant's reactions to the task source of anxiety are masked by the participant's reactions to the situational source of anxiety under high anxiety-producing situations, i.e. the impact of the drawing-task source of anxiety will be lessened or eliminated under high anxiety producing conditions. Specifically, significant differences between drawings will occur for the absent condition, but not for the present condition. This effect will only be manifested for those indices that are classified as Highly and Moderately Sensitive to the situational source of anxiety.

Hypothesis II

Figure drawing variables differ in the extent to which they are sensitive to variations in the anxiety producing characteristics of the laboratory situation. Handler's Figure Drawing Anxiety indices (1967) may be reliably classified into the following categories:

1. Primarily Sensitive indices are shading, erasure, delineation line absence, and body simplification.

2. Moderately Sensitive indices are reinforcement, emphasis lines, light and heavy line, vertical imbalance, distortion, and omission.

3. Mildly Sensitive indices are placement and line discontinuity.

4. Insensitive indices are transparency, length, width, and area.

Six of Handler's (1967) indices were not included in one of these categories. Four indices measure aspects of the human head, and were not included, because analogous measures for the car are not possible. Two indices (detail loss and light and heavy pressure) were not measured in this study, because the current procedures made the measurement of these indices unfeasible.

# METHOD

## Participants

One hundred and eight male participants were required to maintain a balanced experimental design. Participants were one hundred and twelve undergraduate males enrolled in introductory psychology courses. The data from four of the participants were excluded from the analysis. Two participants were omitted due to mechanical failure of the device that recorded drawing time, and two were omitted for failure to follow instructions and perform all tasks. As participants were dropped from the study, they were randomly replaced until the one hundred and eight participants that were needed for the balanced design were obtained. Well after all data had been collected, a problem in the measurment of drawing latency was discovered which neccesitated the loss of data for five participants on this variable. Fortunately, the five participants were spread evenly across experimental conditions.

## Instruments

A modified version of Handler's (1967) scoring manual for Anxiety indices in the Draw a Person test was used to rate the human figure drawings on the following variables: shading, erasure, delineation line absence, body simplification, reinforcement, emphasis line, light and heavy line, vertical imbalance, distortion, omission, placement, line discontinuity, transparency, length, hair shading, head simplification, head size, and head:body ratio. Two additional scales were added that measure width and total area. Two scales were excluded that measure detail loss and light and heavy line pressure due to procedural difficulties in measuring these variables. Handler's (1967) scales for light and heavy line, length, and head size were constructed so that deviations from a normative middle range receive higher scores, e.g. very large and very small sizes received a rating of three while medium sizes received a rating of zero. Handler's (1967) scales for size indices, and for light and heavy line are essentially absolute deviation scales, where the greater the deviation, the higher the rating. These scales were altered so that low values represent light line and small sizes, and high values represent heavy line and large sizes. The reason for this modification is that past research has not demonstrated that a large size is equivolent in meaning to small sizes nor that light line has the same meaning as heavy line. Use of an absolute deviation scaling procedure needlessly sacrifices potentially valuable information about the direction of the deviation. Since the direction may be important, the scales were left in monotonic form. An additional modification in the three scales was to leave them in their original units of measurement rather than reducing them to four point scales. Light and heavy line was left as a 7 point scale and the size variables were measured in sixteenths of an inch. This modification was made because greater precision in the variables was preferred. Width was also measured in sixteenths of an inch, and area was measured in square inches.

Analogous scales for the car figure were developed for the current study that correspond to each of the human figure indices with the exception of the indices involving the human head. Although car scales have been used in previous studies (Handler, 1963; Handler, 1964) doccumentation of the rating procedures was not provided. Appendix C contains a description of the procedures that were used in rating the car figure. A close correspondence between human figure and car scales is required when the drawings are compared. Of the sixteen car scales that were developed, only ten appeared to achieve close correspondence. The correspondence for the remaining six scales (placement, omission, delineation line absence, emphasis line, distortion, and body simplification) was rough at best. The primary difficulty was that the method for scoring each of the six scales was dependent upon the nature of the drawing scored. For example, the criterea for defining a simplistic figure were necessarily different for the human and car drawings. Specific concerns about the degree of correspondence between human and car figures for each scale are also presented in Appendix C.

The amount of time spent drawing was recorded by using an event marker that allowed the participant to press a button after each drawing was completed. Each time the button was pushed, a mark was made on a paper tape that proceeded at a rate of one inch per thirty seconds. The distance between each mark was measured and converted to the number of seconds spent drawing.

The debriefing questionnaire (see Appendix D) consisted of (a) two open ended questions that assessed the participant's perception of the purpose of the study and the participant's experiences while drawing and (b) ten multiple-choice questions that assessed the participant's level of artistic training, frequency of drawing behavior, appraisal of their drawings, distractibility, and evaluation apprehension. The open ended questions were coded for the presence of the following themes: (a) believed the purpose was to evaluate the effects of being observed, (b) believed the purpose was to learn about their personality, (c) believed the purpose was to learn about how participants react to different drawing tasks, (d) believed that the amount of time spent on their drawings was important, (e) believed that the amount of effort and/or detail spent on their drawings was important, (f) disparaged either their drawings or artistic skills, (g) disparaged the importance of the study, (h) reported experiencing negative affect, (i) reported experiencing positive affect, and (j) mentioned the presence of the experimenter, and/or concern about the experimenter's evaluation of their drawings.

Experimental Setting

The experimental setting was a sparsely furnished, 8 x 12 foot research office within a psychology research building at a major, midwestern university. Since the office was in the interior of the building, it contained no windows. Participants entered the room from the only door that opened from an infrequently used hallway. They were seated at a desk facing the wall with their back to the door. The experimenter sat in a chair on the participants's left at the side of the desk. The office was brightly lit, and also contained an empty table and a metalic shelf that stored stacks of paper.

Procedure

Upon arrival, the participant was greeted by the experimenter who was a tall, thin, soft spoken, twenty-seven year old male (the author). The participant was ushered into the room, and seated at the desk about two and one half feet from the experimenter. The experimenter read the following instructions:

> You will be asked to perform four different drawing tasks today. Specific instructions about what you will be asked to do will be printed within the packet that is on the table. Please follow these instructions carefully.

Participants in the present condition received the following additional instructions:

> Today, I will sit with you while you complete the tasks. I will be silent. If you have any questions that come up after you begin, please save them until you have completed all of the tasks.

Participants in the absent condition received the following additional instructions:

> I will be outside the door while you complete the task. If you have any questions that come up after you have started, please save them until you have completed all of the tasks. When you are finished, please open the door.

Next, the experimenter asked all participants if they had any questions about the procedures. Questions pertaining to the procedures were answered; questions about the nature and purpose of the study were defered until the completion of all experimental tasks. The experimenter asked all participants to read and sign the consent form if they wished to continue their participation. Participants were then instructed to fill out the cover sheet that had places for their name, birth date, age, marital status, year enrolled, and major. Once they had filled out this form, they were told that they may begin by turning the page. At this point the experimenter left the room in the absent condition, and initiated his silence in the present condition.

The experimental packet was identical across all participants with the exception that the order of the man, woman, and car drawings was varied across participants. Six orders were possible, and participants were randomly assigned to one of the six orders. An example of the experimental packet is provided below with the drawings in the order of man, car, and woman. The packet included the following pages:

1. A cover sheet that has space provided for demographic questions.

2. An instruction page that stated:

    1. Press the red button

    2. On the next page, draw each of the six geometric figures that are listed.

    3. Turn the page.

3. A page divided into six equal sized boxes with the names of the geometric figures (circle, square, rectangle, oval, star, and box) in the top left corner of each box.

4. An instruction page that stated:

    1. Press the red button

    2. Select a fresh pencil.

    3. On the next page, Draw a Man. Please do not draw an incomplete or stick figure.

    4. Go to the next page.

5. A blank page.

6. An instruction page that stated:

1. Press the red button

2. Select a fresh pencil.

3. On the next page, Draw a Car. Please do not draw an incomplete or stick figure.

4. Go to the next page.

7. A blank page.

8. An instruction page that stated:

1. Press the red button

2. Select a fresh pencil.

3. On the next page, Draw a Woman. Please do not draw an incomplete or stick figure.

4. Go to the next page.

9. A blank page.

10. An instruction page that states:

1. Press the red button.

Following the completion of the drawing tasks the participant was asked to complete a debriefing questionnaire (see Appendix D). Upon completion of the questionnaire, each participant was told in detail about the the nature and purpose of the study. All of the participant's questions were answered, and participants were asked to avoid discussion of the procedures with classmates until the end of the data collection period.

# RESULTS

Interrater reliabilities for the drawing indices were assessed by computing the Pearson product-moment correlations between raters on each index for each drawing (see Table 2). These correlations are similar to those reported in past studies (Handler, 1963, 1964; Attkinson, Waidler, Jeffrey, and Lambert, 1974; and Roach, 1981). The interrater reliability estimates ranged between .63 and 1.00 and had a median of .85.

------------------------------------

Insert Table 2 about here.

------------------------------------

Interrater reliabilities for the ten items that were coded from the open ended questions on the debriefing questionnaire were assessed by computing the Pearson product-moment correlations between raters on each item (see Table 3). The reliability estimates ranged between .44 and .81 and had a median of .73.

------------------------------------

Insert Table 3 about here

------------------------------------

The cross-drawing correlations for each index were obtained by computing the Pearson product-moment correlations for all possible pairings of the man, woman, and car drawings for each index (see Table 4). These correlations were computed separately for participants in the present and in the absent conditions, because the correlations would be artificially higher when the experimenter's presence/absence significantly affects an index on a given drawing. The correlations for the man-woman pairing were similar to those reported by Attkinson et al (1974). Unfortunately, cross-drawing correlations for the man-car and woman-car pairings have not been previously reported. so a comparison is not possible.

-------------------------------------

Insert Table 4 about here

-------------------------------------

A Three factor multivariate analysis of variance design (2x6x3) was used to evaluate the impact of the experimenter's presence/absence (P), the order of the drawings (O), the type of drawing (D), and their interactions on the sixteen drawing indices that were measured across all three drawings (see table 5). In this design, P and O were between subjects factors, and D was a within subjects factor (repeated measure). This analysis produces seven multivariate F-tests, i.e. three tests for the main effects and four tests for the interactions. For each multivariate F-test that was significant sixteen univariate F-tests (one for each dependent variable) were computed. To control for inflation in the Type I error rate that is due to computing a large number of F-tests, univariate F-tests were inspected only if the corresponding multivariate F-test was significant. However, when planned comparisons were specified by the hypotheses, univariate

F-tests were inspected without regard for the significance level of the Multivariate F-test. Specific results from this analysis will be presented in the subsections below to which they apply. The analysis was performed using the BMDP statistical package (1983).

---

Insert Table 5 about here

---

A univariate analysis of variance (2x6x3) was used to evaluate the impact of P, O, D, and their interactions on the amount of time spent drawing. Time was not included in the MANOVA analysis described above because of a decision to limit the domain (dependent variables) to graphic indices of drawing behavior.

Hypothesis I

The results did not support Hypothesis I which stated that manifestations of anxiety that reflect the participant's reactions to the drawing task source of anxiety are masked by the participants's reactions to the situational source of anxiety under high anxiety producing situations. Specifically, this hypothesis predicts that differences due to the drawing-task source that occur in the absent condition will be lessened or eliminated in the present condition. This effect was predicted to be manifested only for those indices that were classified as Highly or Moderately sensitive to the situational source of anxiety (see table 1). If this hypothesis were valid, one could expect a significant P x D interaction for Highly and Moderately sensitive indices with the means forming a pattern that indicated non-significant differences between human and car figures for the present condition and significant differences between human and car drawings for the absent condition. The multivariate F-test for the P x D interaction for the sixteen drawing variables and the univariate F-test for the P x D interaction for time were non-significant. Since the P by D interaction was specifically predicted for highly and moderately sensitive indices, the univariate F-tests were inspected for these indices. Only one index (body simplification) had a significant P by D interaction, and the means did not form the expected pattern (see figure 1). Inspection of the figure indicates that the differences between the car and human drawings occurred for both present and absent conditions. The interaction was significant because the differences between present and absent conditions were larger for the car than for the other figures. Since the expected PxD interaction was not found for the highly and moderately sensitive indices, Hypothesis I received no support.

<u>Hypothesis II</u>

Two types of analysis were used to evaluate Hypothesis II which stated that figure drawing indices differ in their sensitivity to the situational source of anxiety, and that the indices could be reliably classified into four categories (High, Moderate, Mild, and Insensitive). First, the results from the MANOVA analysis were inspected to determine if specific directional effects due to the experimenter's presence/absence occured (i.e. a main effect for P).

Second, the four categories were evaluated using an oblique multiple groups method of confirmatory factor analysis (Nunnally, 1978) for each type of drawing. In this latter analysis, the sixteen indices that were measured for all three drawings were separated into the four groups specified by Hypothesis II. Prior to the analysis, shading, erasure, emphasis line, and reinforcement had to be reflected. i.e. the sign of the correlations of each of these indices with all other indices was reversed. In past research (Handler and Reyher, 1964, 1966) the absence rather than the presence of these indices was associated with anxiety. Following the reflection of these variables, increases in all indices should be associated with increases in anxiety with the exception of the indices that measure size in which the relationship is unknown. The oblique multiple groups confirmatory factor analysis was then performed on the four groups for the man, woman, and car figure drawing data separately using the Package statistical program (Hunter, Gerbing, Cohen, and Nicol, 1980). Both the experimenter's presence/absence (P) and the time spent drawing were included separately as additional variables to determine if the expected associations between the situational manipulation and the drawing variables were present.

Manova results. The expected patterns of results based on previous studies were only confirmed for the highly sensitive and insensitive indices. The multivariate F-test for P was not significant (F= 1.73; df= 16, 81; p=.058). However, when evaluating the main effect for P on the highly and moderately sensitive indices, the standard procedure of only inspecting univariate F-tests for the main effect of P when the corresponding multivariate F-test for the main effect of P was significant was not followed. Instead, the univariate F-tests for the highly and moderately sensitve indices were converted to t-tests, and a one tailed test of the directional prediction was used for each index. The a priori decision to use a one tailed test was made because: a) specific directional predictions were made for the four highly and moderately sensitive indices, and b) the results from previous studies (Handler and Reyher, 1964; Roach, 1981) were consistent in the direction of the effects of threatening situational manipulations on these indices. Inspection of the one tailed t-tests of the effect of P on highly and moderately sensitve indices indicated that all of the highly sensitve indices and one of the moderately sensitve indices were significantly affected, and that these effects were in the expected direction (see Table 6 for means). There was significantly less shading (T=2.86, p=.005), fewer erasures (T=3.56, p=.001), more delineation line absences (T=1.78, p=.078), greater body simplification (T=1.72, p=.087), and greater distortion (t=2.71, p=.008) in the present than in the absent condition. The univariate F-test for the main effect of P on time spent drawing was also significant (F=5.30; df=1,91; p=.024). The means indicated that there was significantly less time spent drawing in the present condition than in the absent condition.

---

Insert Table 6 about here

---

As a means of exploring whether the current study replicated past results, one tailed t-tests were computed between experimenter present and absent conditions for each type of drawing for highly, moderately, and mildly sensitive indices. One tailed tests were used, because the direction of effects was predicted and supported by past research. Two tailed t-tests were computed between experimenter present and absent conditions for each type of drawing for insensitive indices. The significant t-tests are listed in Table 7 which also includes significant results from previous studies (Roach, 1981; Handler and Reyher, 1964).

---

Insert Table 7 about here

---

Inspection of table 7 reveals that the current study failed to replicate patterns of results found in previous studies. In the earlier studies, a greater number of indices significantly differentiated high from low anxiety producing conditions on each of the human figures than on the car figure. In the current study, a greater number of indices differentiated present from absent conditions on the car figure than on the human figures. Further, the results also indicate that several of the variables considered to be highly sensitive did not differentiate all three drawings. In short, the results from the MANOVA analysis indicate that the expected effects were not obtained, and that the proposed system of categorization was inadequate.

_Multiple groups analysis results_. The pattern of results from the multiple groups confirmatory factor analysis indicated that the groups of indices differed in sensitivity to the situational source, but that the proposed category system was inadequate. Appendix E contains the results from the multiple groups analyses for the man, woman, and car figure drawings. The key correlations for Hypothesis II are between P and the cluster scores for the four groups. The reader should note that a significant correlation between P and a cluster indicates that the corresponding t-test between present and absent conditions for the cluster score would also be significant. Table 9 contains the correlations with P for high, moderate, mild, and insensitive groups. Although these findings are not compelling, they provide some support for the hypothesized order of the drawing indices along a continuum of sensitivity to the situational source of anxiety. As was expected, the correlations increased in size with increases in rankings of sensitivity of the groups of indices, i.e. low correlations were obtained between mild and insensitive groups and P and higher correlations were obtained between high and moderate groups and P. The correlations were significant ($p<.05$) for the high and moderate groups for the human figures, and for the high group for the car figure. The remaining correlations were non-significant.

---------------------------------------
Insert Tables 8, 9, and 10 about here
---------------------------------------

The second set of correlations that are relevant for Hypothesis II are between the amount of time spent drawing and the cluster scores (see table 10). The correlations between the high, moderate, mild, and insensitive groups and time were much larger for the high and moderate groups and smaller for the mild and insensitive groups. The order and magnitude of these correlations suggest that the hypothesized order of the indices clearly reflects sensitivity to the amount of time spent drawing as well as sensitivity to threatening situational manipulations.

Post hoc analysis. Although the proposed classification scheme was mildly supported, inspection of the patterns of correlations between indices indicates that an alternative mode of classifying the indices would have done better at ordering the variables along a continuum of sensitivity to the situational source of anxiety. The reader should note that this post hoc analysis is exploratory in nature, and requires confirmation by future research before the results may be believed. Caution is urged, because the post hoc ordering of the indices represents many arbitrary decisions that take advantage of chance factors.

The standard score coefficient alphas (which measures the reliability or internal consistency of a cluster) from the multiple groups analyses indicates that the hypothesized clusters were poorly grouped (see table 8). Only the "insensitive" group had respectible alphas (above .70) for man, woman, and car drawings. When forming new clusters, careful attention was paid to the effect of inclusion or exclusion of items on the potential alpha for each new cluster. High coefficient alphas are desirable, because when the alpha is high, the group of items becomes interpretable as a factor. The changes in groupings were made solely on the basis of inspection of the intercorrelations between items. The correlations between P, time, and the indices were only used to label the new clusters. Based upon these criterea, three changes were made.

The first change involves the removal of poor items from the current clusters. Light and heavy line, vertical imbalance, line discontinuities, and transparancies were removed from their assigned clusters and placed in a separate group, because of: (a) low item-cluster correlations[4] with all clusters, (b) uniformly low correlations for each of these indices with all other indices. The new cluster that is composed of these items is labeled insensitive, because of low correlations for each of these indices with Ṗ and with time. It is expected to have a very low alpha for each drawing since these items are unrelated.

The second change involves merging the first group (highly sensitive) with the remaining members of the second group (moderately sensitive). The new cluster is composed of shading, erasure, delineation line absence, body simplification, distortion, emphasis line, reinforcement, and omission. The decision to form this group was made because: (a) the correlation between the original high and

---

4 All item-cluster correlations that are discussed have been corrected for item-total overlap.

moderate clusters was uniformly high across drawings (man=.49, woman=.57, and car=.66), and (b) the item- member cluster correlations were typically equivalent to the item non-member cluster correlations. The correlations for these indices with P and with time were typically high across all three drawings. Thus, this group of eight indices is expected to have a respectable alpha, and is labeled highly sensitive.

The final change is to form a group of the remaining indices which are placement, length, width, and area, and to label it mildly sensitive. This grouping is appropriate because: (a) length, width, and area were the core of the original cluster that produced respectible coefficient alphas across all three drawings, and (b) placement had a stronger correlation with this original cluster across all three drawings than with any other cluster. This cluster is labeled mildly sensitive, because these indices had mild, but frequently significant correlations with P and with time.

The three changes that were outlined above produced three groups instead of the four groups that were originally hypothesized. The current groupings are labeled highly sensitive (shading, erasure, delineation line absence, body simplification, distortion, emphasis line, reinforcement, and omission), mildly sensitive (placement, length, width, and area), and insensitive (light and heavy line, vertical imbalance, line discontinuity, and transparancy). The revised categorization scheme was evaluated using an oblique multiple groups analysis to determine if the new groupings represented a substantial improvement over the original hypothesized groupings. Time and P were also included as separate variables to determine if the expected associations between the clusters and these variables were obtained. Placement was reflected prior to the analysis because its correlations with length, width, and area were negative. Reflecting placement was a necessary step for obtaining an accurate estimate of coefficient alpha for the mildly sensitive cluster.

Appendix F contains the results of the oblique multiple groups analysis for man, woman, and car drawings respectively. The revised groupings represented a substantial improvement over the hypothesized groupings. As was expected, the coefficient alphas for the highly and mildly sensitive groups were uniformly high across all three drawings, while the alphas for the insensitive group were uniformly low across drawings (see table 11). The correlations for each of the clusters with P were in the expected order and were of the expected magnitude (see table 12). The correlations for each of the clusters with time were also in the expected order and were of the expected magnitude (see table 13). These findings support the proposition that the post hoc ordering of the indices is a substantial improvement over the original hypothesized order, and that the indices differ in sensitivity to the situational source of anxiety.

---

Insert Tables 11, 12, and 13 about here

---

Other Findings

This section includes all results that were obtained, but not covered in the previous sections on Hypotheses I or II. It is separated into the following three subsections: 1) other results for drawing indices and time, 2) head variable results, and 3) debriefing questionnaire results.

Other results for drawing indices and time. In addition to the significant main effect for P, the MANOVA also produced significant multivariate F-tests for D and for the D by O interaction. The multivariate F-test for D was highly significant ($F=9.92$; $df=32,354$; $p=.000$). Inspection of the univariate analyses indicated that significant differences across drawings occurred for eleven of the sixteen indices, i.e. shading ($F=3.14$, $p=.046$), erasure ($F=5.41$, $p=.005$), delineation line absence ($F=5.97$, $p=.003$), body simplification ($F=61.89$, $p=.000$), distortion ($F=4.75$, $p=.010$), emphasis line ($F=9.96$, $p=.000$), omission ($F=15.04$, $p=.000$), placement ($F=24.84$, $p=.000$), line discontinuity ($F=6.24$, $p=.002$), width ($F=11.90$, $p=.000$), and area ($F=4.95$, $p=.008$). The univariate F-test for the main effect of D on time was not significant.

The means for the significant indices for each drawing appear in Table 14. The results on drawing differences reported by Handler and Reyher (1966) are also included in this table. There is little correspondence between the two studies. Three indices (shading, erasure, and emphasis line) differentiated drawings in the current study, but failed to differentiate drawings in the Handler and Reyher (1966) study. Four indices (light and heavy line, vertical imbalance, length, and transparancy) failed to differentiate drawings in the current study, but succeeded in differentiating drawings in the Handler and Reyher (1966) study. Of the remaining indices that were measured in both studies, one (reinforcement) failed to differentiate drawings in both studies, while six indices significantly differentiated drawings in both studies. Of these six indices, delineation line absence, body simplification, distortion, and line discontinuity replicated the directional pattern of means found in the Handler and Reyher (1966) study, i.e. the automobile drawing exhibited lower values than the human figures. In contrast, omission and placement provided opposite results from the previous study with the automobile showing more omissions and greater displacement than the human figures.

------------------------------------
Insert Table 14 about here
------------------------------------

The multivariate F-test for O was not significant. However, the multivariate F-test for the O by D interaction was highly significant (F=1.38; df=160,1531; p=.002). Inspection of the univariate F-tests revealed that significant O by D interactions occured for shading (F=3.52; df=10,192; p=.000), delineation line absence (F=3.54; df=10,192; p=.000), and emphasis line (F=1.93; df=10,192; p=.044). In addition, the univariate F-test for the O by D interaction for time was significant (F=4.02; df=10,182; p=.001).

Unfortunately, the position of the drawing (first, second, or third) is confounded with the effects of the immediate previous history in drawing, e.g. the effect of drawing the man second is not independent of which drawing (car or woman) preceded it. Thus, six groups were necessary to account for position and immediate previous drawing experience. The unfortunate consequence of having six orders instead of three positions is that when a position effect occurs, it results in a significant O by D interaction rather than an order main effect. This is unfortunate because graphing a univariate O by D interaction involves plotting eighteen means which results in a very complex figure to interpret.

Figures 2, 3, 4, and 5 graphically depict the significant O by D interaction for shading, delineation line absence, emphasis line, and time respectively. The vertical axis for delineation line absence was inverted so that the direction of effects would be consistent across variables, i.e. with the inversion of delineation line absence, all four variables have a negative association with anxiety. The inverted delineation line absence index will be refered to as delineation line presence in subsequent discussion.

Visual inspection of the figures indicates that the O by D interaction patterns for shading and delineation line presence are quite similar. In both cases, the car figure has more shading and more delineation lines present when it is in either the second or third position than when it is in the first position. Although the pattern is not as clearly displayed for the human figures, the data suggest that shading and delineation lines are more likely to be present when the first drawing is a car than when the first drawing is either the man or woman.

The O by D interactions for emphasis line and time are more confusing. For emphasis line the woman drawing is unaffected by order. The means across the orders for the male figure also suggest that it is generally unaffected by order with the exception of a sharp increase when it is in the second position and preceded by the car drawing. The means for the car figure indicate that the car is only affected when it is in the third position. If it is preceded by the man and then the woman, emphasis lines are less likely to apear on the car than for all other orders. If it is preceded by the woman, and then the man, emphasis line is more likely to occur than for all other orders.

There is greater variability across orders for the amount of time spent drawing than for the other indices. The time spent on the woman drawing is consistent across orders with the exception of a decrease when it is preceded by the car and then the man figure. More time appears to be spent on the man drawing when the car drawing is in the first position. This pattern for the man drawing is similar to the patterns displayed for the man drawing for shading and delineation line presence. The car data is more eratic, and no consistent pattern was discerned.

Head variable results. Four variables were rated only for human figures because they pertain strictly to the human head. These variables were hair shading, head simplification, head size, and head:body ratio. The effect of P, O, D, and their interactions on the head variables were analyzed using a three factor, multivariate, analysis of variance design (2 x 6 x 2). Both P and O were between subjects factors and D was a within subjects factor. To control for the inflated Type I error rate due to computing a large number of F-tests, significant univariate F-tests were only considered to be valid if the corresponding multivariate F-test was significant.

In this analysis, only the multivariate F-test for the main effect for P was significant ($F=3.83$; $df=4,93$; $p=.006$). Inspection of the univariate F-tests for the main effect of P revealed that both hair shading and head simplification were significantly affected by P. As was expected, there was less hair shading ($F=11.41$, $df=1,96$, $p=.001$) and greater body simplification ($F=4.75$; $df=1,96$; $p=.032$) in the present than in the absent condition (see Table 4 for the means).

Debriefing questionnaire results. In order to increase the reliability of the dependent measures used in the debriefing questionnaire analysis, similar items were grouped to form subscales, and four of the rated, open-ended items were dropped entirely. The subscales were labeled artistic experience, effort, self evaluation of drawing efforts, affect (positive to negative), distraction, evaluation apprehension, and understanding of the purposes of the study. The procedures for forming these subscales are described in appendix D. The effects of P, O, and their interactions on the seven self report scales were analyzed using a two factor, multivariate, analysis of variance design (2 x 6). Both P and O were between subjects factors. The multivariate F-tests for P, O, and the P by O interaction were not significant at the .05 level. Four of the subscales were included as manipulation checks, and were expected to be affected by the main effect for P.

Participants in the present condition were expected to be more critical of their drawing efforts, to experience more negative affect, to be more distracted, and to be more concerned about being evaluated by the experimenter than participants in the absent condition. All other univariate F-tests were ignored, because they were not predicted to be affected and because the multivariate F-tests were not significant. Three of the four scales that were predicted to be affected had a significant main effect for P. Participants in the present condition experienced more negative affect ($F=5.99$, $df=1,96$, $p=.02$), were more distracted ($F=6.63$, $df=1,96$, $p=.01$), and were more concerned about the negative evaluation ($F=4.31$, $df=1,96$, $p=.04$), than participants in the absent condition. Participants in both conditions did not differ significantly in the extent to which they were critical of their own drawings. However, it is intersting to note that over 75 percent in each condition made a disparaging remark about either their drawings or their drawing ability.

# DISCUSSION

The discussion section is separated into five subsections in order to facilitate communication of the complex findings to the reader. The subsections are: a) Hypothesis I, b) Hypothesis II, c) evaluation of Handler's indices, d) correspondence between human and car scales, and e) conclusions.

## Hypothesis I

The findings did not support the primary hypothesis of this study which stated that manifestations of anxiety in figure drawings that reflect the subject's anxiety due to the drawing-task are masked by the subject's reactions to the situational source under high anxiety producing conditions. Significant differences between the car and the human drawings were expected for the absent condition, but were not expected for the present condition. Contrary to this prediction, the findings indicated that differences between the drawings occured without regard to the condition under which they were obtained. Unfortunately, the results also indicated that this study was not a fair test of Hypothesis I. A fair test would require that the figure drawings be obtained under high anxiety producing conditions; the results suggest that the experimenter's presence did not induce high anxiety within the subjects. Support for this conclusion was provided by 1) the failure of the current study to replicate patterns of results found in two previous studies (Handler and Reyher, 1964; Roach 1981), and 2) the relatively low correlations between each of the indices and the experimenter's presence/absence. Although the experimenter's presence did not induce a high level of anxiety, it did appear to induce a mild level of anxiety within subjects. Thus, shading, erasure, delineation line absence, body simplification, distortion, hair shading, and head simplification were all affected by the main effect for drawings.

A comparison of the methods of the current study with the methods of previous studies provides an explanation as to why the situational manipulations were more powerful in previous studies. First, previous studies differed from the current study in the nature of the conditions that were used to induce anxiety within the subjects. In the current study, only the experimenter's presence/absence was manipulated with all subjects tested individually in a sparsely furnished room. Roach (1981) also used the experimenter's presence/absence manipulation, and tested subjects individually in a sparsely furnished room. However, unlike the current study, Roach (1981) measured Galvanic Skin Resistance for all subjects. Neidig (1970) demonstrated that the experience of being attached to a polygraph was anxiety producing when he replicated Handler and Reyher's (1964) pattern of results by comparing drawings of subjects who were attached to a polygraph to drawings from subjects who were instructed to fake anxiety, but were not attached to a polygraph. The combined effects of being observed and of being attached to a polygraph probably resulted in a higher level of anxiety within subjects in the Roach (1981) study. In the original study Handler and Reyher (1964) simultaneously manipulated the following group of variables: a) experimenter's presence/absence, b) polygraph versus no polygraph, c) individual versus group administration, d) identified versus anonymous performance, and e) laboratory versus classroom setting. The combination of these variables probably produced a higher level of anxiety within subjects than any of the variables separately, and thus induced a higher level of anxiety within subjects than the current study.

Second, the current study used a less powerful design than Handler and Reyher (1964). The current study tested the effect of the situational manipulation using a between subjects comparison, while Handler and Reyher (1964) used a within subjects comparison. Roach (1981) used a between subjects comparison to test the situational manipulation, and therefore is equivalent on this dimension to the current study.

A third difference between the current and previous studies was that many of the subjects in the experimenter present condition in the current study shielded their drawings from observation with their free arm. In the Roach (1981) study, subjects were unable to shield their drawings, because they were instructed not to move their free hand due to the fact that electrodes were attached. Handler and Reyher (1964) had the experimenter sit behind the subject and look over his shoulder at the drawing in the high stress condition. Presumably, the subject was unable to prevent the experimenter from observing the drawing process. Thus, some of the subjects in the current study may have reduced their anxiety about being observed by preventing observation of their drawings. Unfortunately, a tally was not kept of the subjects that shielded their drawings.

The fourth, final, and perhaps most important difference was that the current study included instructions that subjects should draw complete figures and should not draw incomplete or stick figures. Both of the previous studies allowed stick or incomplete figures to be drawn. The inclusion of the instruction to draw a complete figure may have served as a subtle demand to produce an elaborate performance, and thus reduced the likelihood that the subjects would produce an impoverished performance in order to flee the situation.

In short, all of these differences may have served either to induce less anxiety than previous studies or to lessen the liklihood that flight might be used as a defense against the anxiety that was induced. As a result, this study was not a fair test of the effect of high anxiety producing conditions on the quality of figure drawing performance. A future study which successfully induces a high level of anxiety, and which allows subjects to have the freedom to draw stick or incomplete figures will be necessary before the fate of Hypothesis I is determined.

Although a fair test of Hypothesis I was not performed, the findings have relevance for the usage of figure drawings in clinical settings. During clinical administration of the Draw a Person test, the presence of an administrator is likely to be the most threatening aspect of the situation. The results of the current study suggest that drawings completed under experimenter present conditions are not so impoverished that they are of little utility. If the presence of a psychodiagnostician in a clinical setting is no more anxiety-producing than the presence of an experimenter in a laboratory setting, then drawings obtained in the presence of a psychodiagnostician should still be clinically useful. However, the equivalence of the anxiety producing statuses of the observers from each setting must be demonstrated before this proposition may be believed.

Hypothesis II

The second hypothesis was only mildly supported by the results. Hypothesis II stated that figure drawing indices differ in their sensitivity to the situational source of anxiety, and that they could be reliably classified into four groups (high, moderate, mild, and insensitive). The findings indicated that the indices differed in their sensitivity to the experimenter present/absent manipulation. Some of the indices were related to the experimenter's presence/absence and some were not.

The attempt to validate the proposed category system demonstrated that it was inadequate. The failure to replicate patterns of findings from past research for individual indices was surprising. However, it seems likely that the patterns were not replicated because the effect of the situational mainipulation was relatively weak compared with previous situational manipulations (Handler and Reyher, 1964; Roach, 1981).

The failure to replicate the pattern of a greater number of indices differentiating experimenter present from absent conditions for the human figures than for the car figure was the most surprizing result. The decision to restrict subjects from drawing stick or incomplete figures may be the reason that this pattern was not replicated. The car cannot be represented by a stick figure, and an incomplete car figure is quite rare. Consequently, only the human figures are likely to be affected by the decision to instruct subjects to draw complete figures. Since the human figures were less free to vary, the indices were less likely to differentiate the experimenter present from absent conditions for the human figures.

The results from the multiple groups analysis provided some support for the hypothesized ordering of the variables; they also demonstrated that the categorization system was inadequate. The attempt at reordering the variables proved to be interesting and useful. The post hoc multiple groups analysis clearly indicated that the new groupings of the indices were a substantial improvement over the original hypothesized groupings. However the new ordering of the indices must be validated in a future research project before the results from the post hoc analysis may be believed. Confirmatory research is necessary because the current solution represents many arbitrary decisions which take advantage of chance factors. A second limitation is the small sample size upon which the analysis was based. Nunnally (1978) recomends an average of ten subjects per variable to insure that sampling error is small. The current study had slightly less than seven subjects per index when both present and absent groups were combined.

In spite of the limitations, the results of the post hoc multiple groups analysis are surprisingly similar to the results from previous factor analytic studies (Nichols and Strumpher, 1962; Adler, 1971). Utilization of the critereon that the new groups should have high coefficient alphas allows for the opportunity to interpret the highly and mildly sensitive clusters as factors since each cluster successfully met this critereon for each drawing. The highly sensitive cluster of indices was composed of shading, erasure, delineation line absence, body simplification, distortion, emphasis line, reinforcement, and omission. The indices with the highest item-cluster correlations (loadings) were body simplification, distortion, and emphasis line. A review the content of these scales reveals that they were designed to measure both proportionality and attempts at creating a sense of depth within the figures. The common theme of the remaining variables is the elaboration or embellishment of the figure. Thus, the first group of indices in the post hoc analysis appears to be an elaboration and body sophistication factor.

The second group of indices in the post hoc analysis (mildly sensitive) is clearly a size factor. Three of the four indices are direct measures of size (length, width, and area) while the fourth measure (placement) is heavily affected by the size of the figure, i.e. the larger the figure, the less likely it is to be displaced from the center of the page.

Both of these factors appeared in previous studies. Nichols and Strumpher (1962) factor analyzed five scales (sexual differentiation, adjustment, maturity, aggression, and body image) and fourteen details of drawings for 107 college students and 90 hospitalized VA patients (30 normal, 30 neurotic, and 30 psychotic). For the total sample, they retained four factors. The first factor accounted for most of the common variance and was described as the ability to draw life-like human figures. A second factor was labeled a size factor. The remaining factors were considered to be artifacts of the measurement procedures that were used, and were not interpreted.

Adler (1971) factor analyzed thirteen scales and fifteen items for 216 short term psychotic patients. He retained four factors and labeled them: a) sophistication of body concept, b) size and placement, c) failure at integration of parts, and d) poor motor control. Adler (1971) argued that his results strongly confirmed Nichols and Strumpher's (1962) findings, because his body sophistication factor was so similar in content to Nichol and Strumpher's first factor which they labeled the ability to draw a life-like figure.

Despite major methodological differences between all three studies, the results are surprizingly similar. Each study produced a primary factor that represents the ability of the subject to produce a figure that is elaborate, life like, and/or sophisticated, and a secondary factor that reflects the size of the figure. An important contribution from the present study is that the primary factor of the ability to draw an elaborate and sophisticated figure is sensitive to the effects of stressful situational manipulations. It is also heavily correlated with the amount of time spent drawing.

Evaluation of Handler's indices

Some of the current findings are of special concern for future studies in which Handler's (1967) figure drawing rating scales will be used. The major question addressed in this subsection is whether all of Handler's scales are sensitive, reliable measures. The results from the multiple groups analysis indicated that four of the indices were poorly related to other indices and to each other, and thus they were labeled insensitive indices. These were light and heavy line, vertical imbalance, line discontinuity, and transparency. The fact that these variables are unrelated with other indices is not a sufficient condition for concluding that they are unreliable. Each of these indices may simply be an "isolate" in the sense that they are solitary measures of an attribute of drawings that is not measured by the remaining indices. Inspection of the other analyses conducted in this study provides useful information that is helpful in evaluating these indices. Each of the four indices will be discussed individually below.

Line discontinuity is judged to be reliable and therefore is considered to be an isolate. judgement is based on the the following results: a) it is reliably scored by raters across all drawings, b) it successfully differentiates drawing types, and c) it is symmetrical about its mean and shows good dispersion across possible values of the index. Although it currently appears to be reliable, its sensitivity can be improved by abondoning Handler's method of condensing line discontinuity into a four point scale, because specificity of the scale is needlessly sacrificed. In future research, simply counting the number of line discontinuities is recomended. A ceiling limit is necessary to prevent the distribution from becoming too skewed. Thus, a ten or more limit is suggested.

Light and heavy line is judged to be only mildly reliable and thus somewhat insensitive. It was reliably scored, symetrical about its mean, and shows good dispersion of scores, but was unaffected by the independent variables and their interactions. Since its reliability is unknown, and can only be estimated, judgements about whether or not it is an isolate would be misleading. Several improvements in the scoring of this scale should improve its reliability and thus its sensitivity. Handler's rating procedures require that the rater judge the quality of line for the entire drawing and then assign a value along a seven-point monotonic scale (very light to very dark) which is then recoded to a four-point absolute deviation scale. The scale that was used in the current study involved having the rater judge the quality of line using a reference guide that had seven lines (light to heavy) drawn on a piece of paper. The ratings were not recoded to a four point scale,but were left in monotonis form. Inspection of the drawings revealed that the degree of lightness of line varied greatly whithin a drawing. If the lightest line and the heaviest line within the drawing were rated, the range would be three to four points on the seven point scale for most drawings. As a means of reducing the degree of judgement that is necessary in rating the drawings, the scale could be altered in the following manner: a) the scale should remain a seven point monotonic scale, b) a reference guide (lines drawn on paper representing each point) should be used for making the ratings, and c) four preselected points should be individually rated and averaged to produce a global rating. This procedure would reduce the amount of judgement required to produce the rating by the rater, and thereby reduce the amount of measurement error.

Vertical imbalance is judged to be somewhat unreliable and fairly insensitive within the current study. Although it is reliably scored, it is heavily skewed and essentially dichotomous in nature with most of the drawings receiving a zero rating. It was not affected by independent variables or their interactions in the current study. In past studies, vertical imbalance was affected by situational mainipulations. This suggests that it is only responsive to high anxiety producing conditions, and is insensitive to mild anxiety producing conditions. Its sensitivity could be increased if Handler's (1967) four point scale were abandoned, and the number of degrees of tilt of the figure were measured instead. A ceiling limit would have to be imposed to prevent the distribution from becoming too skewed, and an upper limit of ten degrees deviation or more is recomended.

Finally, transparency is judged to be highly unreliable and insensitive. Its interrater reliability was only marginally acceptible; it is heavily skewed; and it is essentially dichotomous with most of the drawings having no transparancies present. Handler and Reyher (1964) reported similar difficulties. Due to the low frequency of occurance, the sensitivity of the scale would be difficult to increase. Thus, it is suggested that the measurement of transparency be discontinued in future studies.

Car and Human Scale Correspondence

Prior to the analysis, concerns were raised about the degree of correspondence between the car and human figure drawing rating scales for six of the indices (omission, body simplification, delineation line absence, distortion, emphasis line, and placement). The difficulty in achieving close correspondence for these scales occurred because the procedures for rating the six indices were tied to the content of each drawing that was rated (see appendix C for a discussion of specific concerns for each index). For example, the rating of the number of omissions was based on the number of essential features that were omitted from each drawing. Examples of essential features for the human figure were feet, eyes, and ears. Examples of essential features for the car were bumpers, headlights, and door handles. Acievement of close correspondence on this scale is dependent upon whether or not all of the features in each list were essential. Since the definition of "essential" was not specified by Handler (1967) for the human figures, items may have been inadvertently included in the car scale when it was constructed that are not essential. If the human drawing index includes only essential features and the car drawing includes non-essential features, then the car is likely to receive an inflated omissions rating.

This example provides a good illustration of the consequence of a failure to achieve a close correspondence between human and car scales. When close correspondence is not achieved between scales, the interpretation of significant differences between human and car drawings is impossible, i.e. it is unclear whether the significant differences between drawings are true differences in the attribute that is being measured or artificial differences due to measurement problems.

The cross drawing correlations, and the analysis of significant main effects for drawing type (D) provide information that is relevant for the current discussion. All six of the figure drawing indices for which correspondence concerns were raised between car and human figure scales were significantly affected by the main effect of drawing task. If the correspondence between the car and human scales was close, then based upon past findings, the car drawing should have less body simplification, less distortion, more emphasis line, fewer omissions, fewer delineation line absenses, and less deviated placement, because the task of drawing the car should induce less anxiety within subjects than the task of drawing human figures. The results for delineation line absence, body simplification, and distortion were in the expected direction; the results for omission and placement were in the opposite direction; and the results for emphasis line were mixed.

Inspection of the cross-drawing correlations between all possible pairs of the man, woman, and car drawings within experimenter present and absent conditions provides information about whether or not to trust the findings for each of these indices. The cross drawing correlations for each pair of drawings (man-woman, man-car, woman-car) for body simpification, distortion, and emphasis line are all in the moderate to high range (.3 to .7) with the exception of emphasis line for the woman-car pair for present subjects. There is relatively little difference between the correlation for the man-woman pair and the correlations for the man-car and woman-car pairings. These results suggest that the correspondence between the car and human scales is adequate, and that the results for these indices may be trusted.

The findings for body simplification and distortion were expected and confirmed. The results for emphasis line are puzzling. However, a careful review of the scoring procedures for each drawing revealed that the woman drawing was more likely to recieve a higher rating on emphasis line than the man drawing, because the attempt at delineating breasts on the female figure was scored as an emphasis line. Since many of the subjects delineated breasts on the female figure, and since the male and car figures had no corresponding feature that consistently appeared, the score for emphasis line on the female figure was artificially higher. In future studies, if delineation of the breasts is not considered to be an emphasis line, the expected result is likely to be obtained.

Almost all of the cross drawing correlations for delineation line absence, placement, and omission were high (.5 or higher) for the man-woman pair and either low (.3 or lower) or non-significant for the man-car and woman-car pairs in both the present and absent conditions. The discrepency between the correlation between the human figures and the two correlations between human and car figures suggests that a correspondence exists, but that the correspondence is rough. Thus, less trust should be placed on the findings for these indices. The fact that two of the indices had results in the opposite direction provides additional support for the argument that revision of these scales in future research is necessary.

Future studies might score each delineation line and each essential feature that is omitted for both human and car figures separately. Frequencies for each delineation line and omission may be computed, and only the delineation lines and omitted items that appear in 75 percent of a normative sample of drawings obtained under low anxiety producing conditions should be retained. Use of this procedure should improve the correspondence between scales by providing an operational definition of the term "essential".

A complete revision of the placement scale for the human and car figures is necessary to improve the correspondence between human and car scales, and to reduce the impact of the size of human figures on the ratings of displacement. First, a midpoint should be obtained for both human and car figure drawings by drawing a midline across the length and width of the figure. The intersection of the midlines is the midpoint of the drawing. The midpoint of the page is the intersection of the vertical and horizontal axes that separate the page into equal sized quadrants. Displacement is measured by obtaining the distance between the midpoint of the drawing and the midpoint of the page. If the direction of displacement is considered to be important, a protractor may be placed along the horizontal axis of the page, and the number of degrees of deviation from the zero degree mark may be obtained for the line drawn between the midpoints of the drawing and the page. This latter scale might be labeled displacement direction.

Close correspondence between the human and car scales was considered to be achieved prior to the analyses for the ten remaining indices. Five of these indices (shading, erasure, line discontinuity, width, and area) significantly differentiated drawing tasks. The direction of effects could be predicted for three of the indices with more shading and erasures, and fewer line discontinuities expected for the car figure than for the human figures. Directional effects cannot be predicted for width and area, because these scales were introduced in the current study. As was expected, there was more shading and fewer line discontinuities for the car figure. Contrary to expectation, there were fewer erasures on the car than on the human figures. In the current study, the width and area of the car was smaller than the width and area of the human figures.

Inspection of the cross-drawing correlations for the five indices that significantly differentiated drawings and achieved close correspondence between scales reveals that most of the correlations between all possible pairs were in the moderate range (.3 to .5). Discrepancies between the man-woman and the human-car pairings were relatively small for all five indices. This finding supports the original assessment of close correspondence for these scales.

Five of the indices did not significantly differentiate the drawings. These were reinforcement, light and heavy line, vertical imbalance, transparency, and length. Reinforcement, light and heavy line, and length had cross drawing correlations that were in the moderate range (.3 to .5) or higher. Thus, the correspondence between human and car scales appears to be adequate. In contrast, cross drawing correlations for the man-car and woman-car pairs for vertical imbalance and for transparency were non-significant. These indices are either highly reactive to the drawing task or the scales correspond poorly across human and car drawings. Since these indices failed to differentiate between drawing tasks, and since they appear to be highly unreliable in the current study, measurement problems are probably the cause of the failure to find significant human-car cross drawing correlations. If the measurement of vertical imbalance is improved in later studies, and the cross drawing correlations between human and car figures remain non-significant, then the data would suggest that it is highly reactive to the drawing tasks.

## Conclusions

Several general conclusions may be drawn from this study. First, the presence of an experimenter appears to induce mild rather than high levels of anxiety within subjects. Second, figure drawings obtained under mild anxiety producing conditions are not sufficiently impoverished to warrant alteration of the standard clinical administration procedures of having the psychodiagnostician present. Third, figure drawing indices differ in their sensitivity to anxiety producing situational manipulations. The indices that are most affected share the common theme of reflecting the subject's ability to produce an elaborate and sophisticated representation of the object that is drawn. Finally, the results indicate that Handler's (1967) figure drawing anxiety indices and the procedures used to rate car drawings need to be revised in future studies. Specific suggestions concerning how these scales may be revised were included within the preceding discussion section.

# REFERENCES

## REFERENCES

Adler, P. T. Evaluation of the figure drawing technique: reliability, factorial structure, and diagnostic usefulness. Journal of Consulting and Clinical Psychology, 1970, 35, 52-57.

Attkinson, C. C., Waidler, V. J., Jeffrey, P., and Lambert, W. E. Interrater reliability of the Handler Draw-a-Person Scoring. Perceptual and Motor Skills, 1974, 38, 567-573.

BMDP Statistical Software: 1983 Printing with Additions, W. J. Dixon (ed.), University of California Press, Berkley, 1983.

Handler, L. The effects of stress on the Draw a Person test. Masters Thesis, Michigan State University, 1963.

Handler, L. Anxiety indices in the Draw a Person test: A Scoring manual. Journal of Projective Techniques and Personality Assessment, 1967, 31, 46-57.

Handler, L. and Reyher, J. The effects of stress on the Draw a Person test. Journal of Consulting Psychology, 1964, 28, 259-264.

Handler, L. and Reyher, J. The relationship between GSR and anxiety indices in projective drawings.

*Journal of Consulting Psychology*, 1966, *30*, 60-67.

Hunter, J. E., Gerbing, D.W., Cohen, S. H. and Nicol, T. S. *Package 1980: A System of Fortran Routines for the Analysis of Correlational Data*, Academic Computing Press, Baylor University, 1980.

Nicols, R. C., and Strumpher, D. J., A factor analysis of Draw a Person test scores. *Journal of Consulting Psychology*, 1962, *26*, 156-161.

Nunnally, J. *Psychometric Theory*, McGraw-Hill, New York, 1978.

Roach, J.P. The effect of an experimenter's presence or absence during administration of the Draw a Person test. Unpublished Master's Thesis, Michigan State University, 1981.

Sanders, R. S. and Reyher, J. The clinical applicability of nude figure drawings. *Journal of Projective Techniques and Personality Assessment*, 1972, *36*, 254-263.

# TABLES

Table 1

Hypothesized groups that reflect degree of sensitivity of drawing indexes to threatening situational manipulations.

---

<u>Highly Sensitive Indexes</u>

Shading
Erasure
Delineation Line Absence
Body Simplification

<u>Moderately Sensitive Indexes</u>

Distortion
Emphasis Line
Reinforcement
Light and Heavy Line
Vertical Imbalance
Omissions

<u>Mildly Sensitive Indexes</u>

Placement
Line Discontinuity

<u>Insensitive Indexes</u>

Length
Width
Area
Transparancy

Table 2

Interrater reliability for the current and past studies.[1]

| | Current Study | | | Roach | | | Other Studies | | |
|---|---|---|---|---|---|---|---|---|---|
| Indexes | Man | Wom | Car | Per | Opp | Car | A | B | C |
| Shading | 89* | 83 | 79 | 88 | 82 | 85 | 90 | 93 | 83 |
| Erasure | 84 | 81 | 82 | 91 | 69 | 78 | 91 | 87 | 93 |
| Del. Line Abs. | 90 | 83 | 89 | 97 | 96 | 81 | 89 | 80 | 90 |
| Body Simp. | 65 | 68 | 69 | 83 | 81 | -- | 71 | 73 | 76 |
| Distortion | 73 | 63 | 65 | -- | -- | -- | 77 | 77 | 82 |
| Emph. Line | 78 | 68 | 80 | -- | -- | -- | 89 | 80 | 91 |
| Reinforcement | 88 | 83 | 85 | 94 | 88 | 84 | 76 | 94 | 77 |
| Light/Heavy Line[2] | 76 | 77 | 71 | -- | -- | 77 | 80 | -- | -- |
| Vertical Imbal. | 82 | 80 | 93 | 82 | 77 | 97 | 91 | 70 | 90 |
| Omissions | 89 | 74 | 94 | 94 | 94 | 95 | 90 | 92 | 87 |
| Placement | 91 | 84 | 89 | 94 | 90 | 78 | ** | -- | -- |
| Line Discont. | 79 | 84 | 89 | 91 | 91 | 93 | 84 | 97 | 67 |
| Length[3] | ** | ** | ** | 97 | 94 | 96 | 94 | 97 | 97 |
| Width | 96 | 99 | 99 | -- | -- | -- | -- | -- | -- |
| Area | 99 | ** | ** | -- | -- | -- | -- | -- | -- |
| Transparancy | 82 | 71 | 66 | 83 | 66 | 81 | 74 | -- | -- |
| Hair Shading | 79 | 85 | NA | 95 | 90 | NA | 87 | 89 | NA |
| Head Simp. | 84 | 91 | NA | 89 | 82 | NA | 88 | 80 | NA |
| Head Size[3] | 96 | ** | NA | 96 | 95 | NA | 99 | -- | NA |
| Head:Body Ratio | 88 | 88 | NA | 87 | 90 | NA | 95 | -- | NA |

---

1 The past studies were Roach (1981), and (A) Handler (1963), (B) Handler (1964), and (C) Attkinson, Waidler, Jeffrey, and Lambert (1974).

2 In the current study, a 7 point monotonic scale was used; previous studies used a 4 point non-monotonic scale.

3 In the current Study, a monotonic scale measured in sixteenths of an inch was used; previous studies used a 4 point non-monotonic scale.

* The decimal point for all correlations was omitted to save space.

** Interrater reliability for this index was 1.00.

NA Not applicable because this index cannot be measured for the car drawing.

-- This index was not measured in previous studies.

Table 3

Interrater reliability for open ended debriefing items.

| Number | Item | Reliability |
| --- | --- | --- |
| 1 | Subject suggested that the purpose involved comparison of the drawings | .74 |
| 2 | Subject suggested that the purpose involved comparison of experimenter present and absent conditions | .81 |
| 3 | Subject suggested that the purpose involved assessment of how much time was spent drawing | .74 |
| 4 | Subject suggested that the purpose involved assessment the amount of detail and/or effort put into the drawings | .44 |
| 5 | Subject suggested that the purpose involved assessment of the subject's personality | .54 |
| 6 | Subject demeaned his drawings or his drawing ability | .78 |
| 7 | Subject expressed concern about being evaluated or mentioned the experimenter's presence | .68 |
| 8 | Subject mentions experiencing a negative affect (e.g. anxiety, frustration, irritation) | .66 |
| 9 | Subject mentions experiencing a positive affect (e.g. calmness, enjoyment) | .72 |
| 10 | Subject demeans the study | .81 |

Table 4

Cross drawing correlations[1]

| | Current Study | | | | | | Attkinson et al | |
|---|---|---|---|---|---|---|---|---|
| | Present | | | Absent | | | Rater 1 | Rater 2 |
| Indexes | M-W | M-C | W-C | M-W | M-C | W-C | M-W | M-W |
| Shading | 67* | 27 | 32 | 51 | 30 | 43 | 65 | 65 |
| Erasure | 39 | 69 | 39 | 56 | 50 | 55 | 59 | 67 |
| Del. Line Abs. | 75 | NS | NS | 61 | 21 | NS | 53 | 23 |
| Body Simp. | 72 | 60 | 48 | 36 | 48 | 34 | 58 | 58 |
| Distortion | 64 | 47 | 47 | 60 | 58 | 58 | 78 | 72 |
| Emph. Line | 52 | 45 | 26 | 57 | 48 | 47 | 32 | 46 |
| Reinforcement | 71 | 64 | 54 | 60 | 54 | 46 | 64 | 48 |
| Light/Heavy Line[2] | 52 | 36 | 37 | 37 | 44 | 40 | 65 | 57 |
| Vertical Imbal. | 38 | NS | NS | 37 | NS | NS | 32 | 29 |
| Omissions | 73 | 28 | 40 | 42 | 20 | 26 | 70 | 68 |
| Placement | 52 | 19 | 30 | 64 | 27 | 20 | 68 | 68 |
| Line Discont. | 68 | 32 | 26 | 49 | 38 | 41 | 56 | 60 |
| Length[3] | 87 | 63 | 55 | 84 | 63 | 61 | 47 | 43 |
| Width | 73 | 52 | 64 | 65 | 47 | 33 | -- | -- |
| Area | 86 | 72 | 75 | 72 | 60 | 44 | -- | -- |
| Transparancy | 17 | NS | NS | 26 | NS | NS | 54 | 45 |
| Hair Shading | 54 | NA | NA | 51 | NA | NA | 37 | 44 |
| Head Simp. | 70 | NA | NA | 51 | NA | NA | 71 | 66 |
| Head Size[3] | 86 | NA | NA | 33 | NA | NA | 54 | 54 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Head:Body Ratio | 77 | NA | NA | 63 | NA | NA | 51 | 57 |
| Time | 77 | 70 | 73 | 73 | 71 | 69 | -- | -- |

1 Cross drawing correlations were computed for all possible pairs of man, woman, and car drawings for subjects in the present and in the absent conditions seperately. Cross drawing correlations for the man-woman pair for two different raters from Attkinson, Waidler, Lambert, and Jeffrey (1974) are also included.

2 In the current study, a 7 point monotonic scale was used; previous studies used a 4 point non-monotonic scale.

3 In the current Study, a monotonic scale measured in sixteenths of an inch was used; previous studies used a 4 point non-monotonic scale.

* Decimal points for all correlations have been omitted to save space.

NA Not applicable because this index cannot be measured for the car drawing.

NS The correlation was not significant at the .05 level.

-- This index was not measured in previous studies.

Table 5

The analysis of variance design used in the current study.

| Source | Nesting | Error Term | D.F. |
|---|---|---|---|
| Present/absent (P) | | Subjects | 1 |
| Order (O) | | Subjects | 5 |
| P by O | | Subjects | 5 |
| Subjects | P by O | None | 96 |
| | | | |
| Drawings (D) | | D by Subjects | 2 |
| P by D | | D by Subjects | 2 |
| O by D | | D by Subjects | 10 |
| P by O by D | | D by Subjects | 10 |
| D by Subjects | P by O | None | 192 |
| | | | |
| Total | | | 323 |

Table 6

Means for indexes that significantly differentiated

present and absent conditions.

| Indexes | Present | Absent |
|---|---|---|
| Shading | .98 | 1.47 |
| Erasure | 1.50 | 1.98 |
| Delineation Line Absence | .97 | .71 |
| Body Simplification | 1.89 | 1.66 |
| Distortion | 2.23 | 1.91 |
| Hair Shading | .91 | 1.53 |
| Head Simplification | 1.45 | 1.06 |
| Time | 217.50 | 298.80 |

Table 7

Significant differences[1] between present

and absent conditions within drawings.

| | Current Study | | | Handler-Reyher | | | Roach | | |
|---|---|---|---|---|---|---|---|---|---|
| Indexes | Man | Wom | Car | Man | Wom | Car | Per | Opp | Car |
| Shading | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 |
| Erasure | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 |
| Del. Line Abs. | | | 1 | 2 | 2 | 2 | 1 | 1 | |
| Body Simp. | | | 1 | 2 | 2 | 2 | 1 | 1 | - |
| Distortion | 1 | 1 | 1 | 2 | 2 | | - | - | - |
| Emph. Line | | 1 | 1 | 2 | 2 | | - | - | - |
| Reinforcement | | | | 2 | 2 | | | 1 | |
| Light/Heavy Line[2] | | | | 2 | 2 | | - | - | - |
| Vertical Imbal. | | | | 2 | 2 | | | 1 | |
| Omissions | | | 1 | 2 | | 2 | | | |
| Placement | | | | 2 | | | | | |
| Line Discont. | | | | 2 | | | | | |
| Length[3] | | | | 2 | | | | | |
| Width | | | | - | - | - | | | |
| Area | | | | - | - | - | | | |
| Transparancy | | | | | | | | | |
| Hair Shading | 1 | 1 | NA | 2 | 2 | NA | 1 | 1 | NA |
| Head Simp. | 1 | 1 | NA | 2 | 2 | NA | 1 | | NA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Head Size[3] | | | NA | | | NA | | | NA |
| Head:Body Ratio | | | NA | | | NA | | | NA |
| Time | 1 | 1 | 1 | - | - | - | 1 | 1 | 1 |

1 Significant one (1) and two (2) tailed tests of differences between high and low anxiety producing conditions for each drawing seperately for the current study, Handler and Reyher (1964), and Roach (1981).

2 In the current study, a 7 point monotonic scale was used; previous studies used a 4 point non-monotonic scale.

3 In the current Study, a monotonic scale measured in sixteenths of an inch was used; previous studies used a 4 point non-monotonic scale.

NA Not applicable because this index cannot be measured for the car drawing.

-- This index was not measured in previous studies.

Table 8

Coefficient alphas for the hypothesized groups.

| | Drawings | | |
|---|---|---|---|
| Groups | Man | Woman | Car |
| Highly Sensitive | .56 | .54 | .51 |
| Moderately Sensitive | .52 | .49 | .35 |
| Mildly Sensitive | -.21 | -.09 | .11 |
| Insensitive | .74 | .74 | .76 |

Table 9

Correlations between hypothesized groups and

Experimenter's presence/absence within drawings.

| | Drawings | | |
|---|---|---|---|
| Groups | Man | Woman | Car |
| Highly Sensitive | .26 | .22 | .39 |
| Moderately Sensitive | .16 | .23 | .15 |
| Mildly Sensitive | -.02 | .05 | .15 |
| Insensitive | .12 | .08 | -.11 |

Table 10

Correlations between hypothesized groups

and time spent drawing.

| | | Drawings | |
|---|---|---|---|
| Groups | Man | Woman | Car |
| Highly Sensitive | -.54 | -.49 | -.52 |
| Moderately Sensitive | -.46 | -.49 | -.54 |
| Mildly Sensitive | -.17 | -.31 | .00 |
| Insensitive | .22 | .24 | .19 |

Table 11

Coefficient alphas for the Post Hoc groups.

| Groups | Man | Woman | Car |
|---|---|---|---|
| | | Drawings | |
| Highly Sensitive | .71 | .74 | .77 |
| Mildly Sensitive | -.86 | .89 | .86 |
| Insensitive | .05 | -.38 | -.18 |

Table 12

Correlations between Post Hoc groups and

Experimenter's presence/absence within drawings.

| Groups | Man | Woman | Car |
|---|---|---|---|
| | | Drawings | |
| Highly Sensitive | .24 | .23 | .33 |
| Mildly Sensitive | .13 | .10 | -.11 |
| Insensitive | .02 | .07 | -.07 |

Table 13

Correlations between Post Hoc groups

and time spent drawing.

| Groups | Man | Woman | Car |
| --- | --- | --- | --- |
| | | Drawings | |
| Highly Sensitive | -.60 | -.55 | -.57 |
| Mildly Sensitive | .17 | .27 | .20 |
| Insensitive | -.01 | -.23 | -.07 |

Table 14

Means for indexes that significantly differentiated drawings

| | Current Study | | | Handler-Reyher[1] | |
|---|---|---|---|---|---|
| Indexes | Man | Woman | Car | Signif | Direction |
| Shading | 1.19 | 1.11 | 1.37 | no | |
| Erasure | 1.15 | 1.41 | 1.09 | no | |
| Del. Line Abs. | .83 | 1.02 | .67 | yes | A-least |
| Body Simp. | 1.93 | 1.98 | 1.35 | yes | A-least |
| Distortion | 2.13 | 2.13 | 1.95 | yes | A-least |
| Emph. Line | .55 | .90 | .88 | no | |
| Reinforcement | | | | no | |
| Light/Heavy Line[2] | | | | yes | A-most |
| Vertical Imbal. | | | | yes | A-least |
| Omissions | .92 | .84 | 1.37 | yes | A-least |
| Placement | .60 | .79 | 1.28 | yes | A-least |
| Line Discont. | 1.08 | 1.36 | .93 | yes | A-least |
| Length[3] | | | | yes | A-least |
| Width | 38.00 | 32.87 | 31.16 | --- | |
| Area | 13.60 | 11.99 | 11.09 | --- | |
| Transparancy | | | | yes | A-least |

1 Handler and Reyher (1966) did not report means, but did report the direction of effects for significantly affected indexes.

2 In the current study, a 7 point monotonic scale was used; previous studies used a 4 point non-monotonic scale.

3 In the current Study, a monotonic scale measured in sixteenths of an inch was used; previous studies used a 4 point non-monotonic scale.

--- The index was not measured in Handler and Reyher (1964).

FIGURES

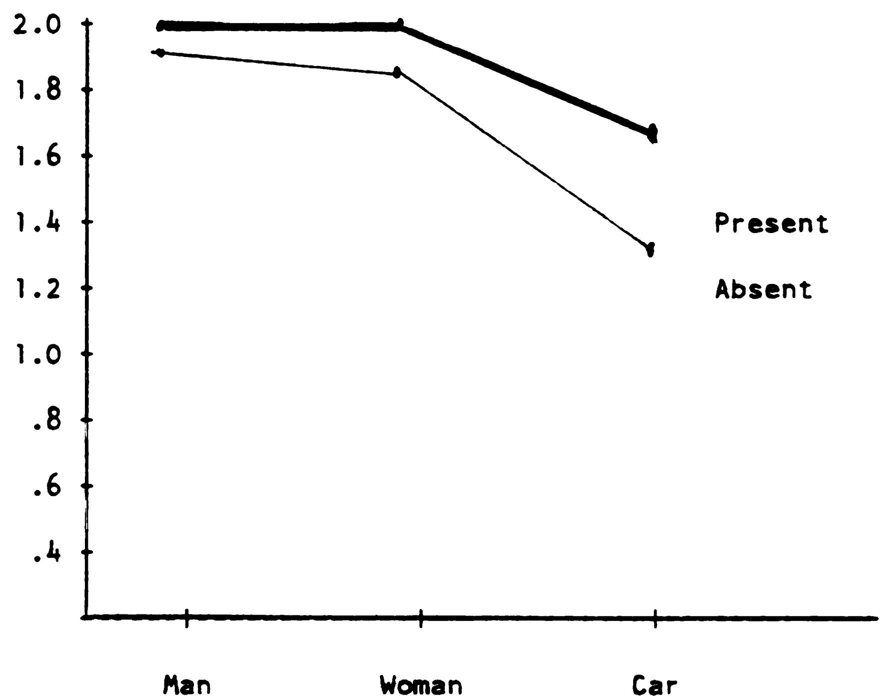


Figure 1. The present/absent by drawing interaction (PxD) for Body Simplification

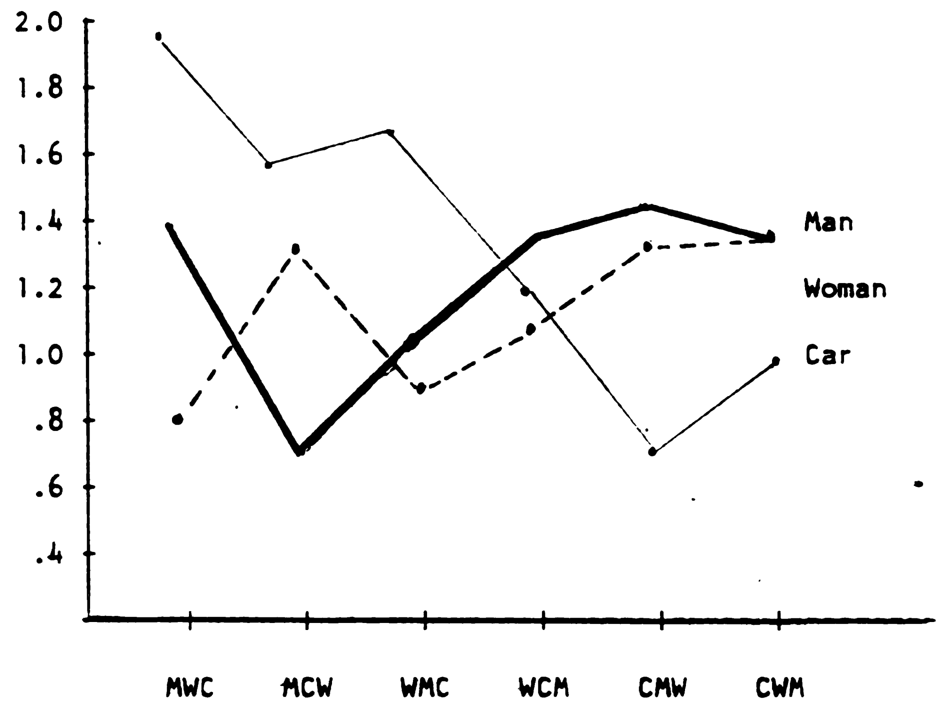


Figure 2. The drawing by order (DxO) interaction for Shading.

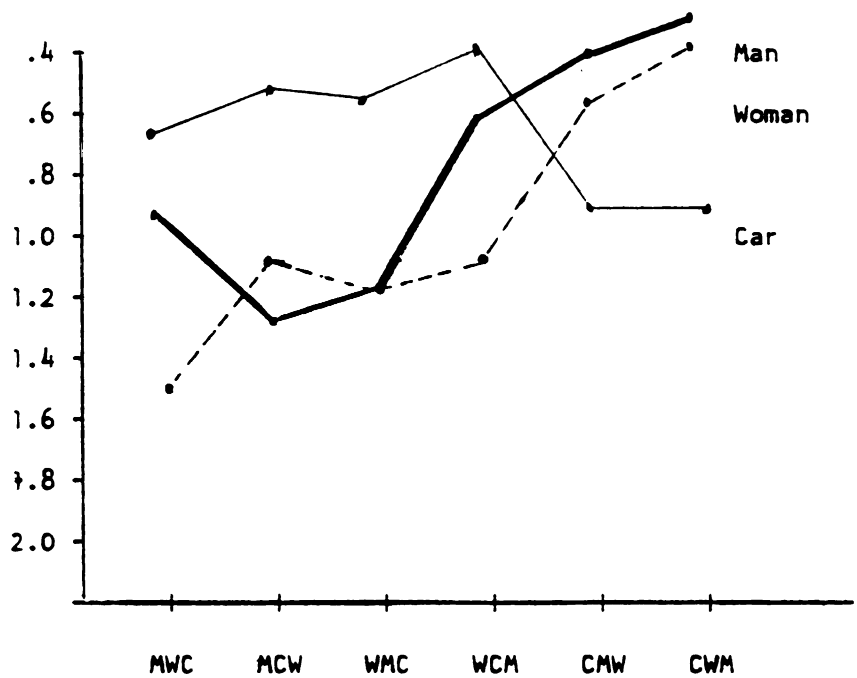


Figure 3. The drawing by order (DxO) interaction for Delineation Line Presence.cr

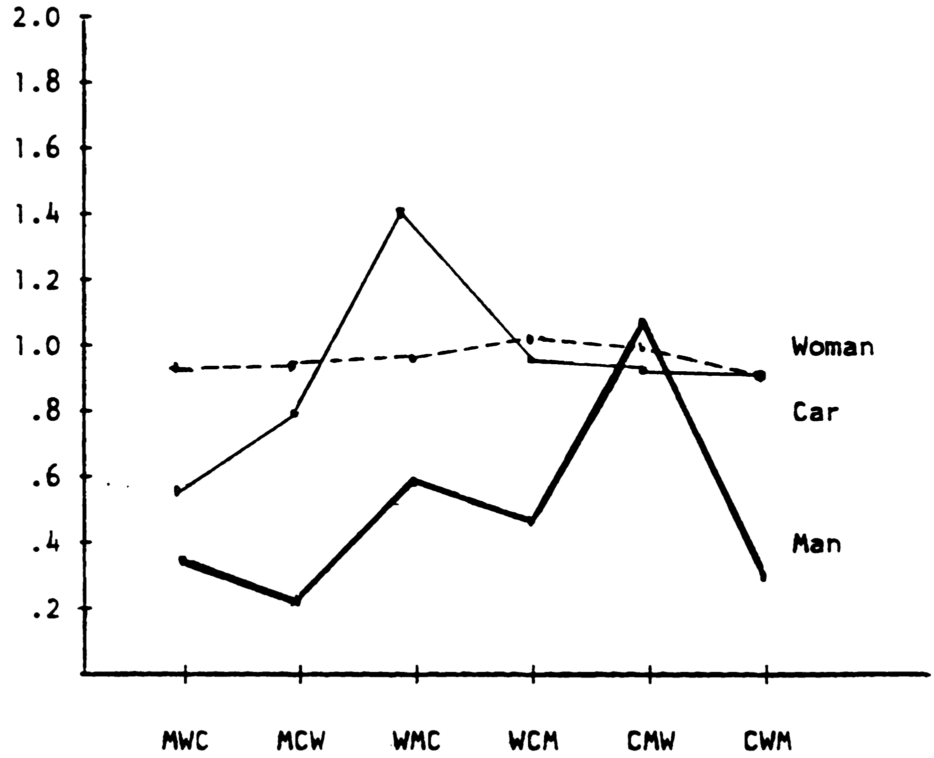


Figure 4. The drawing by order (DxO) interaction for Emphasis Line.

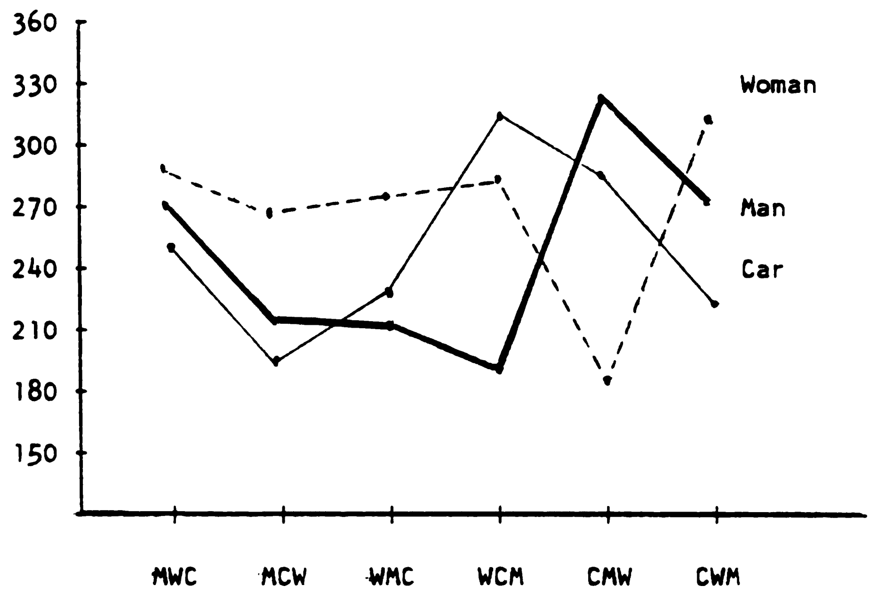


Figure 5. The drawing by order (DxO) interaction for Time (in seconds).

# APPENDICES

# APPENDIX A

The situational manipulation that was selected to induce high and low levels of anxiety in subjects was the presence of the experimenter during DAP administration. This manipulation was selected because: 1) it was previously demonstrated to have powerful effects on DAP performance (Cassel, Johnson, and Burns, 1958; Roach, 1981), 2) it has been the subject of extensive empirical and theoretical efforts under the rubric of "social facilitation" in the area of Social Psychology, 3) much is known about its impact on a variety of tasks, and 4) it is clearly relevant to and easily manipulable in the clinical setting. The focus of this section will be on briefly presenting each of the currently contending theories that attempt to explain the impact of the presence of another individual on task performance, and then to discuss the implications of each theory for the current experimental task of interest, i.e. the DAP.

The effect of the presence of another individual on task performance has been the subject of a lively theoretical debate in Social Psychology. Social Facilitation of performance was first noted by Triplett (1898). He discovered that speeded performance improved on two different tasks (riding a bicycle ans reeling a fishing line) when individuals performed in the presence of a coacter as compared to working alone. This study stimulated many others that attempted to isolate the effects of the presence of an observer while controlling for counfounding variables such as competition, modelling, and distraction (e.g. Pessin, 1933). Instead of providing greater clarity, the results of these studies led to confusion about the impact of an observer on task performance. Numerous empirical demonstrations of social facilitation were matched by a variety of studies in which performance decrements occured as a function of the presence of an observer. Since the field of social facilitation research lacked a theory to organize and make sense out of the data, interest in the topic waned from 1935 to 1965. Following the appearance of Zajonc's theory in 1965, interest was again sparked in social facilitation research. Zajonc's theory provided a framework that adequately explained previous results. Since the appearance of his theory, three alternative positions have appeared, i.e. Cottrell (1968), Sanders and Baron (1975), and Wicklund and Duval (1972). Each position will be presented separately along with its implications for the experimenter's presence during administration of the DAP. Prior to examination of these theorists, it is necessary to complete a careful task analysis of the DAP test situation to determine the extent to which theories formulated to account for the impact of the presence of an observer may be applied.

Drawing the human anatomy is clearly a complex, infrequently practiced task for most adults to perform.

Typically, the subject that is asked to draw a person has had little artistic training and highly limited experience in drawing. Thus, drawing skills are poor, mistakes are frequent, and dissatisfaction with performance is likely. Unlike other social facilitation tasks, performance is not likely to improve significantly over a series of trials unless the trials are frequent or the subject receives training (Leviton and Kiraly, 1974; Burns and Velicer, 1977). Since the DAP is unlikely to be administered with high frequency in the clinical situation, it is of relatively little interest to examine DAP performance for well practiced subjects. However, the amount of artistic training of the subject should be taken into account when evaluationg the DAP since artisitc quality appears to be related to clinical judgements about subjects (Cressen, 1975; Solar, Bruehl, and Kovacs, 1971).

A second difference between the DAP and other social facilitation tasks is the manner in which DAP performance is evaluated. Most social facilitation tasks have clearly defined measures that are simple, easy to obtain, and can be measured at various intervals. For example, some variables are speed of task performance (e.g. reeling a fishing line, riding a bike), frequency or quantity of task performance (amount of prose copied, volume of hand clapping), or correctness of response (list learning, word recognition under brief exposures). In contrast, DAP performance is assessed using a variety of quality measures. Speed, quantity, and correctness are not directly asssessed. Subjects are free to make drawing errors, and then spontaneously correct them. In short, the task involves the development of an image that gradually evolves from the productive and corrective efforts of the artist. Performance is not periodically assessed in the research setting although observations of the drawing process are valuable to clinicians. The final product is typically the only part of the process that is evaluated in research settings. The implication is that direct, simple effects of the presence of an administrator are difficult to assess due to the complex processes involved in task performance.

Third, research on the impact of experimenter's presence of the DAP performance confounds the variables of observer's status with observer's presence. Many social facilitation studies use observers with a low status (confederates who are said to be subjects waiting for another study). Use of a high status observer is likely to increase "evaluation apprehension" of the subject which leads to the combinatorial effects of "mere presence" and "evaluation apprehension" (Henchy and Glass, 1968). Using a confederate as an observer in the DAP situation makes little sense whenever the focus is on evaluating the DAP as a personality assessment instrument, because disinterested observers are unlikely to be present during administration of the DAP in the clinical setting.

A final difference lies in the freedom of the subject in the DAP situation to determine the length of time that she or he will perform the task. This differs from previous social facilitation tasks which include clear demands for a set amount of performance during a period of time. The result of the subject's freedom to determine amount of task performance on the DAP is that many of the subjects draw stick figures, incomplete figures, or unelaborated complete figures so that they can leave the situation (Handler and Reyher, 1964; Roach, 1981). Thus, a clear easy path for taking instrumental action to avoid aversive aspects of task performance is open to subjects in DAP research.

The implication of this discussion of the differences between the DAP task and other typical social facilitation tasks is that the DAP task is too complex, and the situation contains too many confounding variables, to serve as a test of the validity of different theoretical efforts which attempt to explain "mere presence" effects. Thus, the intent of examining social facilitation theories is not to evaluate the adequacy of each theory, but rather to explore the contributions to understanding the DAP situation that each theory may provide, and to determine which theory would serve as the best frame of reference for research on the impact of the experimenter's presence on DAP performance.

### Zajonc's Application of Spence-Hull Drive Theory

Zajonc proposed (1965) and defended (1980) a specific application of Spence-Hull Drive Theory to the field of social facilitation research. He hypothesized that contradictory results could be reconciled if the mere presence of another person was considered to be a source of general arousal (drive). If this assumption is accepted, then he argued that the multiplicative law of $Ej = f(D \times Hj)$ (Spence, 1956 in Zajonc, 1980) could be applied to resolve the contradictions. In this equation "E" represents the likelihood and vigor that respose j will be made, "D" represents the level of drive (non-specific arousal), and "H" represents the habit strength of a response j which is defined as the frequency of pairings of response j with a given stimulus in the past. This law accounts for the contradictory social facilitation results since it indicates that increases in drive level result in a greater likelihood of producing dominant responses, (i.e. responses with higher habit strengths) for a given situation. Since dominant responses on simple and/or well learned tasks tend to be the correct responses, the pressence of drive inducing stimuli result in performance facilitation for simple, well learned tasks. In the case of complex and/or unfamiliar tasks, the dominant response is typically incorrect, and thus performance decrements occur in the presence of drive inducing stimuli. Therefore, if the presence of an observer is drive inducing, then performance facilitation is likely on simple well learned tasks, and performance decrements will occur on complex, unfamiliar tasks.

Zajonc (1980) indicated that his use of the word "mere is an abstraction since another individual may not be present in a situation without also being a "rich source of meaningful stimulation." The meaningful stimulation that the other person provides is likely to produce directive effects on one's performance. However, Zajonc (1980) argued that in addition to directive effects that are situation specific, there are also non-directive effects that result from the "mere" presence of another person. He states that "non-directive effects are always the same and always there, whereas directive cues vary in kind and magnitude from context to context." Thus, Zajonc (1980) states:

> When we speak of mere presence in context of social facilitation, we must mean that performance associated with the presence of others can be obtained even though all other factors and processes commonly associated with the presence of others are eliminated. That is presence of others can have performance effects even though there is no chance of imitation, even though competition is ruled out, even though the spectators or the companion does not control the performer's reinforcement, and even though the companion's pressence does not signal rewards or punishments.

Based on Zajonc's theory, one might expect performance decrements on the DAP when it is obtained in the presence of an observer since it is a very complex, poorly learned task for most subjects. In short, the theory would predict that the presence of an observer would enhance dominant responses which in this case would be incorrect drawing behaviors. Since most experience with drawing occurs in childhood, one might expect that when a subject's level of arousal (drive) is increased, drawing behaviors which were frequently practiced in earlier years (greater habit strength) are likely to reappear (dominant responses). Thus, one might expect more childlike drawings (greater primitivization) of the human figure in the presence of stimuli that induce arousal. This hypothesis is supported by the data obtained by Handler and Reyher (1964) and Roach (1981) who found greater amounts of head and body simplification and of distortion in human figure drawings obtained in high stress conditions than in low stress conditions. Thus Zajonc's (1965, 1980) theory accurately predicts and explains greater primitivization of the figure drawings in the observer present condition.

Unfortunately, Zajonc's theory does not explain all of the findings of previous studies since level of sympathetic nervous system arousal (mean galvanic skin conductance) was not significantly different across experimenter present and absent conditions. If general arousal level was the mediating mechanism that affected performance, then a main effect for experimenter's presence versus absence should have occured on the arousal variables.

Zajonc's theory also does not explain why subjects spend less time drawing in the presence of the experimenter than in the alone condition (Roach, 1981). Zajonc (1980) suggested that increases in drive level were not aversive, yet Roach's (1981) findings suggested that the experimenter present condition is experienced by subjects as aversive. Zajonc (1980) has argued against "evaluation apprehension" explanations stating that these positions assume that potential for being evaluated is present when effects are obtained and that this situation is experienced as aversive by the subjects. In his 1980 defense of his theory, he pointed out that there had been no evidence that subjects take instrumental action designed to alter aversive conditions in social facilitation studies. The conclusion that the DAP situation is aversive for subjects when the experimenter is present indicates the liklihood that evaluation apprehension is opperating in addition to "mere presence" effects. In order to account for these findings, Zajonc's theory would have to be seriously modified, and this seems to be far from appropriate since it was not intended to explain anything more than "mere presence" effects.

<u>Cottrell's Learned Drive Hypothesis</u>

Cottrell (1968, 1972) proposed a revision of Zajonc's theory that he felt was required due to the failure to find significant differences in performance between subjects tested alone and subjects tested with two blindfolded confederates present who were unable to evaluate the subject's responses (Cottrell, Wack, Sekerak, and Little, 1968). This study included a third condition in which subjects were tested in the presence of two observers who were not blindfolded, and this group differed significantly in performance in the expected manner from subjects in the alone and "mere presence" (blindfolded observers) condition. Cottrell (1968) suggested that mere presence was not a sufficient conditions to enhance the dominant response, and that observers that could evaluate the subjects performance were required. This led to his hypothesis that the presence of others is a learned source of drive, and that at birth the mere presence of others is motivationally neutral. It is through life experiences that one learns to associate the mere presence of others with either positive or negative outcomes. Concequently, most subjects anticipate a negative outcome (a negative evaluation) when they are asked to draw. This leads to increases in drive levels which result in greater primitivization of the drawings in the manner described above.

The advantage of Cottrell's position is that it assumes that the presence of the experimenter is aversive (presumably because the experimenter will evaluate the subject's performance), and thus explains the motivation to finish quickly and leave the situation. However, it does not explain why subjects stay in the situation and produce a drawing that at least meets minimal task demands before leaving. If the dominant response is flight, then the conflictual motivational mechanism of desire to please the experimenter must be specified to explain the typical pattern of findings. Specification of a heirchy of responses in terms of reacting to the situation i.e. the dominant response is to please the experimenter, and the second most dominant response is to flee the situation, would account for the gross behavior, but would ignore the level of analysis of greatest interest which is the drawing behavior. Thus, Cottrell's position would have to be modified in terms of nesting dominant responses of drawing behavior within dominant responses of gross behavior in reaction to the situation, and this is not desirable, because his theory was not intended for this purpose.

Sanders and Baron's distraction hypothesis

Sanders and Baron (1975, Baron, Moore, and Sanders, 1978) also attempted to address the problem of why the presence of others increases drive level. They argue that "drivelike effects occur because the presence of species mates creates attentional conflict within subjects in social facilitation research settings" (Baron, Moore, and Sanders, 1978). The conflict lies between attending to the task and attending to the present individual. Ample evidence has demonstrated that mechanical auditory distractors have effects on task performance that are very similar to effects due to the presence of an audience or a coacter (e.g.

Pessin, 1933). Thus, their arguement rests on whether they can demonstrate that the mere presence of others is distracting. Attempts to substantiate their hypothesis have produced equivocal results. Baron et al (1978) failed to find significant differences on self report measures of distractibility between observer present and absent conditions. Yet, Sanders, Baron, and Moore (1978) produced data that indicated that subjects were more accurate in estimating the amount of work performed by a coacter than a non-coacter. They reasoned that the greater accuracy was the result of increased attention directed away from the task toward the coacter, and that this "distraction" was responsible for producing poorer performance on the task. When taken together, these findings suggest that many subjects may not be aware (retrospectively) of whether or not they were distracted by the presence of others when other sources of evidence suggest that they were distracted.

Sanders and Baron's (1975) distraction hypothesis does not add to our understanding of the DAP experimental situation. It is reasonable to posit that the present experimenter is a source of distraction, but their position suggests that experimenters are interchengeable in the DAP test situation. Although differences between individual experimenters have not been found in the past (Star and Marcuse, 1959; Holtzman, 1952; and Roach, 1981), the sex of the experimenter has entered into important interactions with the experimenter's presence and sex of subject for two drawing variables. Thus, Sanders and Baron's (1975) position would have to be modified to account for differences in experimenter's status and sex.

<u>Wicklund and Duval's Objective Self Awareness Theory</u>

Unlike Cottrell (1968) and Sanders and Baron (1975) who modified Zajonc's theory, Wicklund and Duvall (1971, Wicklund, 1975) proposed a theory that is essentially different from Zajonc's theory. They argue that concious attention is directed either entirely toward the self or toward external events in the environment. Particular stimuli, such as a mirror, the presence of an observer, or a tape recording of the subject's voice, focus the person's attention on some dimension of self, i.e. results in objective self awareness. All other stimuli distract attention away from self and toward the environment. When attention is directed toward some dimension of self, the result is self evaluation of the discrepancy between attainment and aspiration on that dimension. If this discrepancy is positive (typically due to a recent success experience), then a person should experience positive affect, and will seek out situations that stimulate objective self awareness (approach response). However, if the discrepancy is negative, an individual will experience negative affect and will actively attempt to avoid stimuli which result in objective self awareness. In situations where the discrepancy is negative and objective self awareness is inescapable, the person will attempt to reduce the discrepancy between attainment and aspiration by improving performance. The degree of affect that is experienced is condidered to be a joint function of the degree of the discrepancy and the proportion of attention focused on the discrepancy during a time interval.

In an attempt to apply their theory to the study of social facilitation, Wicklund and Duval (1971) start by agreeing with Cottrell (1968) and Henchy and Glass (1968) that the possibility of being evaluated in a situation is a necessary condition for the enhancement of the dominant responses. Wicklund and Duval (1971) then question whether the enhancement of dominant responses needs to be explained through variables related to the presence of others. Thus, the presence of an observer is relegated to the status of being one member of a class of variables that induces objective self awareness.

Social facilitation is explained by the presence of another person inducing objective self awareness in subjects to the extent that the other is judged to be observing and evaluating performance. Objective self awareness results in evaluation of performance against standards of correct performance which produces efforts aimed at reducing the discrepancy. The efforts will be effective for simple, well learned tasks, and ineffective for complex, poorly learned tasks.

Wicklund and Duval (1971) succeded in replicating social facilitation effects with the presence of a mirror, but they noted that their findings could not rule out alternative explanations. They argued that a critical test of Objective Self Awareness theory versus Zajonc's generalized drive theory would be to produce social facilitation effects without manipulating drive level. Apparantly, the critical test has not yet been performed although attempts have been made ( e.g. Liebling, Seiler, and Shaver, 1975a; Wicklund, 1975b; Liebling, Seiler, and Shaver, 1975b).

Roach used Objective Self Awareness Theory to interpret his results. Thus, the present discussion will borrow heavily from this previous application. Roach (1981) proposed that objective self awareness was induced in all of his subjects by the process of recording Galvanic skin resistance. He then suggested that his findings indicated that subjects in the experimenter present condition differed from subjects in the experimenter absent condition in terms of the dimension along which self evaluation occurred. In the experimenter present condition, subjects seemed to be more concerned about their interpersonal appeal than in their drawing performance. This interpretation was based on the findings that in the present condition: 1) the drawings were of poorer quality since they reflected less elaboration, effort and detail, and 2) subjects spent less time on their drawings.

In contrast, task performance seemed to be the critical dimension of self evaluation for subjects in the absent condition since: 1) the drawings were of better quality, and 2) subjects spent more time on their drawings.

Roach (1981) suggested that differences in the time spent on and the quality of the figure drawings obtained between the experimenter present and absent conditions were due to differences in the degree to which subjects could avoid objective self awareness and take instrumental action to reduce the discrepancy between performance and standards for performance. In the present condition, the presence of the experimenter was probably so salient that the subjects could not avoid objective self awareness by distracting themselves. Further, the imposition of silence prevented the subject from taking action aimed at reducing the discrepancy between their judgements of their appeal and their desire to be liked, e.g. engaging the experimenter in pleasant conversation. Since these subjects were unable to avoid objective self awareness, and unable to reduce the discrepancy and thus avoid negative affect, they had to finish the task quickly to get out of the situation. In contrast, subjects in the experimenter absent condition could distract themselves from self evaluation by concentrating on the mechanics of the drawing task. This focusing of attention on the process of drawing was also likely to result in improvements in their drawings, and this,in turn, reduced the discrepancy between their desire to draw well and ongoing judgements of their drawings as they complete them. THerefore, these subjects were able to tolerate the situation better, and stay longer.

Conclusion

The application of Objective Self Awareness theory to Roach's (1981) results demonstrates that the theory is sufficiently comprehensive to account for complex findings obtained in the DAP testing situation. Drive theories are not sufficiently complex to account for the subjects need to flee the situation and the specific drawing behaviors of interest, the subjects ability to evaluate and correct their drawings, or the differences in the impact of the experimenter's sex and status. Therefore, Objective Self Awareness theory appears to be the best available frame of reference in which to consider the impact of the administrator on DAP performance, primarily because too many factors opperate in the DAP test situation that prevent it from being reduced to the status of a "mere presence" study. Thus, the application of the theoretical positions of Zajonc(1965), Cottrell (1968), or Sanders and Baron (1975) would require the specification of additional modifications of their theories. Since their theoretical positions were not designed to account for the complex DAP situation, it seems inappropriate to modify them. Thus, Objective self awareness theory was selected as the frame of reference for interpreting the results of the current study since additional theoretical mechanisms do not need to be created to account for previous results.

REFERENCES

Barron, R. S., Moore, D., and Sanders, G. S. Distraction as a souurce of drive in social facilitaion research. Journal of Personality and Social Psychology, 1978, 36, 816-824.

Burns, C.J. and Velicer, W. F. Art instruction and the Goodenough-Harris Drawing test in fifth-graders. Psychology in the Schools, 1977, 14, 109-112.

Cassel, R. H., Johnson, A., and Burns, W. H. Examiner, ego-defense, and the H-T-P test. Journal of Clinical Psychology, 1958, 14, 157-160.

Cottrell,N. B. Performance in the presence of other human beings: Mere presence, audience, and affiliation effects. In E. C. Simmel, R. A. Hoppe, and G. A. Milton (Eds.) Social Facilitation and Imitative Behavior, Boston: Allyn and Bacon, 1968, 91-110.

Cottrell,N. B. Social Facilitation. In C. McClintock (Ed.) Experimental Social Psychology, New York: McGraw Hill, 1972.

Cottrell,N. B., Wack, D. L., Sekerak, G. L., and Little, R. H. Social facilitation of dominant responses by the presence of an audience and the mere presence of others. Journal of Personality and Social Psychology, 1968, 35, 424-434.

Cressen, R. Artistic quality of drawings and judges evaluation of the DAP. Journal of Personality Assessment, 1975, 39, 132-137.

Duval, S.and Wicklund, R. A. A theory of objective self awareness . New York: Academic Press, 1972.

Handler, L. and Reyher, J. The effects of stress on the Draw-a-Person test. Journal of Consulting Psychology, 1964, 28, 259-264.

Henchy, T. and Glass, D. C. Evaluation apprehension and the social facilitation of dominant and subordinate responses. Journal of Personality and Social Psychology, 1968, 10, 446-454.

Holtzman W. H. The examiner as a variable in the Draw a Person test. Journal of Consulting Psychology, 1952, 16, 145-148.

Leibling,B. A., Seiler, M., and Shaver, P. Self awareness and cigarette smoking behavior. Journal of Experimental Social Psychology, 1974, 10, 325-332.

Leibling,B. A., Seiler, M., and Shaver, P. Unsolved problems for self-awareness theory: A reply to Wicklund. Journal of Experimental Social Psychology, 1975, 11, 82-85.

Leviton H. and Kirally, A. The effects of a short term training program on the Draw-a-Man test scores of Pre-school children. Educational and Psychological Measurement, 1974, 34, 435-438.

Pessin, J. The comparitive effects of social and mechanical stimulation on memorizing. *American Journal of Psychology*, 1933, *45*, 263-270.

Roach, J.P. The effect of an experimenter's presence or absence during administration of the Draw a Person test. Unpublished Master's Thesis, Michigan State University, 1981.

Sanders, G. S. and Baron, R. S. The motivating effects of distraction on task performance. *Journal of Personality and Social Psychology*, 1975, *32*, 956-963.

Sanders, G. S., Baron, R. S., and Moore, D. Distraction and Social comparison as mediators of social facilitation effects. *Journal of Experimental Social Psychology*, 1978, *14*, 291-303.

Solar, D., Bruehl, D., and Kovacs, J. The Draw-a-Person test: social conformity or artistic ability? *Journal of Personality Assessment*, 1971, *40*, 325-332.

Starr, A.and Marcuse, B. Reliability in the Draw a Person test. *Journal of Projective Techniques*, 1959, *23*, 83-86.

Tripplet N. The dynamogenic factors in pace-making and competition. *American Journal of Psychology*, 1898, *9*, 507-533.

Wicklund,R. A. Objective self awareness. in L. Berkowitz (ed.) *Advances in Experimental Social Psychology*, New York Academic Press, 1975a.

Wicklund, R. A. Discrepancy reduction or attempted distraction? A reply to Leibling, Seiler, and Shaver. Journal of Experimental Social Psychology, 1975b, 11, 78-81.

Wicklund, R. A. and Duvall, S. Opinion change and performance facilitation as a result of objective self awareness. Journal of Experimental Social Psychology, 1971, 7, 319-342.

Zajonc, R. B. Social facilitation. Science, 1965, 149, 269-274.

Zajonc, R. B. Compresence. In P. Paulus (Ed.), The Psychology of Group Influence, Hillsdale, NJ: Erlbaum, 1980.

# APPENDIX B

Although the Draw a Person test (DAP) has enjoyed wide interest and usage in clinical settings in the past (Lubin, Wallis, and Paine, 1971; Sundberg, 1961), empirical support for its reliability and validity as a measure of various aspects of personality has been lacking. In a 1957 review of the empirical literature on human figure drawings, Swenson concluded that most studies had not supported Machover's hypotheses, but that much of the research had not been designed to examine the DAP as a measuring device. In a subsequent review of the literatue between 1957 and 1966, Swenson (1968) concluded that research during that period was more sophisticated and thus provided more support for Machover's theory. However, he qualified this comment by stating that the validity of a particular aspect of a drawing was directly related to the reliability of that aspect. He argued that reliability was ,in turn, a direct linear function of the amount of drawing behavior that was used to assess the aspect under consideration. Thus, global ratings were found to be more reliable than structural or content variables. He concluded that the reliabilities for structural and content variables were too low to make reasonably reliable, clinical judgements, and therefore suggested that if these variables were to be used, the clinician should obtain several drawings from the client so that clinical judgements would be based upon a larger sample of drawing behavior.

In a 1968 review of the literature on the clinical utility of figure drawings in performing clinical assessments, Roback was not as optimistic as Swenson. He concluded that Machover's hypotheses were not supported. However, he also stated that there was a paucity of well designed studies to test the validity of the DAP. Thus, he suggested that well designed studies were required to discern whether the DAP contributed any useful information during clinical assessments.

In 1965, Handler and Reyher reviewed the literature on twenty-one figure drawing anxiety indices, and proposed a viable explanation for the low level of reliability of structured variables. They examined the results of fifty-one studies, and then tallied whether the results agreed, opposed, or were non-significant with respect to traditional clinical interpretations of anxiety for each index. They discovered that for eleven of the indices, at least one study opposed the traditional clinical interpretation, while twenty indices had one or more studies that had non-significant findings. Seven of the twenty-one indices had a greater number of studies that reported opposed or non-significant findings than studies that reported findings in aggreement with traditional clinical interpretation.

Handler and Reyher (1965) argued that the failure to differentiate between the task (intrapsychic) and the situational (external) sources of anxiety might account for many of the contradictory and non-significant results. Handler and Reyher (1964) had previously demonstrated that figure drawings were affected by situationally induced stress. In this study, a greater number of indices significantly differentiated high from low stress conditions for human figure drawings than for car drawings. This pattern of results was interpreted by Handler and Reyher (1964) as being supportive of their hypothesis that manifestations of anxiety in human figure drawings have two sources: the laboratory stress situation, and the anxiety producing intrapsychic processes that are activated by the task of drawing the human figure.

In the 1965 literature review, they noted that contradictory results occured for the indices in which presence of index was traditionally considered to be an indicator of intrapsychic anxiety (e.g. shading, hair shading, reinforcement, erasure, and emphasis lines). They argued that when subjects react to the stressful testing situation by attempting to produce the figures quickly and then flee the setting, they are likely to produce significantly less of the drawing behavior in question. Thus when figure drawings are obtained in high anxiety producing testing conditions, presence of the index tends to indicate attempts to cope with situational sources of anxiety rather than the presence of intrapsychic anxiety in reaction to the task of drawing the human anatomy. Reyher (1965) concluded that:

> The presence of anxiety indices in a drawing cannot be used to measure intrapsychic stress. Instead, the presence of shading, erasure, reinforcement,heavy line, heavy pressure, (and to a lesser extent, delineation line absence and body simplification which seem to reflect both intrapsychic and external stress) may be a reaction to an external source of stress. These indices seem more sensitive to external stress than to intrapsychic stress, and thus seem to be less reliable indices of symbolic conflict than the other indices.

Handler and Reyher (1965) also discussed the set of indices in which the absence of the index is traditionally associated with the presence of intrapsychic anxiety (e.g. omission, detail loss, and distortion). They note that the findings for these variables show strong agreement with traditional clinical interpretation, but that the results also support the avoidance hypothesis since these indices also reflect "a dimunition in effort, articulation, and detail". In short, for this set of indices there is a confounding of effects from task and situational sources of anxiety.

The present study is concerned with separating the effects of task and situational sources of anxiety. If figure drawings are to be accurately interpreted within the clinical setting, then the relative contributions to the variance of drawing variables of each source must be studied and understood. Traditionally, DAP researchers have concentrated their efforts on the task of examining the effects of the task source to the exclusion of the situational source. Thus, the remainder of this literature survey will only be devoted to a review of all DAP studies that provide information concerning the degree to which DAP variables are sensitive to the anxiety producing characteristics of the laboratory situation.

Three types of studies emerge from the DAP literature that provide information on the degree of sensitivity to the situational source of anxiety: reliability studies, factor analytic studies, and situational manipulation studies.. Each of these areas will be reviewed in independent subsections below. The number of potential drawing variables that could be studied is immense, and therefore must be limited for the sake of brevity. The review will be limited to the set of variables that will be used in the current study, i.e. Handler's (1967) figure drawing anxiety indices. Following the review of the literature, an attempt will be made in the final subsection to classify Handler's indices into four heuristic categories that reflect degree of sensitivity to situational sources of anxiety. This attempt will be made based on the contributions of previous DAP studies.

### DAP Reliability Studies

Reliability studies serve as a possible source of information about the degree of sensitivity of Handler's

(1967) figure drawing indices to external sources of anxiety, because reliability estimates reflect the degree of error variance in the indices. The anxiety producing characteristics of the laboratory situation are likely to be the most significant component of error variance for many of the drawing indices. Therefore, comparisons of test-retest reliability estimates of a given variable obtained under high and low anxiety producing testing conditions and under cross situational conditions would provide an indication of the degree to which index is sensitive. The studies that are reviewed below have been separated into three types: interrater, reliability, test-retest reliability, and alternate forms (man-woman figures) reliability.

Interrater reliability. Estimates of interrater reliability for each of Handler's (1967) anxiety indices are uniformly high. Handler (1964) reported that interrater reliabilities on a rough version of his scale ranged from .67 to .97 with a median of .87. Handler (1967) also reported two unpublished studies in which reliabilities ranged from .79 to 1.00 with a median score of .88 (Jacobson, 1966 in Handler, 1967) and from .79 to 1.00 with a median of .91 (Nordquist, 1966in Handler, 1967). In two additional, independent studies using the Handler scales, Attkinson, Waidler, Jeffrey, and Lambert (1974) found that interrater reliabilities ranged from .71 to 1.00 with a median of .90, and Roach (1981) found that they ranged from

.66 to .97 with a median of .90. Clearly, Handler's (1967) anxiety indices are reliably scored by different raters. This leads to the question of whether these indices are stable over time.

Test-Retest reliability. Unfortunately, test-retest reliability data are lacking on the Handler scales and in the field in general. Only one study has been reported that examined the test-retest reliability for variables that were measured in a similar fasion to that suggested by Handler (1967). Star and Marcuse (1959) examined test-retest reliability for the following three groups: A) same experimenter, tested one month apart, B) different experimenters tested one month apart, and C) same experimenter, tested immediately afterward. All subjects were tested in groups, and following the second drawing session they were asked if they thought on the second administration they were supposed to draw figures that were as simmilar as possible, as dissimilar as possible, or that it didn't matter. The only variables that were measured that were related to Handler's scales were placement, body size, and head:body ratio. Test-retest reliabilities across all groups for these variables were

.43, .52 and .52 for placement, size, and head:body ratio, respectively. Unfortunately, test-retest reliabilities were not reported for individual groups so that the impact of conditions on the reliabilities could be assessed. Out of 193 subjects, only 20 thought that they should draw their second set of drawings similar to the first se, while 5 subjects thought they should draw them differently. The remaining 168 subjects thought that it did not matter.

<u>Alternate forms reliability</u>. Two additional studies offered results that are pertinant although they were not direct assessments of test-retest reliability. Attkisson et al (1974) computed the correlations between male and female drawings on Handler's (1967) measures as an approximation of alternate forms reliability. They found that cross drawing correlations for two raters on each index were: erasure (.59,.67), shading (.65,.65), delineation line absence (.53,.23), transparancy (.54,.24),hair shading (.37,.44), distortions (.78,.72), reinforcement (.64,.48), light and heavy line (.65,.57), placement (.68,.68), omission (.70,.68), size (.47,.43), head size (.54,.54), head:body ratio (.51,.57), emphasis line (.32,.46), line discontinuity (.56,.60), head simplifi- cation (.71,.66), and body simplification (.58,.58), Attkisson et al (1974) concluded that the amount of shared variance was too low for the drawings to be used interchan- geably.

Nichols and Strumpher (1962) estimated reliabilities for their individual items for their factor analytic study by scoring them as present or absent in the male and female figures , and then computing the phi coefficients for the items between drawings. They combined their college student sample (tested in groups) with their VA sample (normal-hospitalized, neurotic and schizophrenic inpatients all tested individually). Thus, it is difficult to determine the impact on reliabilities of level of anxiety induced by the testing procedures. They reported the following phi coefficients for the items that are of current interest: erasure (.46), shading (.31), delineation line absence (.45), vertical imbalance (.38), and transparancy (.26). With the exception of vertical imbalance, these cross drawing reliabilities are much lower than the correlations reported by Attkisson et al (1974). This probably reflects a restriction of range problem that resulted from the 0-1 coding of items in the Nichols and Strumpher (1962) study. Since Handler's scales use four points instead of two, more information about the aspect that is scored is retained in the rating and thus correlations will tend to be higher.

In conclusion, the data on test-retest reliability are quite meager, and thus no conclusions may be drawn about the degree of sensitivity of variables to external sources of anxiety. Clearly efforts must be directed toward examining the stability of Handler's indices over time if validity questions are to be answered.

## Factor Analytic Studies

Factor analytic studies serve as a useful source of information about the sensitivity of drawing indices to the anxiety producing characteristics of the laboratory situation if they include situational manipulations of the conditions under which figure drawings are obtained. Under these conditions, a factor might emerge that would reflect sensitivity to external sources of anxiety.

Only two attempts have been made at examining the factor structure of DAP measures (Nichols and Strumpher, 1962 and Adler, 1971). These studies have produced surprizingly similar results despite differences in methodology and in populations. Nichols and Strumpher (1962) obtained male and female figure drawings from 107 male college students through group administration, and from 90 male VA patients (30 normal hospitalized, 30 inpatient neurotics, and 30 inpatient schizophrenics) through individual administration. Drawings were scored on all scales that had previously appeared in the literature, e.g. sexual differentiation, adjustment, maturity, aggression, and body image. They also scored the drawings for the presence or absence of fourteen details some of which were described above. Data from the total sample (VA and college samples merged) and from the VA sample alone were factor analyzed using a principle components method with communalities estimated as the highest correlationin each row, followed by varimax rotation. Four factors were retained for both the total sample and the VA sample. The first factor for the total sample accounted for most of the common variance among drawing variables, and was described as representing the dimension of drawing ability, i.e. the ability to produce a life like human figure. Factors II and IV appeared to be spurious factors that were artifacts of the kind of items that were included. Factor III was a size of figure factor that seemed to be related to artistic quality since items from this factor also loaded slightly on the first factor. This analysis failed to produce a factor that reflected sensitivity to external sources of anxiety, although one might have been expected to emerge given the differences between methods of administration for the two populations. The sample variable (VA versus College student) did show a moderate loading on the artistic quality factor which indicated better quality drawings by the college students. This finding may have been due to differences in method of administration rather than population although it is impossible to tell since these variables are confounded.

For the VA sample Nichols and Strumpher (1962) decided to use an oblique rotation. They found that the first factor (Factor A) again accounted for a majority of the common variance, and that it reflectd ability to draw a life like human figure. Factor B was interpreted as a tendency to draw big, bosomy figures; Factor C was interpreted as defensiveness and constriction (missing hands, hands behind back, vertical imbalance); and Factor D was a spurious factor that did not reflect aspects of the drawing. Factor B and C were bothe negatively correlated with A and showed a mild positive correlation with each other.

In the second study, Adler (1971) obtained person and opposite sex person figure drawings through individual administration conditions from 216 consecutively admitted, short term, psychiatric patients. The drawings were scored for thirteen scales that reflected size deviation, placement deviation, and other "aspects of form level, detailing, and individual differentiation." The drawings were also scored for the presence or absence of fourty additional items. Twenty five of these were discarded due to low rate agreement or low frequency of occurance (appearance in less than five of two hundred cases). Adler used a principle components method with unities in the diagonals followed by a varimax rotation. Adler's (1971) findings clearly replicated those of Nichols and Strumpher (1962) since he retained four factors with the first factor accounting for 57% of the common variance. Adler (1971) argued that this factor represented cognitive maturity or sophistication of body concept since the loadings suggested the degree to which the figure was a mature body representation. Factor II was a size and placement factor that he said resembled the size factor in the Nichols and Strumpher (1962) study.

Factor III was interpreted as representing "a disturbed relationship between the discrete parts of the figure, a failure in the integrative process." Factor IV seemed to reflect a lack of motor control and/or concern about control in execution of the drawing.

Taken together, thee studies are rather compelling support for Adler's (1971) arguement that the DAP is a one factor test that measures one aspect of cognitive maturity, i.e. sophistication of body concept. However, several methodological issues need to be addressed that may limit the applicability of this conclusion.

The first issue concerns the manner in which the items were scored in each study. Use of a dichotomous scoring system limits the amount of useful information that can be provided by scoring an item. It necessarily results in restriction of range problems since normative base rates for most of the items imposes ceiling effects when a two point scale is used, i.e. many of the items would fail to differentiate more than a few subjects from the norm if a present/absent coding system is used. The restriction problem then lowers the reliabilities of the items which limits the pairwise correlations between items that were then factor analyzed. Concequently, items scored on a present/absent basis contributed relatively little to the factor scores, and this is confirmed since inspection of the loadings shows that 2 point items showed much lower loadings on all factors that scales that used three or more points in both studies. If Handler's scales had been used, interitem correlations probably would have been much higher, and the factor structure would have been significantly altered with greater variance accounted for by later factors. This argue- ment is highly speculative, and it seems likely that a "cog- nitive maturity" factor that accounted for a large portion of the variance would emerge even if the items were scored differently.

The second methodological question concerns the effect of conditions of DAP administration on the variables, and concequences for the factor analytic results. Both clinical populations were tested individually with the administrator present in both studies. Since Roach (1981) demonstrated that normal subjects leave more impoverished and primitive drawings when subjects are tested with an experimenter present, it seems likely that the same effect could occur in a clinical population, although this remains to be demonstrated. If subjects from the clinical population did finish quickly then they may have produced impoverished drawings that lack articualation and detail upon which personality interpretations may be reliably based. In short, under high anxiety producing test administration conditions, the only substantial source of variation left in figure drawings may be for data that reflects sophistication of body concept with other, richer sources of variation shorn from the figures due to the need to finish quickly ,e.g. the conflict indicators of shading, erasure, reinforceement, etc. If this arguement is correct, then the DAP should not be adminis- tered under high anxiety producing conditions unless a com- parative set of drawings is also obtained under low anxiety producing conditions. It is unfortunate that Nichols and Strumpher (1962) did not report a factor analysis on the college sample alone since comparison of the factor structures produced by college stu- dents tested in low anxiety producing conditions and VA pa- tients tested in high anxiety producing conditions might have confirmed or disconfirmed this arguement.

Experimental Manipulation of Situational Variables

Studies which manipulate laboratory testing conditions and then assess the impact on drawing indices are probably the most important sources for distinguishing between variables that are sensitive to external sources of anxiety and variables that are not. Not surprizing is the fact that the primary contributors of these studies are Handler, Reyher and there respective associates.

The seminal study was reported by Handler and Reyher (1964) which was briefly described above. In this study, Handler and Reyher obtained male, female, and automobile drawings from 57 males in high stress conditions (tested individually, while attached to a polygraph, with the experimenter present, in a laboratory) and low stress conditions (tested in groups, with implied anonynity, in a classroom). The automobile drawing is included in these studies as a relatively neutral comparison drawing. It has been shown to be equally difficult to draw (Handler, 1963), and to result in less sympathetic nervous system arousal than human figure drawings (Handler and Reyher, 1966). Handler and Reyher (1964) found that out of 21 drawing indices, fifteen and eleven indices significantly differentiated conditions for the male and female drawings respectively. Only five of 17 indices significantly differentiated conditions on the automobile drawing (four indices were omitted due to a lack of correspondence with human figures, e.g. hair shading). As was noted above, they considered their pattern of findings to be supportive of their hypothesis that manifestations of anxiety in human figure drawings have two sources: the laboratory stress situation, and the anxiety producing intrapsychic processes that are activated by the task of drawing the human figure.

In an attempt to determine if demand characteristics might account for Handler and Reyher's (1964) findings, one of Handler's students (Neidig, 1970, in Handler, 1967) repeated his high and low stress manipulation, but also included two control groups (instructed to fake anxiety after seeing polygraph, and to fake anxiety without seeing the polygraph). Significantly, more drawing indices differentiated high from low stress conditions for the experimental groups than for either control group. This was judged to indicate that demand characteristics did not produce Handler and Reyher's (1964) results.

In an attempt to replicate and extend Handler and Reyher's (1964) findings, Roach (1981) evaluated the effects of the experimenter's presence or absence during administration, the sex of the experimenter, individual experimenters (3 male, 3 female), and the sex of subject on person, opposite sex person, and car drawings. Dependent measures were fifteen of Handler's drawing indices, the time taken to complete each drawing, and two measures of sympathetic nervous system arousal (mean galvanic skin resistance and frequency of galvanic skin responses). After noting that Handler and Reyher (1964) had confounded a number of variables in their high stress/ low stress manipulation, Roach (1981) hypothesized that the experimenter's presence was the most potent of the group that Handler and Reyher had manipulated, and that the presence/ absence of the experimenter would replicate Handler and Reyher's findings. This hypothesis received strong support since out of 11 indices that had previously discriminated between high and low stress conditions on at least one drawing in the Handler and Reyher (1964) study, six, seven, and two indices significantly discriminated between experimenter present and absent conditions for the person, opposite sex person, and car drawings respectively.

Of the four indices that had not previously discriminated between high and low stress conditions, all failed to discriminate experimenter present from absent conditions in the current study.

Roach (1981) also found that the amount of time spent on all figure drawings was significantly less (40 to 60 seconds per drawing) in the experimenter present than in the absent condition. This finding combined with the directional findings for the drawing variables gave strong support to Handler and Reyher's (1964) hypothesis that their "findings indicate that the anxiety producing characteristics of the task and/or situation may create a desire to finish the figures with a minimum of effort and to leave the situation

In general, the drawings were not affected by individual experimenters, sex of experimenters, or sex of subjects. Although the latter two variables did produce some significant results, these findings are not pertinent for the current discussion. The interested reader will find them described in Roach (1981).

Handler and Reyher (1966) also produced a second major study that provided interesting, relevant data. They were primarily interested in examining whether the automobile drawing served as a comparison figure for the human figures, and found that their hypothesis was strongly confirmed. Summed anxiety indices, frequency of galvanic skin responses, and mean skin conductance significantly differentiated man and woman figure drawings from the automobile figure, but not from each other. Analysis of the individual anxiety indices indicated that 13 of 18 indices successfully differentiated both man and woman drawings from the automobile drawing. One might expect that only variables that were sensitive to external sources of anxiety would fail to differentiate the drawings since all drawings were obtained in individual administration, experimenter present conditions, i.e. the strong situational effect which occured for all three drawings would mask the effects of the internal source of anxiety for those variables that were highly sensitive to anxiety producing characteristics of the situation. Of the five indices that failed to differentiate the drawings, four had differentiated high from low stress conditions in the Handler and Reyher (1964) study on at least two out of three of the drawings (shading, erasures, reinforcement, and emphasis lines). Only one of these indices (large size) had not differentiated drawings in the Handler and Reyher (1964) study.

When evaluating the individual indices, Handler and Reyher (1966) also examined adaptation effects for the drawing indices. The order for the drawings was counterbalanced so that an analysis of adaptation effects independent of order was possible. They found that seven indices showed adaptation that indicated decreasing anxiety with time. One might predict that anxiety stimulated by the task of drawing the human figure (task source) should remain stable over time, and that anxiety stimulated by the situation should decrease as time progresses. Concequently, indices that previously descriminated high from low stress conditions should show adaptation effects while indices that failed to differentiate stress conditions should not. The pattern of findings for adaptation effects supported this hypothesis since six of seven indices that showed adaptation effects (shading, hair shading, erasure, reinforcement, emphasis lines and head simplification had previously differentiated high from low stress conditions, while one (head size) had not.

One other analysis by Handler and Reyher (1966) provides important information, i.e. their attempt to correlate the skin responce frequency and mean conductance measures with each drawing index for each drawing separately. Only 15 of 138 correlations were significant at the .05 level, and this was only slightly better than chance. The significant correlations that were obtained were uniformly low (.21 to .37), and thus not supportive of a direct relationship between physiological measures of arousal and drawing indices.

Five additional studies were located that examined the impact of situational manipulations on figure drawing performance. However, these studies did not use Handler's scales. Cassel, Johnson, and Burns (1958) evaluated the effect the experimenter's presence/ absence on the area (in square inches) and on the number of "interpretable features" of each drawing of the House-Tree-Person test. These drawings were obtained from 130 white employment applicants at a State College. They found significantly smaller person drawings and significantly fewer interpretable features in the person and house drawings. The decrease in area seems contrary to the failure of size and head size to discriminate high from low stress conditions in previous studies (Handler and Reyher, 1964; Roach, 1981). This indicates that adding an area measure to Handler's scales might be beneficial since area may be sensitive to external sources of anxiety although height is not.

Silverman (1966) evaluated the impact of different experimenters and of experimenter attitude (tough or tender) on figure drawing performance of high and low anxious mentally impaired children. The Harris Quality Scales (a measure of sophistication of body concept) were not affected by the experimenter variables, but did differ between high and low anxious children with better quality associated with lower anxiety.

Ludwig (1969) used a pretest-posttest design with his male adolescent subjects randomly assigned to experimental and control groups. One month after the pretest, he had confederates test these subjects on a variety of physical skills. Following their performance, experimental subjects received negative feedback on their physical abilities, while control subjects received no feedback. All subects were immediately evaluated on the same measure as in the first session. Dependent variables were self ratings of physical skills, subjects ratings of the physical skills of their person drawing, and judges ratings of the height, athletic appearance, and affect of the subject's person drawing. For the experimental group, they found significant decreases in the self ratings of physical skills, and in the height of the person drawing following negative feedback. However, they also found an increase in the experimental group's ratings of the physical skills of their person drawing and in the athletic appearance of the drawing. The control group showed no changes on any of the measures from pretest to the post test. Ludwig (1969) concluded that the decrease in self esteem concerning physical skills was reflected in a decrease in the height of the figure, but that a defensive, compensatory mechanism resulted in increases in athletic appaearance of the figure, and in ratings of the physical skills of the figure by the experimental subjects. The control subjects did not change from the pretest to the post test. This study was difficult to evaluate with regard to the current purposes since multiple sources of anxiety were simultaneously manipulated.

As was mentioned above, Star and Marcuse (1959) compared three groups to determine if different experimenters or if the length of time between testing sessions (immediate versus one month) would affect DAP performance. No differences between groups were found. Since the DAP was administered in groups, it seems likely that the test of whether different experimenters would produce different results was not a fair one.

Holtzman (1952) evaluated the impact of different experimenters, sex of experimenter, and sex of subject on size, head size, head:body ratio, vertical imbalance, and placement. None of these variables were effected by the independent variables. The findings of Star and Marcuse (1959) and Holtzman (1952) concerning the impact of different experimenters is consistent with findings by Roach (1981) who failed to find any differences between six experimenters (3 males and 3 females).

Classification of Drawing indices

The development of a rough, heuristic classification scheme that reflects the degree of sensitivity of the drawing indices to the anxiety producing characteristics of a laboratory situation is possible based on a careful analysis of past results. Roach (1981) suggested that the degree of sensitivity of drawing indices to task and situational sources of anxiety was apparent through inspections of the pattern of differences between drawings obtained in high and low stress conditions across all three drawings. He argued that drawing indices that differentiated high from low stress conditions on all three drawings were primarily sensitive to external sources of anxiety, and that drawing indices that differentiated the conditions for only the human figures were primarily sensitive to the task source of anxiety. Based upon this crude classification system, his first hypothesis stated that drawing indices considered to be primarily sensitive to external sources would differentiate experimenter present from absent conditions for all possible drawings. This hypothesis was strongly supported since thirteen of fifteen specific, directional predictions were confirmed. His second hypothesis stated that drawing indices that were considered to be primarily sensitive to the task source of anxiety would differentiate the experimenter present from absent condition on the human figure drawings only. This hypothesis received mild support since two of four predicted findings were obtained while the two vairiables did not differentiate conditions on the car drawing. This result is not of great concern since one would expect fluctuations in error variance to mask occasionally the effects of external sources when these effects are not strong. Finally, inspection of Roach's (1981) results indicate that all of the variables that were left unclassified failed to differentiate experimenter present from absent categories for all three drawings.

The heuristic classification scheme that is proposed for for the current study is based on the combined results of Handler and Reyher (1964) and Roach (1981). The major difference between the current scheme and the one used by Roach (1981) is that the current scheme is based only upon sensitivity to the anxiety producing characteristics of the situation rather than attempting to match indices with sources of anxiety. This modification was made because of the realization that drawing indices that differentiated high from low stress conditions for any of the drawings must be considered to be sensitive to the situational source. Thus, Roach (1981) was in error when he labeled his second group of indices "primarily sensitive to the intrapsychic source of anxiety", because the group was obviously sensitive to the situational source as well. Therefore, the current attempt represents an effort at conceptualizing the sources as independent of each other, and thus focusing on ordering the indices in terms of their sensitivity to one of the sources.

Based upon the combined results of Roach (1981) and Handler and Reyher (1964), Handler's (1967) indices may classified into the following categories:

1. The <u>Primarily Sensitive indices</u> are those indices that previously differentiated high from low stress

conditions on all three drawings. The indices that meet this critereon are shading, erasure, delineation line absence, and body simplification. Measures of hair shading and head simplification on the car drawing are not possible, but these indices are included in this category becauase of their similarity to shading and body simplification and because they differentiated conditions for both human figure drawings.

2. The <u>Moderately Sensitive indices</u> are those indices that differentiated high from low stress conditions on two of three figure drawings. indices that meet this critereon are reinforcement, emphasis line, light and heavy line, vertical imbalance, distortion, and omission. With the exception of omission, all of these indices' differentiated conditions on person drawings only. Omission is only tentatively placed in this category since it failed to differentiate experimenter present from experimenter absent conditions in the Roach (1981) study.

3. The <u>Mildly Sensitive indices</u> are those indices that differentiated stress conditions on one drawing. indices that meet this critereon are placement and line discontinuity. Both indices differentiated conditions for the first drawing only (Man) in the Handler and Reyher (1964) study, which suggests that they may reflect a combined effect of the novelty of the situation and the stress characteristics of the situation. None of the variables in this category differentiated experimenter present from absent conditions in the Roach (1981) study.

4. The <u>Insensitive indices</u> are those indices that have not differentiated high from low stress conditions in the past. indices that meet this critereon are length, head size, head:body ratio, and transparancy. Due to their similarity to length, both width, and area are included in this category for the current study.

The dimension that seems to underly this categorization system is the extent to which the drawing behavior that is measured by an index is crucial to meeting minimal task requirements. For example, size and placement cannot be omitted by subjects unless they refuse to do the task. In contrast erasures and shading are easily discarded in haste. This proposition is essentially a restatement of Handler and Reyher's (1964) hypothesis concerning decreases in the elaboration, articulation and detail of drawings when subjects finish quickly in order to leave a situation that induces anxiety.

# REFERENCES

Adler, P.T. Evaluation of the figure drawing technique: reliability, factoral structure, and diagnostic usefulness. Journal of Consulting and Clinical Psychology, 1970, 35, 52-57.

Attkinson, C. C., Waidler, V. J., Jeffrey, P. M., and Lambert, W. E. Interrater reliability of the Handler Draw-a-Person Scoring. Perceptual and Motor Skills, 1974, 38, 567-573.

Cassell, R. H., Johnson, A., and Burns, W. H. Examiner, ego-defense, and the H-T-P test. Journal of Clinical Psychology, 1958, 14, 157-160.

Handler, L. Anxiety indices in the Draw a Person test: A scoring manual. Journal of Projective Techniques and Personality Assessment, 1967, 31, 46-57.

Handler, L. and Reyher, J. The effcts of stress on the Draw a Person test. Journal of Consulting Psychology, 1964, 28, 259-264.

Handler. L. and Reyher, J. Figure drawing anxiety indices: A review of the literature. Journal of Projective Techniques and Personality Assessment, 1965, 29, 305-313.

Handler, L. and Reyher, J. The relationship between GSR and anxiety indices in projective drawings. Journal of Consulting Psychology, 1966, 30, 60-67.

Holtzman,.tt W. H. The examiner as a variable in the Draw a Person test. Journal of Consulting Psychology, 1952, 16, 145-148.

Lubin, B,Wallis, R. R., and Paine, C. Patterns of psychological test usage in the United States: 1935-1969. Professional Psychology, 1971, 2, 70-74.

Nichols, R. C. and Strumpher, D. J. A factor analysis of Draw a Person test scores. Journal of Consulting Psychology, 1962, 26, 156-161.

Roach, J.P. The effect of an experimenter's presence during administration of the Draw a Person test. Unpublished Master's thesis, Michigan State University, 1981.

Roback, H. B. Human figure drawings: their utility in the clinical psychologist's Armamentarium for personality assessment. Psychological Bulletin, 1968, 70, 1-19.

Silverstein, A. B. Anxiety and the quality of human figure drawings. American Journal of Mental Deficiency, 1966, 70, 607-608.

Star, A. and Marcuse, B. Reliability in the Draw a Person test. Journal of Projective Techniques, 1959, 23, 83-86.

Swenson, C. H. Jr. Empiracal evaluation of human figure drawings. Psychological Bulletin, 1957, 54, 431-466.

Swenson, C. H. Jr. Empiracal evaluation of human figure drawings. Psychological Bulletin, 1968, 70, 1-19.

# APPENDIX C

Appendix C describes the scales that were used in rating the car figure drawing. An attempt was made to develop rating scales for the car figure drawing that correspond as closely as possible to Handler's (1967) scales for rating the human figure. A close correspondence was obtained for ten of the drawing indices, while only a rough correspondence was achieved for the remaining six indices. The close correspondence was possible for shading, erasure, reinforcement, light and heavy line, transparancy, vertical imbalance, line discontinuity, length, width, and area, because these indices may be rated without consideration of the content of the drawing, i.e. human versus car. For example, the type of figure that is drawn is irrelevant when rating line discontinuities. The rater simply counts the number of breaks in the figure's exterior surface, and then assigns a rating. The issue of whether the figure is a car or a human is irrelevant to the completion of the rating.

In contrast, the development of corresponding scales for the car figure that measure omission, body simplification, delineation line absence, emphasis line, and distortion was a difficult task because the method used to rate each of these indices was dependent upon the nature of the drawing that was rated. For example, the delineation line absence index requires that raters count the number of delineation lines that were absent for each figure drawing. For human figures, "delineation lines" are lines that indicate: 1) sleeve cuffs or arm holes, 2) neckline, 3) beltline, and 4) pants cuffs or hemline of a skirt. "delineation lines" are lines that indicate: 1) the presence of a window, 2) the presence of a car door, 3) a connection between the tires and the body of the car, and 4) the presence of hubcaps. In this example, the "delineation lines are roughly related because they internally separate parts of the figure. However, the parts that they separate differ in terms of content, e.g. a human head does not correspond well with a car window.

A second problem in the construction of analogous scales occured for human figure drawings that require the figure to be separated into parts. Handler (1967) divides the body into the following areas: 1) head, (including facial features), 2) neck, 3) one or both hands, 4) one or both feet, 5) one or both legs, 6) one or both arms, and 7) the trunk. Roach (1981) used a system that divided the car into the following five distinctive areas: 1) the area forward of a vertical line drawn tangentially to the front edge of the front tire (typically this area includes the front bumper, head lights, grill, and part of the hood), 2) the area backward of the vertical line drawn tangentially to the back edge of the back tire (this area typically includes the back bumper, tail pipe, tail lights, and part of the car trunk), 3) the area above a horizontal line that is drawn between the point where the windshield meets the hood, and the point where the back window meets the trunk (this area typically includes all windows and the roof), 4) one or both tires, and 5) the remainder of the car. Roach (1981) noted that division of the car into smaller areas did not add additional precision to the measurement process.

Each scale is described below. Following the presentation of each scale, concerns about the corresppondence of the scale with the human figure scale will be discussed.

## I. Shading

Shading within any of the five previously defined car areas is scored. A design, emblem, ar any consistent pattern of lines (e.g. cross hatching) is scored as shading. Exhaust smoke is also scored as shading.

Score 0 when there is no shading present.

Score 1 when there is shading on one of the car areas.

Score 2 when there is shading on two of the car areas.

Score 3 when three or more car areas have been shaded.

Correspondence Concerns: Human figures may receive slightly higher scores because the human figures are separated into more areas (7) than the car figure (5). However, since a rating of three is assigned to three or more areas that are shaded, the differences between drawings in the number of areas that are counted are less likely to have an impact since a ceiling is imposed.

## II. Erasure

An erasure on any of the five previously defined car areas is scored.

Score 0 when there are no erasures on the car figure.

Score 1 when there is an erasure on one of the car areas.

Score 2 when there is an erasure on any two car areas.

Score 3 when three or more car areas have an erasure present.

Correspondence Concerns: As with shading, human figures may receive slightly higher ratings due to differences in the number of potential areas to rate. However the ceiling imposed by regrouping the the upper ranges into three and above should reduce differences.

## III. Reinforcement

Reinforcement consists of the retracing of lines, i.e. lines that have been redrawn or gone over. This does not include shading. Some subjects habitually draw using a sketchy line. If most of the drawing is sketchy, then reinforcement should not be scored. Also, lines that have been erased and redrawn should not be scored as reinforcement.

Score 0 when less than a quarter of the figure is reinforced.

Score 1 when approximately a quarter of the figure is reinforced.

Score 2 when approximately half of the figure is reinforced.

Score 3 when approximately three quarters or more of the figure is reinforced.

Correspondence Concerns: None

IV Light and Heavy Line

The quality of line of a drawing is scored according to the predominant (more than half of the figure) type of line that is used. In the current study, a concrete scale representing each point described by Handler (1967) was developed by drawing a series of seven lines that range form very light to very dark. This scale was then used by the raters to assign ratings by matching a representative portion of line in the figure with the line on the scale that matched it most closely. The same procedure was used to rate the human figures. A second difference from Handler's (1967) procedures for rating light and heavy line was the use of a monotonic scale in the current study instead of assigning higher values to deviations from the middle of the range. The current scale assigns higher values to increasingly darker lines.

Score 0 when the line quality is predominantly light-light.

Score 1 when the line quality is predominantly light.

Score 2 when the line quality is predominantly medium-light.

Score 3 when the line quality is predominantly medium.

Score 4 when the line quality is predominantly medium-heavy.

Score 5 when the line quality is predominantly heavy.

Score 6 when the line quality is predominantly heavy-heavy.

Correspondence Concerns: None.

## V. Placement

A transparent overlay that is divided into four equal sized quadrants is placed on top of the car figure drawing. The drawing receives points depending upon where the figure lies in relation to the vertical and horizontal axes. For the vertical axis, the car figure receives 0 points if the vertical axis passes entirely between both tires, 1 point if it touches either tire, 2 points if it falls outside of the tires but still passes through the car, and 3 points if it does not intersect the car. For the horizontal axis, the car figure receives 0 points if it passes between line A (the line that separates the window and roof from the car body) and line B (the line that runs along the bottom of the car), 1 point if it passes above line A or below line B while still intersecting part of the car, and 2 points if it does not intersect the car at any point. These points are summed for the two axes.

Score 0 for zero points.

Score 1 for one point.

Score 2 for two points.

Score 3 for three or more points.

Correspondence Concerns: The method for rating the placement for the car figure differs in several important ways from the scale used in rating the human figures. These differences may affect the correspondence between the scales. The length of the car figure tends to be stretched along the horizontal axis while the length of human figures tends to be stretched along the vertical axis. If placement deviations tend to occur more upon one axis than the other, then the deviations are more likely to be picked up by one scale than the other. For example, if placement deviations occur more frequently along the horizontal axis than the vertical axis, then the car scale will be less likely to pick up placement deviations because its length is stretched horizontally while the human figures width is extended horizontally. There is more space for a deviation from the vertical axis for the human figure, because the width of the figure takes up less space than the length of the car.

## VI. Omission

Score if there is an omission of any essential car area or when the figure is placed so that one or more essential car body areas has been cut off by the edge of the paper

(paper chopping). Essential car body areas are: 1) front and back bumpers, 2) headlights, 3) door handle, 4) door outline, 5) window outline, 6) one or both tires, and 7) one or both hubcaps.

Score 0 when there are no omissions.

Score 1 when a car body part is omitted.

Score 2 when two car body parts are omitted.

Score 3 when three or more car body parts are omitted.

<u>Correspondence</u> <u>Concerns</u>: The correspondence for omissions between car and human figures is rough. First, the number of "essential areas" for the car (7) is fewer than than for the human figures (13 if each favial feature is counted). Second, the ambiguous nature of the phrase "essential" leaves open to question whether each of the areas listed for the car is essential. An attempt was made to include only features of the car that occured in more than half of the figures drawn. However, that criterion may have been too lenient to qualify for the status of "essential". If non-essential areas of the car were included in the list, then the omission score for cars is likely to be higher than for the human figures.

## VII. Transparancy

Transparancy is scored when part of the car body that normally is not visable due to the structure of the automobile is visable in the drawing (e.g. when a tire shows through a fender).

Score 0 when there are no transparancies.

Score 1 when there is one transparancy.

Score 2 when there are two transparancies.

Score 3 when there are three or more transparancies.

<u>Correspondence Concerns</u>: None.

## VIII. Delineation Line Absence

This index refers to the absence of lines that separate the interior body space into parts. An extreme case is a car that is merely an outline or shell. THe car figure was scored for the presence of the following: 1) at least one vertical line that delineates a window, 2) at least two vertical lines that delineate a car door, 3) the presence of a circle that indicates a hubcap, and 4) the presence of lines that connect the tires to the car body.

Score 0 when no delineation lines are absent.

Score 1 when one of the delineation lines is absent.

Score 2 when two of the delineation lines are absent.

Score 3 when three or more delineation lines are absent.

<u>Correspondence Concerns</u>: The delineation lines for the car corresponds only roughly with the delineation lines for the human figures. Both sets separate the outside shell of the figure into different parts. However, the parts that they separate do not correspond across drawings. Consequently, it is difficult to determine whether each type of

delineation line considered in each drawing is important for producing a well drawn figure. A second problem is similar to the difficulty discussed for omission. If one of the delineation lines for the car occurs reletively infrequently in drawings, then the scotre is likely to be inflated.

IX. Vertical Imbalance

The angle formed by the bottom edge of a protractor which was parallel to the horizontal edge of the paper, and a line which passed along the bottom of the car was measured. The number of degrees that deviated from the 0 degree mark was counted.

Score 0 when the figure has less than a two degree deviation.

Score 1 when the figure has a deviation between 2 and 1/2 and 8 and 1/2 degrees.

Score 2 when the figure has a deviation between 9 and 17 degrees.

Score 3 when the figure has a deviation that is 17 and 1/2 degrees or greater.

Correspondence Concerns: None.

X. Emphasis Lines

Emphasis line refers to a line or series of lines that are drawn to give the car figure a three dimensional quality. An attempt to create a three dimensional quality for the car figure might take the form of a) a bumper that curves around the car, b) a display of the top of the hood, roof, or trunk, c) a display of two sides of the tire, and d) display of features inside the car such as a steering wheel or car seats that give the appearance of depth.

Score 0 when no emphasis lines are present.

Score 1 when one or two attempts are made to indicate depth.

Score 2 when three attempts are made to indicate depth.

Score 3 when four or more attempts are made to indicate depth.

Correspondence Concerns: The correspondence between human and car figures is likely to be quite rough for emphasis line. In addition to measuring attempts at indicating three dimensional space, the human figure scale also measures attempts to emphasize specific body areas. Since similar attempts rarely occur on the car figure, that aspect of the drawing was not included in the scale for car drawings. A second difference lies in the greater ease with which a subject may indicate depth for the car than for the human figure. Car figuures tend to be in the shape of rectangles which have smooth flat surfaces and sharp distinct angles. Relatively, little skill is required to transform a rectangle into a box. Most subjects are able to do it with ease as was demonstrated by their drawings of a rectangle and a box in the geometrical figure warm up task. In contrast, the shape of the human figure is irregular, rounded, and lacks sharp, distinct angles. Creating a sense of depth in the human figure is a more complex task; one that requires artistic skill and/or training. Thus due to the nature of the shapes of each figure, the car is more likely to be given a three dimensional quality.

XI. Line Discontinuity

Line discontinuity refers to the frequency of broken lines used in the drawing, and to the spaces left between various body parts. Carefull inspection is required, because body parts may appear to be unconnected when a connection is present. A line discontinuity is scored if it is possible to go from the outside of the car body wall to the inside space of the figure without crossing an exterior body line. Special care must be exercised when the drawing is completed with sketchy line. Close inspection is required to insure that a light line is not crossed accidentally.

Score 0 when there are three or less line discontinuities.

Score 1 when there are four or five line discontinuities.

Score 2 when there are six, seven, or eight line discontinuities.

Score 3 when there are nine or more line discontinuities.

Correspondence Concerns: None.

XII. Distortion

This index refers to either size (proportion) distortion, or to oddly shaped car body parts. Some of the features of the car that were considered when making the distortion rating were the following: 1) the size of the tires in relation to the car body, 2) the shape of the tires, 3) the length of the car in relation to the width (height), 4) the size of the window and roof area in relation to the remainder of the car body, and 5) the length of the front of the car in relation to the length of the back of the car.

Score 0 when the drawing is well proportioned, and when the body parts are not oddly shaped.

Score 1 when one or two body parts are out of proportion, but not to any great extent, or if one or two body parts are oddly shaped

Score 2 when approximately half of the drawing is out of proportion and/or oddly shaped.

Score 3 when more than half of the figure is out of proportion or oddly shaped.

Correspondence Concerns: For both the human and car figure drawings a well proportioned (0) or poorly proportioned (3) figure is easy to discern. The lack of correspondence is likely to occur for mildly (1) and moderately (2) disproportionate figures, because the greatest amount of judgement is required to make the distinction. It is impossible to know if the correspondence is close for the middle points because formal, explicit criterea for rating the proportionality of each figure is lacking. A second problem is similar to the difficulty described for rating emphasis line. Drawing the human figure proportionally is probably a more difficult task than drawing the car proportionally, because the human figure is composed of more complex shapes than the car. Thus, the distortion score for human figures may be inflated due to the difficulty of the task rather than in response to drawing the human anatomy.

## XIII. Body Simplification

This index represents an "accuracy" or "developmental" score that corresponds roughly to the construct measured by the Goodenough-Harris Draw a Man test. It should not be confused with distortion which is strictly a proportionality measure.

Score 0 when the car is: (a) well proportioned, (b) three dimensional, and (c) appropriately rounded.

Score 1 when the car is: (a) moderately well proportioned, (b) appropriately rounded, but (c) represented as a two dimensional figure.

Score 2 when the car is: (a) not well proportioned (b) not appropriately rounded, (c) has a semi-circle as a representation of the window and roof area, and/or (d) is still an approximation of a real car.

Score 3 when the shape of the car is primitive (rectangle, square, or circle), bizarre, or amorphous.

<u>Correspondence</u> <u>Concerns</u>: As with distortion, both a highly simplistic figure (3) and a highly sophisticated figure (0) are easy to rate for the human and car drawings. The correspondence for the mildly (1) and moderately (2) simplistic categories between car and human figures is more difficult to estimate, because of the lack of clarity concerning how many features represent a mild versus moderate distinction. Fortunately, the criterea for car and human figures is provided and incorporated into each scale. The criterea suggest that "accuracy" is roughly measured by each scale.

## XIV. Length

Car length was measured by placing an axis line along the bottom of the car figure. Perpendicular lines were extended from the axis line to the farthest points to the left and right of the car. The distance between these lines was measured to the nearest 1/16th of an inch.unlike

Handler's (1967) scale for the human figure, the measurements that were obtained were not reduced to a four point scale. Measurements were left in the original form (1/16th of an inch) for both human and car figures, because increased specificity of the data was prefered. A second difference from Handler's (1967) scales was that his decision to assign higher ratings to deviations from the middle range was abandoned. A monotonic scale in which larger numbers represent greater length was prefered.

Correspondence Concerns: The length of the car (horizontal axis) was compared to the length of the human figures (vertical axis). For both types of drawings, the length represented the largest measurement, and the width represented the smallest measurement. This type of comparison ignores the content of the drawing, but seems to be the most reasonable comparison available.

## XV. Width

The width of the figure is measured by placing a line tangential to the bottom of both tires, and constructing a perpendicular axis at the midpoint between the tires. A line that is perpendicular to the axis was drawn between the axis and the highest point on the roof of the car. The distance between the two parallel lines was then measured to the mearest 1/16th of an inch. As with length, the measurements were left in their original form, i.e. a monotonic scale measured in 1/16ths of an inch.

Correspondence Concerns: The width of the car (i.e.height) was compared with the width of the human figure. This comparison is only reasonable if the content of the drawing is considered unimportant. The wisdom of that approach seems somewhat dubious. However, better alternatives are not available.

## XVI. Area

The area is computed by multiplying the length of the car by the width of the car. The product represents the number of square inches used by an individual if a rectangle were drawn around the figure.

Correspondence Concerns: The area of the human and car figures correspond closely with one exception. The area measurement represents the area within the rectangle drawn around the figure, not the area within the exterior boundary of the figure. The boundaries of the car are likely to include more of the space within the rectangle than the boundaries of the human figure, particularly if the arms of the human figure are extended. If the actual area within body boundaries is desired, then the method described above will tend to overestimate the area within the human figures far more than for the car figure.

# APPENDIX D

Appendix D contains the debriefing questionnaire, the items that were coded from the open ended questions, and a description of the procedures that were used to construct the seven subscales that were used in the current study. These topics will be presented in order.

Debriefing questionnaire

INSTRUCTIONS: For this study, it is important that you answer each question with complete honesty so that we can learn what people experience while they draw. Please answer each question in the order given without reading ahead.

1. What was the purpose of this experiment? Please be as detailed as possible.

2. Please describe the thoughts and feelings that you experienced while drawing. Please be as detailed as possible.

3. Have you ever taken a drawing course or had drawing lessons?

   Yes (1)    No (2)

4. Do you like to draw?

   Often (1)    Sometimes (2)    Rarely (3)

5. Do you like to draw or "doodle" very often?

   Often (1)    Sometimes (2)    Rarely (3)

6. How often do you draw for more than 20 minutes at a time?

   Once a year (1)    Once a month (2)    Once a week (3)

7 How seriously did you take the instructions today?

Very (1) Moderately (2) Somewhat (3) Not at All (4)

8. How hard did you try to draw well?

Very (1) Moderately (2) Somewhat (3) Not at All (4)

9. Were you pleased with what you drew?

A) Man- Very (1) Moderately (2) Somewhat (3) Not at All (4)

B) Woman- Very (1) Moderately (2) Somewhat (3) Not at All (4)

C) Car- Very (1) Moderately (2) Somewhat (3) Not at All (4)

10. Did you feel nervous or anxious while you were drawing?

Very (1) Moderately (2) Somewhat (3) Not at All (4)

11. Were you distracted by anything while you were drawing?

Very (1) Moderately (2) Somewhat (3) Not at All (4)

12. Were you concerned that the experimenter would evaluate you negatively?

Very (1) Moderately (2) Somewhat (3) Not at All (4)

<u>Ten Coded Items from the Open-Ended Questions</u>

1. Subject suggested that the purpose of the study involved comparison of the drawings.

2. Subject suggested that the purpose of the study involved comparison of experimenter present and absen conditions.

3. Subject suggested that the purpose of the study involved assessment of how much time was spent drawing.

4. Subject suggested that the purpose of the study involved assessment of the amount of detail and/or effort put into the drawing.

5. Subject suggested that the purpose of the study involved assessment of the subjects personality.

6. Subject demeaned either his drawing or his drawing ability.

7. Subject expressed concern about being evaluated or

mentioned the experimenter's presence.

8. Subject mentions experiencing a negative affect such as anxiety, nervousness, irritation, or frustration.

9. Subject mentions experiencing a positive affect such as calmness or enjoyment.

10. Subject demeans the study.

## Procedures for Scale Formation

Seven scales were constructed from the open-ended and forced choice items. These were 1) artistic experience (AE), 2) effort (E), 3) self evaluation of drawing efforts (SE), 4) affect (A), 5) distraction (D), 6) evaluation apprehension (EA), and 7) understanding of the experimental purposes (UP). Forced choice items are labeled "F-n" with n equal to the number of the question that is listed above. Open-ended items are labeled "O-n" with n equal to the number of the item listed in the preceding section. For the open-ended items, a yes response was coded as a "1", and a "no" response was coded as a "4". These values were selected to correspond with the extreme values of the corresponding forced choice items. The formulas that were used to construct these scales were:

1. Artistic Experience = F3+F4+F5+F6
2. Effort = F7+F8
3. Self Evaluation = F9a+F9b+F9c+O6
4. Affect = F10-O8+O9
5. Distraction = F11
6. Evaluation Apprehension = F12-O7

7. Understands Purpose = O1+O3

All of the forced choice questions were used within one of the scales. Four of the open-ended items were not used; two of the items (O4 and O5) had very poor interrater reliability, and two of the items (O2 and O10) occured too infrequently (less than five percent in the total sample) to be useful.

# APPENDIX E

Multiple Groups Analysis
for the Man Drawing
Original Hypothesized Groupings

Factor intercorrelations and loading matrix
Lower Left Rectangle is item-total corrected for overlap.

| Index | Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 100 | 34 | 40 | 14 | 6 | 12 | 19 | 3 | -3 | 31 |
| Erasure | 2 | 34 | 100 | 17 | 13 | 5 | 12 | 11 | 0 | 2 | 31 |
| Del. Line Abs. | 3 | 40 | 17 | 100 | 27 | 23 | 31 | 17 | 23 | 0 | 20 |
| Body Simp. | 4 | 14 | 13 | 27 | 100 | 58 | 67 | 28 | 1 | 9 | 14 |
| Distortion | 5 | 6 | 5 | 23 | 58 | 100 | 46 | 33 | 22 | 16 | 7 |
| Emphasis Line | 6 | 12 | 12 | 31 | 67 | 46 | 100 | 33 | 6 | 16 | 9 |
| Reinforcement | 7 | 19 | 11 | 17 | 28 | 33 | 33 | 100 | 19 | 9 | 11 |
| Lt./Hv. Line | 8 | 3 | 0 | 23 | 1 | 22 | 6 | 19 | 100 | 9 | 3 |
| Vert. Imbal. | 9 | -3 | 2 | 0 | 9 | 16 | 16 | 9 | 9 | 100 | -7 |
| Omission | 10 | 31 | 31 | 20 | 14 | 7 | 9 | 11 | 3 | -7 | 100 |
| Placement | 11 | 19 | 24 | 26 | 7 | -10 | 18 | 12 | 5 | 2 | 7 |
| Line Disc. | 12 | 17 | 7 | 0 | -11 | -7 | -15 | 15 | -10 | -13 | -8 |
| Length | 13 | -10 | -12 | -21 | -27 | -15 | -37 | -27 | -10 | -9 | -13 |
| Width | 14 | -10 | -20 | -4 | -5 | 2 | -25 | -19 | -7 | -12 | 4 |
| Area | 15 | -10 | -16 | -14 | -17 | -7 | -35 | -26 | -10 | -13 | -1 |
| Transparancy | 16 | -11 | -2 | -7 | 6 | -9 | 6 | 2 | 8 | 5 | 1 |
| Groups-Variables | | | | | | | | | | | |
| High | 21 | 43 | 30 | 41 | 25 | 35 | 46 | 28 | 10 | 3 | 37 |
| Moderate | 22 | 21 | 19 | 35 | 54 | 46 | 40 | 38 | 20 | 14 | 8 |
| Mild | 23 | 27 | 23 | 20 | -2 | -12 | 2 | 20 | -4 | -8 | -1 |
| Insensitive | 24 | -14 | -16 | -15 | -14 | -10 | -30 | -24 | -6 | -10 | -3 |
| Present/Abs. | 31 | 20 | 30 | 9 | 9 | 24 | 1 | 9 | 7 | 3 | 8 |
| Time | 41 | -41 | -46 | -26 | -27 | -39 | -36 | -39 | -5 | -6 | -23 |

| Index- Number | | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 31 | 41 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 19 | 17 | -10 | -10 | -10 | -11 | 72 | 21 | 27 | -14 | 20 | -41 |
| Erasure | 2 | 24 | 7 | -12 | -20 | -16 | -2 | 62 | 19 | 23 | -16 | 30 | -46 |
| Del.Line | 3 | 26 | 0 | -21 | -4 | -14 | -7 | 70 | 35 | 20 | -15 | 9 | -26 |
| Body Simp | 4 | 7 | 11 | -27 | -5 | -17 | 6 | 59 | 54 | -2 | -14 | 9 | -27 |
| Distort | 5 | -10 | -7 | -15 | 2 | -7 | -9 | 35 | 68 | -12 | -10 | 24 | -39 |
| Emph Line | 6 | 18 | 15 | -37 | -25 | -35 | 6 | 46 | 64 | 2 | -30 | 1 | -36 |
| Reinforc | 7 | 12 | 15 | -27 | -19 | -26 | 2 | 28 | 63 | 20 | -24 | 9 | -39 |
| Lite Line | 8 | 5 | 10 | -10 | -7 | -10 | 8 | 10 | 49 | -4 | -6 | 7 | -5 |
| Vert Imb | 9 | 2 | 13 | -9 | -12 | -13 | 5 | 3 | 44 | -8 | -10 | 3 | -6 |
| Omission | 10 | 7 | -8 | -13 | 4 | -1 | 1 | 37 | 38 | -1 | -3 | 8 | -23 |
| Placement | 11 | 100 | -9 | -44 | -32 | -35 | -5 | 29 | 10 | 67 | -39 | -1 | -13 |
| Line Disc | 12 | -9 | 100 | 30 | 17 | 24 | 8 | 5 | -11 | 67 | 26 | -1 | -10 |
| Length | 13 | -44 | 30 | 100 | 72 | 86 | 8 | -27 | -34 | -10 | 89 | 9 | 17 |
| Width | 14 | -32 | 17 | 72 | 100 | 93 | -6 | -15 | -17 | -11 | 86 | 18 | 13 |
| Area | 15 | -35 | 24 | 86 | 93 | 100 | -3 | -22 | -29 | -8 | 92 | 15 | 15 |
| Transpar | 16 | -5 | 8 | 8 | -6 | -3 | 100 | -5 | 4 | 2 | 33 | -5 | 19 |
| Groups-Vars | | | | | | | | | | | | | |
| High | 21 | 29 | 5 | -27 | -15 | -22 | -5 | 100 | 49 | 25 | -23 | 26 | -54 |
| Moderate | 22 | 10 | -11 | -34 | -17 | -29 | 4 | 49 | 100 | -1 | -25 | 16 | -46 |
| Mild | 23 | -9 | -9 | -10 | -11 | -8 | 2 | 25 | -1 | 100 | -9 | -2 | -17 |
| Insens. | 24 | -39 | 26 | 77 | 72 | 84 | 0 | -23 | -25 | -9 | 100 | 12 | 22 |
| Pres/Abs | 31 | -1 | -1 | 9 | 18 | 15 | -5 | 26 | 16 | -2 | 12 | 100 | -19 |
| Time | 41 | -13 | -10 | 17 | 13 | 15 | 19 | -54 | -46 | -17 | 22 | -19 | 100 |

Multiple Groups Analysis
for the Woman Drawing
Original Hypothesized Groupings

Factor intercorrelations and loading matrix
Lower Left Rectangle is item-total corrected for overlap.

| Index | Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 100 | 13 | 41 | 11 | 22 | 26 | 25 | 19 | 1 | 31 |
| Erasure | 2 | 13 | 100 | 32 | 10 | 21 | 15 | 21 | -15 | 7 | 14 |
| Del. Line Abs. | 3 | 41 | 32 | 100 | 31 | 31 | 32 | 20 | 5 | 0 | 18 |
| Body Simp. | 4 | 11 | 10 | 31 | 100 | 62 | 55 | 31 | 1 | 7 | 21 |
| Distortion | 5 | 22 | 21 | 31 | 62 | 100 | 45 | 35 | 8 | 13 | 8 |
| Emphasis Line | 6 | 26 | 15 | 32 | 55 | 45 | 100 | 34 | 14 | -4 | 18 |
| Reinforcement | 7 | 25 | 21 | 20 | 31 | 35 | 34 | 100 | 13 | 5 | 6 |
| Lt./Hv. Line | 8 | 19 | -15 | 5 | 1 | 8 | 14 | 13 | 100 | 4 | 0 |
| Vert. Imbal. | 9 | 1 | 7 | 0 | 7 | 13 | -4 | 5 | 4 | 100 | 9 |
| Omission | 10 | 31 | 14 | 18 | 21 | 8 | 18 | 6 | 0 | 9 | 100 |
| Placement | 11 | 11 | 17 | 14 | 7 | 2 | 21 | 13 | 14 | 0 | 0 |
| Line Disc. | 12 | 19 | -1 | -5 | -22 | -3 | 3 | 8 | -14 | -4 | 0 |
| Length | 13 | -6 | -23 | -23 | -35 | -24 | -31 | -25 | -16 | 6 | -13 |
| Width | 14 | -6 | -19 | -16 | -22 | -9 | -26 | -11 | -22 | -8 | -16 |
| Area | 15 | -5 | -20 | -17 | -29 | -16 | -28 | -14 | -23 | -3 | -11 |
| Transparancy | 16 | -11 | 8 | 0 | 11 | 2 | -2 | -14 | -19 | -1 | 4 |
| Groups-Variables | | | | | | | | | | | |
| High | 21 | 31 | 25 | 54 | 24 | 53 | 49 | 37 | 4 | 6 | 32 |
| Moderate | 22 | 39 | 20 | 33 | 56 | 41 | 40 | 34 | 13 | 9 | 14 |
| Mild | 23 | 21 | 12 | 7 | -10 | -1 | 17 | 15 | 0 | -3 | 0 |
| Insensitive | 24 | -9 | -18 | -19 | -25 | -16 | -29 | -22 | -27 | -2 | -12 |
| Present/Abs. | 31 | 23 | 18 | 12 | 4 | 21 | 17 | 13 | 14 | 5 | 3 |
| Time | 41 | -39 | -42 | -29 | -16 | -29 | -37 | -43 | -13 | -7 | -26 |

| Index- | Number | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 31 | 41 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 11 | 19 | -6 | -6 | -5 | -11 | 64 | 39 | 21 | -9 | 23 | -39 |
| Erasure | 2 | 17 | -1 | -23 | -19 | -20 | 8 | 60 | 20 | 12 | -18 | 18 | -42 |
| Del Line | 3 | 14 | -5 | -23 | -16 | -17 | 0 | 78 | 33 | 7 | -19 | 12 | -29 |
| Body Simp | 4 | 7 | -22 | -35 | -22 | -29 | 11 | 58 | 56 | -10 | -25 | 4 | -16 |
| Distort | 5 | 2 | -3 | -24 | -9 | -16 | 2 | 53 | 66 | -1 | -16 | 21 | -29 |
| Emph Line | 6 | 21 | 3 | -31 | -26 | -28 | -2 | 49 | 65 | 17 | -29 | 17 | -37 |
| Reinforc | 7 | 13 | 8 | -25 | -11 | -14 | -14 | 37 | 61 | 15 | -22 | 13 | -43 |
| Lite Line | 8 | 14 | -14 | -16 | -22 | -23 | -19 | 4 | 43 | 0 | -27 | 14 | -13 |
| Vert Imb. | 9 | 0 | -4 | 6 | -8 | -3 | -1 | 6 | 40 | -3 | -2 | 5 | -7 |
| Omission | 10 | 0 | 0 | -13 | -16 | -11 | 4 | 32 | 44 | 0 | -12 | 3 | -26 |
| Placement | 11 | 100 | -4 | -43 | -49 | -45 | -6 | 19 | 16 | 69 | -48 | 3 | -22 |
| Line Disc | 12 | -4 | 100 | 28 | 21 | 19 | -11 | -3 | -3 | 69 | 19. | 4 | -20 |
| Length | 13 | -43 | 28 | 100 | 77 | 87 | -5 | -34 | -32 | -11 | 86 | 12 | 20 |
| Width | 14 | -49 | 21 | 77 | 100 | 95 | -4 | -24 | -29 | -20 | 90 | 13 | 24 |
| Area | 15 | -45 | 19 | 87 | 95 | 100 | -3 | -27 | -30 | -19 | 93 | 13 | 25 |
| Transpar | 16 | -6 | -11 | -5 | -4 | -3 | 100 | 3 | -9 | -13 | 29 | -12 | 1 |
| Groups-Vars | | | | | | | | | | | | | |
| High | 21 | 19 | -3 | -34 | -24 | -27 | 3 | 100 | 57 | 11 | -27 | 22 | -49 |
| Moderate | 22 | 16 | -3 | -32 | -29 | -30 | -9 | 57 | 100 | 9 | -34 | 23 | -49 |
| Mild | 23 | -4 | -4 | -11 | -20 | -19 | -13 | 11 | 9 | 100 | -21 | 5 | -31 |
| Insens. | 24 | -48 | 19 | 73 | 79 | 86 | -4 | -27 | -34 | -21 | 100 | 8 | 24 |
| Pres/Abs | 31 | 3 | 4 | 12 | 13 | 13 | -12 | 22 | 23 | 5 | 8 | 100 | -25 |
| Time | 41 | -22 | -20 | 20 | 24 | 25 | 1 | -49 | -49 | -31 | 24 | -25 | 100 |

Multiple Groups Analysis
for the Car Drawing
Original Hypothesized Groupings

Factor intercorrelations and loading matrix
Lower Left Rectangle is item-total corrected for overlap.

| Index | Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 100 | 15 | 26 | 29 | 21 | 15 | 36 | -3 | 5 | 29 |
| Erasure | 2 | 15 | 100 | 12 | 22 | 22 | 14 | 17 | -7 | 8 | 16 |
| Del. Line Abs. | 3 | 26 | 12 | 100 | 21 | 27 | 26 | 15 | -10 | -13 | 58 |
| Body Simp. | 4 | 29 | 22 | 21 | 100 | 75 | 59 | 41 | 9 | -7 | 34 |
| Distortion | 5 | 21 | 22 | 27 | 75 | 100 | 39 | 37 | 0 | 2 | 41 |
| Emphasis Line | 6 | 15 | 14 | 26 | 59 | 39 | 100 | 22 | -2 | -39 | 31 |
| Reinforcement | 7 | 36 | 17 | 15 | 41 | 37 | 22 | 100 | 7 | -15 | 16 |
| Lt/Hv Line | 8 | -3 | -7 | -10 | 9 | 0 | -2 | 7 | 100 | -14 | -6 |
| Vert. Imbal. | 9 | 5 | 8 | -13 | -7 | 2 | -39 | -15 | -14 | 100 | 4 |
| Omission | 10 | 29 | 16 | 58 | 34 | 41 | 31 | 16 | -6 | 4 | 100 |
| Placement | 11 | 0 | 5 | 10 | -6 | 3 | 0 | 2 | 8 | 3 | 6 |
| Line Disc. | 12 | 16 | 15 | 6 | -23 | -6 | -17 | 2 | -33 | 16 | -3 |
| Length | 13 | -11 | -14 | -20 | -12 | -10 | -16 | -10 | -13 | 3 | -10 |
| Width | 14 | -19 | -6 | -25 | -16 | -9 | -36 | -2 | -8 | 27 | -20 |
| Area | 15 | -19 | -13 | -22 | -12 | -8 | -23 | -3 | -7 | 16 | -13 |
| Transparancy | 16 | -1 | 4 | 6 | 3 | 0 | 2 | -3 | -14 | 23 | 8 |
| Groups-Variables | | | | | | | | | | | |
| High | 21 | 34 | 23 | 28 | 36 | 57 | 45 | 43 | -4 | -3 | 54 |
| Moderate | 22 | 36 | 24 | 35 | 72 | 53 | 20 | 27 | -5 | -21 | 36 |
| Mild | 23 | 12 | 14 | 11 | -20 | -2 | -12 | 3 | -17 | 13 | 2 |
| Insensitive | 24 | -16 | -9 | -20 | -12 | -8 | -24 | -6 | -14 | 23 | -12 |
| Present/Abs. | 31 | 21 | 35 | 19 | 25 | 22 | 17 | 8 | -10 | -10 | 16 |
| Time | 41 | -35 | -39 | -25 | -33 | -41 | -29 | -43 | -2 | -5 | -36 |

| Index- | Number | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 | 31 | 41 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 0 | 16 | -11 | -19 | -19 | -1 | 67 | 36 | 12 | -16 | 21 | -35 |
| Erasure | 2 | 5 | 15 | -14 | -6 | -13 | 4 | 58 | 24 | 14 | -9 | 35 | -39 |
| Del Line | 3 | 10 | 6 | -20 | -25 | -22 | 6 | 62 | 35 | 11 | -20 | 19 | -25 |
| Body Simp | 4 | -6 | -23 | -12 | -16 | -12 | 3 | 67 | 72 | -20 | -12 | 25 | -33 |
| Distort | 5 | 3 | -6 | -10 | -9 | -8 | 0 | 57 | 75 | -2 | -8 | 22 | -41 |
| Emph Line | 6 | 0 | -17 | -16 | -36 | -23 | 2 | 45 | 52 | -12 | -24 | 17 | -29 |
| Reinforc | 7 | 2 | 2 | -10 | -2 | -3 | -3 | 43 | 58 | 3 | -6 | 8 | -43 |
| Lite Line | 8 | 8 | -33 | -13 | -8 | -7 | -14 | -4 | 29 | -17 | -14 | -10 | -2 |
| Vert Imb | 9 | 3 | 16 | 3 | 27 | 16 | 23 | -3 | 13 | 13 | 23 | -10 | -5 |
| Omissions | 10 | 6 | -3 | -10 | -20 | -13 | 8 | 54 | 64 | 2 | -12 | 16 | -36 |
| Placement | 11 | 100 | 6 | -49 | -31 | -33 | 11 | 4 | 8 | 73 | -34 | 10 | -2 |
| Line Disc | 12 | 6 | 100 | 11 | 13 | 9 | 0 | 6 | -15 | 73 | 11 | 13 | 2 |
| Length | 13 | -49 | 11 | 100 | 70 | 83 | -3 | -22 | -19 | -26 | 82 | -9 | 30 |
| Width | 14 | -31 | 13 | 70 | 100 | 94 | 12 | -26 | -17 | -12 | 91 | -9 | 14 |
| Area | 15 | -33 | 9 | 83 | 94 | 100 | 9 | -26 | -13 | -16 | 94 | -9 | 21 |
| Transpar | 16 | 11 | 0 | -3 | 12 | 9 | 100 | 5 | 6 | 7 | 39 | -6 | -7 |
| Groups-Vars | | | | | | | | | | | | | |
| High | 21 | 4 | 6 | -22 | -26 | -26 | 5 | 100 | 66 | 6 | -23 | 39 | -52 |
| Moderate | 22 | 8 | -15 | -19 | -17 | -13 | 6 | 66 | 100 | -4 | -14 | 15 | -54 |
| Mild | 23 | 6 | 6 | -26 | -12 | -16 | 7 | 6 | -4 | 100 | -16 | 15 | 0 |
| Insens. | 24 | -34 | 11 | 65 | 81 | 87 | 7 | -23 | -14 | -16 | 100 | -11 | 19 |
| Pres/Abs | 31 | 10 | 13 | -9 | -9 | -9 | -6 | 39 | 15 | 15 | -11 | 100 | -16 |
| Time | 41 | -2 | 2 | 30 | 14 | 21 | -7 | -52 | -54 | 0 | 19 | -16 | 100 |

# APPENDIX F

Multiple Groups Analysis
for the Man Drawing
Post Hoc Groupings

Factor intercorrelations and loading matrix.
Lower Left Rectangle is item-total corrected for overlap.

| Index -Number | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 10 | 11 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 100 | 34 | 40 | 14 | 6 | 12 | 19 | 31 | -19 | -10 | -10 | -10 |
| Erasure | 2 | 34 | 100 | 17 | 13 | 5 | 12 | 11 | 31 | -24 | -12 | -20 | -16 |
| Del Line | 3 | 40 | 17 | 100 | 27 | 23 | 31 | 17 | 20 | -26 | -21 | -4 | -14 |
| Body Simp | 4 | 14 | 13 | 27 | 100 | 58 | 67 | 28 | 14 | -7 | -27 | -5 | -17 |
| Distort | 5 | 6 | 5 | 23 | 58 | 100 | 46 | 33 | 7 | 10 | -15 | 2 | -7 |
| Emph Line | 6 | 12 | 12 | 31 | 67 | 46 | 100 | 33 | 9 | -18 | -37 | -25 | -35 |
| Reinforc | 7 | 19 | 11 | 17 | 28 | 33 | 33 | 100 | 11 | -12 | -27 | -19 | -26 |
| Omission | 10 | 31 | 31 | 20 | 14 | 7 | 9 | 11 | 100 | -7 | -13 | 4 | -1 |
| Placement | 11 | -19 | -24 | -26 | -7 | 10 | -18 | -12 | -7 | 100 | 44 | 32 | 35 |
| Length | 13 | -10 | -12 | -21 | -27 | -15 | -37 | -27 | -13 | 44 | 100 | 72 | 86 |
| Width | 14 | -10 | -20 | -4 | -5 | 2 | -25 | -19 | 4 | 32 | 72 | 100 | 93 |
| Area | 15 | -10 | -16 | -14 | -17 | -7 | -35 | -26 | -1 | 35 | 86 | 93 | 100 |
| Lt/Hv Line | 8 | 3 | 0 | 23 | 1 | 22 | 6 | 19 | 3 | -5 | -10 | -7 | -10 |
| Vert Imbal | 9 | -3 | 2 | 0 | 9 | 16 | 16 | 9 | -7 | -2 | -9 | -12 | -13 |
| Line Disc | 12 | 17 | 7 | 0 | -11 | -7 | -15 | 15 | -8 | 9 | 30 | 17 | 24 |
| Transpar | 16 | -11 | -2 | -7 | 6 | -9 | 6 | 2 | 1 | 5 | 8 | -6 | -3 |
| Groups -Vars | | | | | | | | | | | | | |
| High | 21 | 37 | 29 | 42 | 55 | 43 | 52 | 36 | 29 | -22 | -35 | -16 | -27 |
| Mild | 22 | -15 | -21 | -19 | -17 | -3 | -34 | -25 | -5 | 39 | 81 | 78 | 88 |
| Insens. | 23 | 2 | 3 | 8 | 2 | 11 | 7 | 22 | -5 | 4 | 10 | -4 | -1 |
| Pres/Abs | 31 | 20 | 30 | 9 | 9 | 24 | 1 | 9 | 8 | 1 | 9 | 18 | 15 |
| Time | 41 | -41 | -46 | -26 | -27 | -39 | -36 | -39 | -23 | 13 | 17 | 13 | 15 |

| Index | -Number | 8 | 9 | 12 | 16 | 21 | 22 | 23 | 31 | 41 |
|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 3 | -3 | 17 | -11 | 55 | -15 | 2 | 20 | -41 |
| Erasure | 2 | 0 | 2 | 7 | -2 | 48 | -21 | 3 | 30 | -46 |
| Del. Line Abs. | 3 | 23 | 0 | 0 | -7 | 59 | -19 | 8 | 9 | -26 |
| Body Simp. | 4 | 1 | 9 | -11 | 6 | 70 | -17 | 2 | 9 | -27 |
| Distortion | 5 | 22 | 16 | -7 | -9 | 60 | -3 | 11 | 24 | -39 |
| Emph. Line | 6 | 6 | 16 | -15 | 6 | 67 | -34 | 7 | 1 | -36 |
| Reinforcement | 7 | 19 | 9 | 15 | 2 | 55 | -25 | 22 | 9 | -39 |
| Omission | 10 | 3 | -7 | -8 | 1 | 48 | -5 | -5 | 8 | -23 |
| Placement | 11 | -5 | -2 | 9 | 5 | -22 | 63 | 4 | 1 | 13 |
| Length | 13 | -10 | -9 | 30 | 8 | -35 | 90 | 10 | 9 | 17 |
| Width | 14 | -7 | -12 | 17 | -6 | -16 | 89 | -4 | 18 | 13 |
| Area | 15 | -10 | -13 | 24 | -3 | -27 | 94 | -1 | 15 | 15 |
| Lt./Hv. Line | 8 | 100 | 9 | -10 | 8 | 17 | -9 | 53 | 7 | -5 |
| Vert. Imbal. | 9 | 9 | 100 | -13 | 5 | 9 | -11 | 49 | 3 | -6 |
| Line Disc. | 12 | -10 | -13 | 100 | 8 | 0 | 24 | 42 | -1 | -10 |
| Transparancy | 16 | 8 | 5 | 8 | 100 | -3 | 1 | 60 | -5 | 19 |
| Groups and Vars | | | | | | | | | | |
| High | 21 | 17 | 9 | 0 | -3 | 100 | -30 | 11 | 24 | -60 |
| Mild | 22 | -9 | -11 | 24 | 1 | -30 | 100 | 3 | 13 | 17 |
| Insensitive | 23 | 4 | 0 | -8 | 13 | 11 | 3 | 100 | 2 | -1 |
| Present/Abs. | 31 | 7 | 3 | -1 | -5 | 24 | 13 | 2 | 100 | -19 |
| Time | 41 | -5 | -6 | -10 | 19 | -60 | 17 | -1 | -19 | 100 |

Multiple Groups Analysis
for the Woman Drawing
Post Hoc Groupings

Factor intercorrelations and loading matrix.
Lower Left Rectangle is item-total corrected for overlap.

| Index -Number | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 10 | 11 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 100 | 13 | 41 | 11 | 22 | 26 | 25 | 31 | -11 | -6 | -6 | -5 |
| Erasure | 2 | 13 | 100 | 32 | 10 | 21 | 15 | 21 | 14 | -17 | -23 | -19 | -20 |
| Del Line | 3 | 41 | 32 | 100 | 31 | 31 | 32 | 20 | 18 | -14 | -23 | -16 | -17 |
| Body Simp. | 4 | 11 | 10 | 31 | 100 | 62 | 55 | 31 | 21 | -7 | -35 | -22 | -29 |
| Distortion | 5 | 22 | 21 | 31 | 62 | 100 | 45 | 35 | 8 | -2 | -24 | -9 | -16 |
| Emph. Line | 6 | 26 | 15 | 32 | 55 | 45 | 100 | 34 | 18 | -21 | -31 | -26 | -28 |
| Rerinforc. | 7 | 25 | 21 | 20 | 31 | 35 | 34 | 100 | 6 | -13 | -25 | -11 | -14 |
| Omission | 10 | 31 | 14 | 18 | 21 | 8 | 18 | 6 | 100 | 0 | -13 | -16 | -11 |
| Placement | 11 | -11 | -17 | -14 | -7 | -2 | -21 | -13 | 0 | 100 | 43 | 49 | 45 |
| Length | 13 | -6 | -23 | -23 | -35 | -24 | -31 | -25 | -13 | 43 | 100 | 77 | 87 |
| Width | 14 | -6 | -19 | -16 | -22 | -9 | -26 | -11 | -16 | 49 | 77 | 100 | 95 |
| Area | 15 | -5 | -20 | -17 | -29 | -16 | -28 | -14 | -11 | 45 | 87 | 95 | 100 |
| Lt/Hv Line | 8 | 19 | -15 | 5 | 1 | 8 | 14 | 13 | 0 | -14 | -16 | -22 | -23 |
| Vert. Imb. | 9 | 1 | 7 | 0 | 7 | 13 | -4 | 5 | 9 | 0 | 6 | -8 | -3 |
| Line Disc | 12 | 19 | -1 | -5 | -22 | -3 | 3 | 8 | 0 | 4 | 28 | 21 | 19 |
| Transpar | 16 | -11 | 8 | 0 | 11 | 2 | -2 | -14 | 4 | 6 | -5 | -4 | -3 |
| Groups -Vars | | | | | | | | | | | | | |
| High | 21 | 40 | 29 | 49 | 53 | 54 | 54 | 40 | 27 | -18 | -38 | -26 | -29 |
| Mild | 22 | -8 | -23 | -20 | -27 | -15 | -31 | -18 | -12 | 48 | 79 | 87 | 90 |
| Insens. | 23 | 16 | -1 | 0 | -1 | 11 | 6 | 7 | 8 | -2 | 7 | -7 | -6 |
| Pres/Abs | 31 | 23 | 18 | 12 | 4 | 21 | 17 | 13 | 3 | -3 | 12 | 13 | 13 |
| Time | 41 | -39 | -42 | -29 | -16 | -29 | -37 | -43 | -26 | 22 | 20 | 24 | 25 |

| Index | -Number | 8 | 9 | 12 | 16 | 21 | 22 | 23 | 31 | 41 |
|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 19 | 1 | 19 | -11 | 57 | -8 | 16 | 23 | -39 |
| Erasure | 2 | -15 | 7 | -1 | 8 | 47 | -23 | -1 | 18 | -42 |
| Del. Line Abs. | 3 | 5 | 0 | -5 | 0 | 64 | -20 | 0 | 12 | -29 |
| Body Simp. | 4 | 1 | 7 | -22 | 11 | 68 | -27 | -1 | 4 | -16 |
| Distortion | 5 | 8 | 13 | -3 | 2 | 68 | -15 | 11 | 21 | -29 |
| Emphasis Line | 6 | 14 | -4 | 3 | -2 | 68 | -31 | 6 | 17 | -37 |
| Reinforcement | 7 | 13 | 5 | 8 | -14 | 57 | -18 | 7 | 13 | -43 |
| Omission | 10 | 0 | 9 | 0 | 4 | 46 | -12 | 8 | 3 | -26 |
| Placement | 11 | -14 | 0 | 4 | 6 | -18 | 69 | -2 | -3 | 22 |
| Length | 13 | -16 | 6 | 28 | -5 | -38 | 89 | 7 | 12 | 20 |
| Width | 14 | -22 | -8 | 21 | -4 | -26 | 93 | -7 | 13 | 24 |
| Area | 15 | -23 | -3 | 19 | -3 | -29 | 95 | -6 | 13 | 25 |
| Lt./Hv. Line | 8 | 100 | 4 | -14 | -19 | 9 | -22 | 41 | 14 | -13 |
| Vert. Imbal. | 9 | 4 | 100 | -4 | -1 | 8 | -2 | 56 | 5 | -7 |
| Line Disc. | 12 | -14 | -4 | 100 | -11 | 0 | 21 | 40 | 4 | -20 |
| Transparancy | 16 | -19 | -1 | -11 | 100 | 0 | -2 | 39 | -12 | 1 |
| Groups and Vars | | | | | | | | | | |
| High | 21 | 9 | 8 | 0 | 0 | 100 | -32 | 10 | 23 | -55 |
| Mild | 22 | -22 | -2 | 21 | -2 | -32 | 100 | -2 | 10 | 27 |
| Insensitive | 23 | -17 | -1 | -18 | -19 | 10 | -2 | 100 | 7 | -23 |
| Present/Abs. | 31 | 14 | 5 | 4 | -12 | 23 | 10 | 7 | 100 | -25 |
| Time | 41 | -13 | -7 | -20 | 1 | -55 | 27 | -23 | -25 | 100 |

Multiple Groups Analysis
for the Car Drawing
Post Hoc Groupings

Factor intercorrelations and loading matrix.
Lower Left Rectangle is item-total corrected for overlap.

| Index -Number | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 10 | 11 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | 100. | 15 | 26 | 29 | 21 | 15 | 36 | 29 | 0 | -11 | -19 | -19 |
| Erasure | 2 | 15 | 100 | 12 | 22 | 22 | 14 | 17 | 16 | -5 | -14 | -6 | -13 |
| Del. Line | 3 | 26 | 12 | 100 | 21 | 27 | 26 | 15 | 58 | -10 | -20 | -25 | -22 |
| Body Simp. | 4 | 29 | 22 | 21 | 100 | 75 | 59 | 41 | 34 | 6 | -12 | -16 | -12 |
| Distort | 5 | 21 | 22 | 27 | 75 | 100 | 39 | 37 | 41 | -3 | -10 | -9 | -8 |
| Emph. Line | 6 | 15 | 14 | 26 | 59 | 39 | 100 | 22 | 31 | 0 | -16 | -36 | -23 |
| Reinforc. | 7 | 36 | 17 | 15 | 41 | 37 | 22 | 100 | 16 | -2 | -10 | -2 | -3 |
| Omission | 10 | 29 | 16 | 58 | 34 | 41 | 31 | 16 | 100 | -6 | -10 | -20 | -13 |
| Placement | 11 | 0 | -5 | -10 | 6 | -3 | 0 | -2 | -6 | 100 | 49 | 31 | 33 |
| Length | 13 | -11 | -14 | -20 | -12 | -10 | -16 | -10 | -10 | 49 | 100 | 70 | 83 |
| Width | 14 | -19 | -6 | -25 | -16 | -9 | -36 | -2 | -20 | 31 | 70 | 100 | 94 |
| Area | 15 | -19 | -13 | -22 | -12 | -8 | -23 | -3 | -13 | 33 | 83 | 94 | 100 |
| Lt/Hv Line | 8 | -3 | -7 | -10 | 9 | 0 | -2 | 7 | -6 | -8 | -13 | -8 | -7 |
| Vert Imb. | 9 | 5 | 8 | -13 | -7 | 2 | -39 | -15 | 4 | -3 | 3 | 27 | 16 |
| Line Disc | 12 | 16 | 15 | 6 | -23 | -6 | -17 | 2 | -3 | -6 | 11 | 13 | 9 |
| Transpar | 16 | -1 | 4 | 6 | 3 | 0 | 2 | -3 | 8 | -11 | -3 | 12 | 9 |
| Groups -Vars | | | | | | | | | | | | | |
| High | 21 | 38 | 26 | 42 | 67 | 62 | 47 | 42 | 52 | -4 | -21 | -27 | -23 |
| Mild | 22 | -15 | -11 | -23 | -10 | -9 | -22 | -5 | -15 | 40 | 81 | 78 | 86 |
| Insens. | 23 | 9 | 11 | -6 | -10 | -2 | -30 | -5 | 1 | -15 | -1 | 23 | 14 |
| Pres/Abs | 31 | 21 | 35 | 19 | 25 | 22 | 17 | 8 | 16 | -10 | -9 | -9 | -9 |
| Time | 41 | -35 | -39 | -25 | -33 | -41 | -29 | -43 | -36 | 2 | 30 | 14 | 21 |

| Index | -Number | 8 | 9 | 12 | 16 | 21 | 22 | 23 | 31 | 41 |
|---|---|---|---|---|---|---|---|---|---|---|
| Shading | 1 | -3 | 5 | 16 | -1 | 55 | -15 | 9 | 21 | -35 |
| Erasure | 2 | -7 | 8 | 15 | 4 | 44 | -11 | 11 | 35 | -39 |
| Del. Line Abs. | 3 | -10 | -13 | 6 | 6 | 58 | -23 | -6 | 19 | -25 |
| Body Simp. | 4 | 9 | -7 | -23 | 3 | 77 | -10 | -10 | 25 | -33 |
| Distortion | 5 | 0 | 2 | -6 | 0 | 73 | -9 | -2 | 22 | -41 |
| Emphasis Line | 6 | -2 | -39 | -17 | 2 | 62 | -22 | -30 | 17 | -29 |
| Reinforcement | 7 | 7 | -15 | 2 | -3 | 58 | -5 | -5 | 8 | -43 |
| Omission | 10 | -6 | 4 | -3 | 8 | 66 | -15 | 1 | 16 | -36 |
| Placement | 11 | -8 | -3 | -6 | -11 | -4 | 64 | -15 | -10 | 2 |
| Length | 13 | -13 | 3 | 11 | -3 | -21 | 90 | -1 | -9 | 30 |
| Width | 14 | -8 | 27 | 13 | 12 | -27 | 88 | 23 | -9 | 14 |
| Area | 15 | -7 | 16 | 9 | 9 | -23 | 93 | 14 | -9 | 21 |
| Lt. Hv. Ling | 8 | 100 | -14 | -33 | -14 | -2 | -11 | 20 | -10 | -2 |
| Vert. Imbal. | 9 | -14 | 100 | 16 | 23 | -11 | 13 | 66 | -10 | -5 |
| Line Disc. | 12 | -33 | 16 | 100 | 0 | -2 | 8 | 44 | 13 | 2 |
| Transparancy | 16 | -14 | 23 | 0 | 100 | 4 | 2 | 58 | -6 | -7 |
| Groups and Vars | | | | | | | | | | |
| High | 21 | -2 | -11 | -2 | 4 | 100 | -22 | -6 | 33 | -57 |
| Mild | 22 | -11 | 13 | 8 | 2 | -22 | 100 | 7 | -11 | 20 |
| Insensitive | 23 | -32 | 17 | -10 | 6 | -6 | 7 | 100 | -7 | -7 |
| Present/Abs | 31 | -10 | -10 | 13 | -6 | 33 | -11 | -7 | 100 | -16 |
| Time | 41 | 14 | 21 | -2 | -5 | 2 | -7 | -7 | -16 | 100 |

# APPENDIX G

************************************************************
THE FIRST SET OF FREQUENCIES ARE FOR PRESENT CASES ONLY EACH
VARIABLE REPRESENTS THE AVERAGE OF SINGLE RATINGS PROVIDED
BY TWO DIFFERENT RATERS EXCEPT FOR TIME VARIABLES
************************************************************

Q29 SHADING MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 44 | 44 | 1.0 | 8 | 15 | 70 | 2.5 | 3 | 6 | 87 |
| .5 | 6 | 11 | 56 | 2.0 | 6 | 11 | 81 | 3.0 | 7 | 13 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .954 | STD ERR | .152 | MEDIAN | .500 |
| MODE | 0 | STD DEV | 1.117 | VARIANCE | 1.248 |
| KURTOSIS | -.909 | SKEWNESS | .795 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 51.500 |
| C.V. PCT | 117.128 | .95 C.I. | .649 | TO | 1.259 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q31 SHADING WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 44 | 44 | 1.5 | 5 | 9 | 78 | 3.0 | 5 | 9 | 100 |
| .5 | 8 | 15 | 59 | 2.0 | 5 | 9 | 87 | | | | |
| 1.0 | 5 | 9 | 69 | 2.5 | 2 | 4 | 91 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .861 | STD ERR | .140 | MEDIAN | .438 |
| MODE | 0 | STD DEV | 1.025 | VARIANCE | 1.051 |
| KURTOSIS | -.468 | SKEWNESS | .922 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 46.500 |
| C.V. PCT | 119.059 | .95 C.I. | .581 | TO | 1.141 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q33 SHADING CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 20 | 37 | 37 | 1.5 | 5 | 9 | 69 | 3.0 | 11 | 20 | 100 |
| .5 | 9 | 17 | 54 | 2.0 | 4 | 7 | 76 | | | | |
| 1.0 | 3 | 6 | 59 | 2.5 | 2 | 4 | 80 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.130 | STD ERR | .162 | MEDIAN | .639 |
| MODE | 0 | STD DEV | 1.190 | VARIANCE | 1.417 |
| KURTOSIS | -1.304 | SKEWNESS | .568 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 61.000 |
| C.V. PCT | 105.372 | .95 C.I. | .805 | TO | 1.455 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q73 ERASURE MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 27 | 50 | 50 | 1.5 | 5 | 9 | 80 | 3.0 | 6 | 11 | 100 |
| .5 | 3 | 6 | 56 | 2.0 | 4 | 7 | 87 | | | | |
| 1.0 | 8 | 15 | 70 | 2.5 | 1 | 2 | 89 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .843 | STD ERR | .142 | MEDIAN | .250 |
| MODE | 0 | STD DEV | 1.045 | VARIANCE | 1.093 |
| KURTOSIS | -.358 | SKEWNESS | .964 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 45.500 |
| C.V. PCT | 124.059 | .95 C.I. | .557 | TO | 1.128 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q75 ERASURE WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 21 | 39 | 39 | 1.5 | 3 | 6 | 63 | 3.0 | 10 | 19 | 100 |
| .5 | 4 | 7 | 46 | 2.0 | 6 | 11 | 74 | | | | |
| 1.0 | 6 | 11 | 57 | 2.5 | 4 | 7 | 81 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.194 | STD ERR | .163 | MEDIAN | .917 |
| MODE | 0 | STD DEV | 1.195 | VARIANCE | 1.428 |
| KURTOSIS | -1.478 | SKEWNESS | .388 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 64.500 |
| C.V. PCT | 100.062 | .95 C.I. | .868 | TO | 1.521 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q77 ERASURE CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 29 | 54 | 54 | 1.5 | 3 | 6 | 81 | 3.0 | 4 | 7 | 100 |
| .5 | 8 | 15 | 69 | 2.0 | 4 | 7 | 89 | | | | |
| 1.0 | 4 | 7 | 76 | 2.5 | 2 | 4 | 93 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .694 | STD ERR | .134 | MEDIAN | .216 |
| MODE | 0 | STD DEV | .983 | VARIANCE | .966 |
| KURTOSIS | .307 | SKEWNESS | 1.271 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 37.500 |
| C.V. PCT | 141.545 | .95 C.I. | .426 | TO | .963 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q49 DELINEATION LINE ABSENCE MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 25 | 46 | 46 | 1.5 | 1 | 2 | 78 | 3.0 | 10 | 19 | 100 |
| .5 | 4 | 7 | 54 | 2.0 | 1 | 2 | 80 | | | | |
| 1.0 | 12 | 22 | 76 | 2.5 | 1 | 2 | 81 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .926 | STD ERR | .155 | MEDIAN | .500 |
| MODE | 0 | STD DEV | 1.143 | VARIANCE | 1.306 |
| KURTOSIS | -.561 | SKEWNESS | .977 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 50.000 |
| C.V. PCT | 123.410 | .95 C.I. | .614 | TO | 1.238 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q51 DELINEATION LINE ABSENCE WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 21 | 39 | 39 | 1.0 | 9 | 17 | 59 | 2.0 | 5 | 9 | 80 |
| .5 | 2 | 4 | 43 | 1.5 | 6 | 11 | 70 | 3.0 | 11 | 20 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.148 | STD ERR | .157 | MEDIAN | .972 |
| MODE | 0 | STD DEV | 1.156 | VARIANCE | 1.336 |
| KURTOSIS | -1.178 | SKEWNESS | .518 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 62.000 |
| C.V. PCT | 100.676 | .95 C.I. | .833 | TO | 1.464 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q53 DELINEATION LINE ABSENCE CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 21 | 39 | 39 | 1.0 | 16 | 30 | 78 | 2.0 | 4 | 7 | 93 |
| .5 | 5 | 9 | 48 | 1.5 | 4 | 7 | 85 | 3.0 | 4 | 7 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .824 | STD ERR | .121 | MEDIAN | .781 |
| MODE | 0 | STD DEV | .886 | VARIANCE | .785 |
| KURTOSIS | .527 | SKEWNESS | 1.047 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 44.500 |
| C.V. PCT | 107.481 | .95 C.I. | .582 | TO | 1.066 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q91 BODY SIMPLIFICATION MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 2 | 1.5 | 5 | 9 | 24 | 3.0 | 7 | 13 | 100 |
| .5 | 1 | 2 | 4 | 2.0 | 26 | 48 | 72 | | | | |
| 1.0 | 6 | 11 | 15 | 2.5 | 8 | 15 | 87 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.981 | STD ERR | .089 | MEDIAN | 2.019 |
| MODE | 2.000 | STD DEV | .651 | VARIANCE | .424 |
| KURTOSIS | .836 | SKEWNESS | -.621 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 107.000 |
| C.V. PCT | 32.869 | .95 C.I. | 1.804 | TO | 2.159 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q93 BODY SIMPLIFICATION WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 2 | 1.5 | 8 | 15 | 28 | 3.0 | 10 | 19 | 100 |
| .5 | 3 | 6 | 7 | 2.0 | 21 | 39 | 67 | | | | |
| 1.0 | 3 | 6 | 13 | 2.5 | 8 | 15 | 81 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 2.009 | STD ERR | .098 | MEDIAN | 2.036 |
| MODE | 2.000 | STD DEV | .724 | VARIANCE | .523 |
| KURTOSIS | .339 | SKEWNESS | -.615 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 108.500 |
| C.V. PCT | 36.010 | .95 C.I. | 1.812 | TO | 2.207 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q95 BODY SIMPLIFICATION CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 4 | 7 | 7 | 1.5 | 14 | 26 | 63 | 3.0 | 7 | 13 | 100 |
| .5 | 5 | 9 | 17 | 2.0 | 9 | 17 | 80 | | | | |
| 1.0 | 11 | 20 | 37 | 2.5 | 4 | 7 | 87 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.546 | STD ERR | .116 | MEDIAN | 1.500 |
| MODE | 1.500 | STD DEV | .854 | VARIANCE | .729 |
| KURTOSIS | -.601 | SKEWNESS | .110 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 83.500 |
| C.V. PCT | 55.215 | .95 C.I. | 1.313 | TO | 1.779 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q85 DISTORTION MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .5 | 3 | 6 | 6 | 1.5 | 4 | 7 | 19 | 2.5 | 13 | 24 | 63 |
| 1.0 | 3 | 6 | 11 | 2.0 | 11 | 20 | 39 | 3.0 | 20 | 37 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 2.315 | STD ERR | .100 | MEDIAN | 2.481 |
| MODE | 3.000 | STD DEV | .735 | VARIANCE | .541 |
| KURTOSIS | .280 | SKEWNESS | -1.023 | RANGE | 2.500 |
| MINIMUM | .500 | MAXIMUM | 3.000 | SUM | 125.000 |
| C.V. PCT | 31.761 | .95 C.I. | 2.114 | TO | 2.515 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q87 DISTORTION WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .5 | 2 | 4 | 4 | 1.5 | 2 | 4 | 19 | 2.5 | 12 | 22 | 63 |
| 1.0 | 6 | 11 | 15 | 2.0 | 12 | 22 | 41 | 3.0 | 20 | 37 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 2.296 | STD ERR | .101 | MEDIAN | 2.458 |
| MODE | 3.000 | STD DEV | .743 | VARIANCE | .552 |
| KURTOSIS | -.156 | SKEWNESS | -.903 | RANGE | 2.500 |
| MINIMUM | .500 | MAXIMUM | 3.000 | SUM | 124.000 |
| C.V. PCT | 32.357 | .95 C.I. | 2.093 | TO | 2.499 |
| VALID CASES | 54 | MISSING CASES | .0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q89 DISTORTION CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 6 | 11 | 11 | 2.0 | 26 | 48 | 70 | 3.0 | 11 | 20 | 100 |
| 1.5 | 6 | 11 | 22 | 2.5 | 5 | 9 | 80 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 2.083 | STD ERR | .082 | MEDIAN | 2.038 |
| MODE | 2.000 | STD DEV | .605 | VARIANCE | .366 |
| KURTOSIS | -.509 | SKEWNESS | .000 | RANGE | 2.000 |
| MINIMUM | 1.000 | MAXIMUM | 3.000 | SUM | 112.500 |
| C.V. PCT | 29.022 | .95 C.I. | 1.918 | TO | 2.248 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q67 EMPHASIS LINE MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 33 | 61 | 61 | 1.0 | 6 | 11 | 85 | 3.0 | 5 | 9 | 100 |
| .5 | 7 | 13 | 74 | 1.5 | 3 | 6 | 91 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .537 | STD ERR | .124 | MEDIAN | .159 |
| MODE | 0 | STD DEV | .910 | VARIANCE | .829 |
| KURTOSIS | 2.655 | SKEWNESS | 1.892 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 29.000 |
| C.V. PCT | 169.519 | .95 C.I. | .289 | TO | .786 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q69 EMPHASIS LINE-WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 16 | 30 | 30 | 1.5 | 4 | 7 | 93 | 3.0 | 1 | 2 | 100 |
| .5 | 6 | 11 | 41 | 2.0 | 2 | 4 | 96 | | | | |
| 1.0 | 24 | 44 | 85 | 2.5 | 1 | 2 | 98 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .787 | STD ERR | .092 | MEDIAN | .854 |
| MODE | 1.000 | STD DEV | .677 | VARIANCE | .459 |
| KURTOSIS | 1.263 | SKEWNESS | .831 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 42.500 |
| C.V. PCT | 86.036 | .95 C.I. | .602 | TO | .972 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q71 EMPHASIS LINE CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 27 | 50 | 50 | 1.0 | 3 | 6 | 78 | 2.0 | 3 | 6 | 89 |
| .5 | 12 | 22 | 72 | 1.5 | 3 | 6 | 83 | 3.0 | 6 | 11 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .694 | STD ERR | .136 | MEDIAN | .250 |
| MODE | 0 | STD DEV | .997 | VARIANCE | .994 |
| KURTOSIS | .793 | SKEWNESS | 1.437 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 37.500 |
| C.V. PCT | 143.603 | .95 C.I. | .422 | TO | .967 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q79 REINFORCEMENT MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 31 | 57 | 57 | 1.5 | 5 | 9 | 87 | 3.0 | 3 | 6 | 100 |
| .5 | 7 | 13 | 70 | 2.0 | 3 | 6 | 93 | | | | |
| 1.0 | 4 | 7 | 78 | 2.5 | 1 | 2 | 94 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .602 | STD ERR | .122 | MEDIAN | .185 |
| MODE | 0 | STD DEV | .897 | VARIANCE | .805 |
| KURTOSIS | 1.092 | SKEWNESS | 1.451 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 32.500 |
| C.V. PCT | 149.120 | .95 C.I. | .357 | TO | .847 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q81 REINFORCEMENT WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 34 | 63 | 63 | 1.5 | 5 | 9 | 87 | 3.0 | 4 | 7 | 100 |
| .5 | 6 | 11 | 74 | 2.0 | 2 | 4 | 91 | | | | |
| 1.0 | 2 | 4 | 78 | 2.5 | 1 | 2 | 93 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .574 | STD ERR | .128 | MEDIAN | .147 |
| MODE | 0 | STD DEV | .944 | VARIANCE | .891 |
| KURTOSIS | 1.298 | SKEWNESS | 1.579 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 31.000 |
| C.V. PCT | 164.393 | .95 C.I. | .316 | TO | .832 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q83 REINFORCEMENT CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 32 | 59 | 59 | 1.5 | 4 | 7 | 80 | 3.0 | 5 | 9 | 100 |
| .5 | 4 | 7 | 67 | 2.0 | 2 | 4 | 83 | | | | |
| 1.0 | 3 | 6 | 72 | 2.5 | 4 | 7 | 91 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .741 | STD ERR | .146 | MEDIAN | .172 |
| MODE | 0 | STD DEV | 1.076 | VARIANCE | 1.158 |
| KURTOSIS | -.268 | SKEWNESS | 1.135 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 40.000 |
| C.V. PCT | 145.270 | .95 C.I. | .447 | TO | 1.034 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q97B LIGHT-HEAVY LINE-MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 2 | 4 | 4 | 3.5 | 6 | 11 | 26 | 5.0 | 2 | 4 | 69 |
| 2.5 | 2 | 4 | 7 | 4.0 | 15 | 28 | 54 | 5.5 | 9 | 17 | 85 |
| 3.0 | 4 | 7 | 15 | 4.5 | 6 | 11 | 65 | 6.0 | 8 | 15 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 4.380 | STD ERR | .152 | MEDIAN | 4.183 |
| MODE | 4.000 | STD DEV | 1.116 | VARIANCE | 1.245 |
| KURTOSIS | -.762 | SKEWNESS | -.119 | RANGE | 4.000 |
| MINIMUM | 2.000 | MAXIMUM | 6.000 | SUM | 236.500 |
| C.V. PCT | 25.474 | .95 C.I. | 4.075 | TO | 4.684 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q99B LIGHT-HEAVY LINE-WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | 1 | 2 | 2 | 3.5 | 6 | 11 | 31 | 5.5 | 5 | 9 | 91 |
| 2.0 | 2 | 4 | 6 | 4.0 | 9 | 17 | 48 | 6.0 | 4 | 7 | 98 |
| 2.5 | 3 | 6 | 11 | 4.5 | 6 | 11 | 59 | 7.0 | 1 | 2 | 100 |
| 3.0 | 5 | 9 | 20 | 5.0 | 12 | 22 | 81 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 4.269 | STD ERR | .160 | MEDIAN | 4.333 |
| MODE | 5.000 | STD DEV | 1.176 | VARIANCE | 1.384 |
| KURTOSIS | -.280 | SKEWNESS | -.229 | RANGE | 5.500 |
| MINIMUM | 1.500 | MAXIMUM | 7.000 | SUM | 230.500 |
| C.V. PCT | 27.562 | .95 C.I. | 3.947 | TO | 4.590 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q101B LIGHT-HEAVY LINE-CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | 1 | 2 | 2 | 3.5 | 6 | 11 | 31 | 5.5 | 7 | 13 | 94 |
| 2.0 | 4 | 7 | 9 | 4.0 | 10 | 19 | 50 | 6.0 | 3 | 6 | 100 |
| 2.5 | 1 | 2 | 11 | 4.5 | 6 | 11 | 61 | | | | |
| 3.0 | 5 | 9 | 20 | 5.0 | 11 | 20 | 81 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 4.194 | STD ERR | .156 | MEDIAN | 4.250 |
| MODE | 5.000 | STD DEV | 1.143 | VARIANCE | 1.306 |
| KURTOSIS | -.424 | SKEWNESS | -.501 | RANGE | 4.500 |
| MINIMUM | 1.500 | MAXIMUM | 6.000 | SUM | 226.500 |
| C.V. PCT | 27.244 | .95 C.I. | 3.883 | TO | 4.506 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q97 LIGHT-HEAVY LINE-MAN-HANDLER'S CODING

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 13 | 24 | 24 | 1.0 | 8 | 15 | 61 | 2.0 | 10 | 19 | 100 |
| .5 | 12 | 22 | 46 | 1.5 | 11 | 20 | 81 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .935 | STD ERR | .100 | MEDIAN | .875 |
| MODE | 0 | STD DEV | .734 | VARIANCE | .538 |
| KURTOSIS | -1.401 | SKEWNESS | .121 | RANGE | 2.000 |
| MINIMUM | 0 | MAXIMUM | 2.000 | SUM | 50.500 |
| C.V. PCT | 78.445 | .95 C.I. | .735 | TO | 1.135 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q99 LIGHT-HEAVY LINE-WOMAN-HANDLER'S CODING

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8 | 15 | 15 | 1.5 | 8 | 15 | 85 | 3.0 | 1 | 2 | 100 |
| .5 | 12 | 22 | 37 | 2.0 | 6 | 11 | 96 | | | | |
| 1.0 | 18 | 33 | 70 | 2.5 | 1 | 2 | 98 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .991 | STD ERR | .094 | MEDIAN | .944 |
| MODE | 1.000 | STD DEV | .690 | VARIANCE | .476 |
| KURTOSIS | .236 | SKEWNESS | .571 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 53.500 |
| C.V. PCT | 69.662 | .95 C.I. | .802 | TO | 1.179 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q101 LIGHT-HEAVY LINE-CAR-HANDLER'S CODING

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 10 | 19 | 19 | 1.0 | 16 | 30 | 69 | 2.0 | 7 | 13 | 98 |
| .5 | 11 | 20 | 39 | 1.5 | 9 | 17 | 85 | 2.5 | 1 | 2 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .954 | STD ERR | .092 | MEDIAN | .938 |
| MODE | 1.000 | STD DEV | .675 | VARIANCE | .455 |
| KURTOSIS | -.768 | SKEWNESS | .222 | RANGE | 2.500 |
| MINIMUM | 0 | MAXIMUM | 2.500 | SUM | 51.500 |
| C.V. PCT | 70.756 | .95 C.I. | .770 | TO | 1.138 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q35 VERTICAL IMBALANCE MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 44 | 44 | 1.0 | 21 | 39 | 93 | 2.0 | 2 | 4 | 100 |
| .5 | 5 | 9 | 54 | 1.5 | 2 | 4 | 96 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .565 | STD ERR | .078 | MEDIAN | .550 |
| MODE | 0 | STD DEV | .575 | VARIANCE | .331 |
| KURTOSIS | -.624 | SKEWNESS | .510 | RANGE | 2.000 |
| MINIMUM | 0 | MAXIMUM | 2.000 | SUM | 30.500 |
| C.V. PCT | 101.803 | .95 C.I. | .408 | TO | .722 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q37 VERTICAL IMBALANCE WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 19 | 35 | 35 | 1.0 | 22 | 41 | 93 | 2.0 | 3 | 6 | 100 |
| .5 | 9 | 17 | 52 | 1.5 | 1 | 2 | 94 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .630 | STD ERR | .077 | MEDIAN | .694 |
| MODE | 1.000 | STD DEV | .568 | VARIANCE | .323 |
| KURTOSIS | -.220 | SKEWNESS | .507 | RANGE | 2.000 |
| MINIMUM | 0 | MAXIMUM | 2.000 | SUM | 34.000 |
| C.V. PCT | 90.195 | .95 C.I. | .475 | TO | .785 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q39 VERTICAL IMBALANCE CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 36 | 67 | 67 | 1.0 | 12 | 22 | 94 | 3.0 | 1 | 2 | 100 |
| .5 | 3 | 6 | 72 | 2.0 | 2 | 4 | 98 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .380 | STD ERR | .088 | MEDIAN | .125 |
| MODE | 0 | STD DEV | .644 | VARIANCE | .414 |
| KURTOSIS | 4.628 | SKEWNESS | 2.012 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 20.500 |
| C.V. PCT | 169.587 | .95 C.I. | .204 | TO | .555 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q23 OMISSION MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 16 | 30 | 30 | 1.5 | 4 | 7 | 81 | 3.0 | 6 | 11 | 100 |
| .5 | 6 | 11 | 41 | 2.0 | 3 | 6 | 87 | | | | |
| 1.0 | 18 | 33 | 74 | 2.5 | 1 | 2 | 89 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .991 | STD ERR | .129 | MEDIAN | .889 |
| MODE | 1.000 | STD DEV | .949 | VARIANCE | .901 |
| KURTOSIS | .002 | SKEWNESS | .904 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 53.500 |
| C.V. PCT | 95.800 | .95 C.I. | .732 | TO | 1.250 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q25 OMISSION WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 19 | 35 | 35 | 1.0 | 16 | 30 | 78 | 2.0 | 3 | 6 | 91 |
| .5 | 7 | 13 | 48 | 1.5 | 4 | 7 | 85 | 3.0 | 5 | 9 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .861 | STD ERR | .124 | MEDIAN | .781 |
| MODE | 0 | STD DEV | .908 | VARIANCE | .825 |
| KURTOSIS | .580 | SKEWNESS | 1.098 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 46.500 |
| C.V. PCT | 105.459 | .95 C.I. | .613 | TO | 1.109 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q27 OMISSION CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 11 | 20 | 20 | 1.5 | 3 | 6 | 52 | 3.0 | 14 | 26 | 100 |
| .5 | 4 | 7 | 28 | 2.0 | 10 | 19 | 70 | | | | |
| 1.0 | 10 | 19 | 46 | 2.5 | 2 | 4 | 74 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.546 | STD ERR | .153 | MEDIAN | 1.583 |
| MODE | 3.000 | STD DEV | 1.125 | VARIANCE | 1.267 |
| KURTOSIS | -1.424 | SKEWNESS | -.017 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 83.500 |
| C.V. PCT | 72.785 | .95 C.I. | 1.239 | TO | 1.853 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q1 PLACEMENT MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 26 | 48 | 48 | 1.0 | 16 | 30 | 89 | 3.0 | 1 | 2 | 100 |
| .5 | 6 | 11 | 59 | 2.0 | 5 | 9 | 98 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .593 | STD ERR | .098 | MEDIAN | .333 |
| MODE | 0 | STD DEV | .721 | VARIANCE | .520 |
| KURTOSIS | 1.273 | SKEWNESS | 1.233 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 32.000 |
| C.V. PCT | 121.637 | .95 C.I. | .396 | TO | .789 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q3 PLACEMENT WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 44 | 44 | 1.0 | 10 | 19 | 72 | 2.0 | 9 | 17 | 94 |
| .5 | 5 | 9 | 54 | 1.5 | 3 | 6 | 78 | 3.0 | 3 | 6 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .815 | STD ERR | .126 | MEDIAN | .550 |
| MODE | 0 | STD DEV | .923 | VARIANCE | .852 |
| KURTOSIS | -.340 | SKEWNESS | .852 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 44.000 |
| C.V. PCT | 113.272 | .95 C.I. | .563 | TO | 1.067 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q5 PLACEMENT CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 13 | 24 | 24 | 1.5 | 1 | 2 | 54 | 3.0 | 8 | 15 | 100 |
| .5 | 2 | 4 | 28 | 2.0 | 15 | 28 | 81 | | | | |
| 1.0 | 13 | 24 | 52 | 2.5 | 2 | 4 | 85 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.380 | STD ERR | .142 | MEDIAN | 1.212 |
| MODE | 2.000 | STD DEV | 1.041 | VARIANCE | 1.084 |
| KURTOSIS | -1.217 | SKEWNESS | .073 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 74.500 |
| C.V. PCT | 75.476 | .95 C.I. | 1.095 | TO | 1.664 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q61 LINE DISCONTINUITY MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 23 | 43 | 43 | 1.5 | 4 | 7 | 69 | 3.0 | 8 | 15 | 100 |
| .5 | 4 | 7 | 50 | 2.0 | 6 | 11 | 80 | | | | |
| 1.0 | 6 | 11 | 61 | 2.5 | 3 | 6 | 85 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.065 | STD ERR | .156 | MEDIAN | .750 |
| MODE | 0 | STD DEV | 1.145 | VARIANCE | 1.312 |
| KURTOSIS | -1.217 | SKEWNESS | .569 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 57.500 |
| C.V. PCT | 107.560 | .95 C.I. | .752 | TO | 1.377 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q63 LINE DISCONTINUITY WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 21 | 39 | 39 | 1.5 | 4 | 7 | 54 | 3.0 | 16 | 30 | 100 |
| .5 | 3 | 6 | 44 | 2.0 | 6 | 11 | 65 | | | | |
| 1.0 | 1 | 2 | 46 | 2.5 | 3 | 6 | 70 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.407 | STD ERR | .178 | MEDIAN | 1.500 |
| MODE | 0 | STD DEV | 1.307 | VARIANCE | 1.708 |
| KURTOSIS | -1.784 | SKEWNESS | .078 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 76.000 |
| C.V. PCT | 92.866 | .95 C.I. | 1.051 | TO | 1.764 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q65 LINE DISCONTINUITY CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 17 | 31 | 31 | 1.5 | 5 | 9 | 76 | 3.0 | 8 | 15 | 100 |
| .5 | 9 | 17 | 48 | 2.0 | 2 | 4 | 80 | | | | |
| 1.0 | 10 | 19 | 67 | 2.5 | 3 | 6 | 85 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.065 | STD ERR | .146 | MEDIAN | .800 |
| MODE | 0 | STD DEV | 1.073 | VARIANCE | 1.151 |
| KURTOSIS | -.796 | SKEWNESS | .741 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 57.500 |
| C.V. PCT | 100.771 | .95 C.I. | .772 | TO | 1.358 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q55 TRANSPARANCY MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 46 | 85 | 85 | 1.0 | 3 | 6 | 94 | 2.0 | 1 | 2 | 98 |
| .5 | 2 | 4 | 89 | 1.5 | 1 | 2 | 96 | 2.5 | 1 | 2 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .185 | STD ERR | .070 | MEDIAN | .043 |
| MODE | 0 | STD DEV | .517 | VARIANCE | .267 |
| KURTOSIS | 9.853 | SKEWNESS | 3.132 | RANGE | 2.500 |
| MINIMUM | 0 | MAXIMUM | 2.500 | SUM | 10.000 |
| C.V. PCT | 279.001 | .95 C.I. | .044 | TO | .326 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q57 TRANSPARANCY WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 47 | 87 | 87 | 1.0 | 2 | 4 | 94 | | | | |
| .5 | 2 | 4 | 91 | 2.0 | 3 | 6 | 100 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .167 | STD ERR | .067 | MEDIAN | .037 |
| MODE | 0 | STD DEV | .495 | VARIANCE | .245 |
| KURTOSIS | 9.086 | SKEWNESS | 3.145 | RANGE | 2.000 |
| MINIMUM | 0 | MAXIMUM | 2.000 | SUM | 9.000 |
| C.V. PCT | 297.156 | .95 C.I. | .031 | TO | .302 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q59 TRANSPARANCY-CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 45 | 83 | 83 | 1.0 | 5 | 9 | 98 | | | | |
| .5 | 3 | 6 | 89 | 1.5 | 1 | 2 | 100 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .148 | STD ERR | .049 | MEDIAN | .050 |
| MODE | 0 | STD DEV | .359 | VARIANCE | .129 |
| KURTOSIS | 4.542 | SKEWNESS | 2.357 | RANGE | 1.500 |
| MINIMUM | 0 | MAXIMUM | 1.500 | SUM | 8.000 |
| C.V. PCT | 242.043 | .95 C.I. | .050 | TO | .246 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q41 HAIRSHADING MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 9 | 17 | 17 | 1.5 | 13 | 24 | 63 | 2.5 | 1 | 2 | 89 |
| 1.0 | 12 | 22 | 39 | 2.0 | 13 | 24 | 87 | 3.0 | 6 | 11 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.444 | STD ERR | .119 | MEDIAN | 1.481 |
| MODE | 1.500 | STD DEV | .878 | VARIANCE | .770 |
| KURTOSIS | -.427 | SKEWNESS | -.063 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 78.000 |
| C.V. PCT | 60.767 | .95 C.I. | 1.205 | TO | 1.684 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q43 HAIRSHADING WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 12 | 22 | 22 | 1.5 | 4 | 7 | 43 | 3.0 | 6 | 11 | 100 |
| .5 | 1 | 2 | 24 | 2.0 | 18 | 33 | 76 | | | | |
| 1.0 | 6 | 11 | 35 | 2.5 | 7 | 13 | 89 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.556 | STD ERR | .138 | MEDIAN | 1.861 |
| MODE | 2.000 | STD DEV | 1.013 | VARIANCE | 1.025 |
| KURTOSIS | -1.077 | SKEWNESS | -.412 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 84.000 |
| C.V. PCT | 65.089 | .95 C.I. | 1.279 | TO | 1.832 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q45 HEAD SIMPLIFICATION MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8 | 15 | 15 | 1.5 | 4 | 7 | 54 | 3.0 | 13 | 24 | 100 |
| .5 | 11 | 20 | 35 | 2.0 | 9 | 17 | 70 | | | | |
| 1.0 | 6 | 11 | 46 | 2.5 | 3 | 6 | 76 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.519 | STD ERR | .151 | MEDIAN | 1.500 |
| MODE | 3.000 | STD DEV | 1.107 | VARIANCE | 1.226 |
| KURTOSIS | -1.481 | SKEWNESS | .081 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 82.000 |
| C.V. PCT | 72.918 | .95 C.I. | 1.216 | TO | 1.821 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q47 HEAD SIMPLIFICATION WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 11 | 20 | 20 | 1.5 | 6 | 11 | 63 | 3.0 | 10 | 19 | 100 |
| .5 | 3 | 6 | 26 | 2.0 | 9 | 17 | 80 | | | | |
| 1.0 | 14 | 26 | 52 | 2.5 | 1 | 2 | 81 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.389 | STD ERR | .140 | MEDIAN | 1.214 |
| MODE | 1.000 | STD DEV | 1.031 | VARIANCE | 1.063 |
| KURTOSIS | -1.059 | SKEWNESS | .230 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 75.000 |
| C.V. PCT | 74.230 | .95 C.I. | 1.107 | TO | 1.670 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

```
*************************************************************
FREQUENCY TABLES HAVE BEEN OMITTED, BECAUSE THE FOLLOWING
     VARIABLES ARE CONTINUOUS. PRESENT CASES ONLY
*************************************************************
W7          LENGTH MAN
MEAN          84.861     STD ERR        4.647     MEDIAN       77.750
MODE          42.000     STD DEV       34.151     VARIANCE   1166.325
KURTOSIS       -.640     SKEWNESS        .503     RANGE       134.000
MINIMUM       32.000     MAXIMUM      166.000     SUM        4582.500
C.V. PCT      40.244     .95 C.I.      75.540          TO     94.183
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W9          LENGTH WOMAN
MEAN          86.333     STD ERR        4.748     MEDIAN       83.750
MODE          70.000     STD DEV       34.890     VARIANCE   1217.330
KURTOSIS       -.429     SKEWNESS        .533     RANGE       134.500
MINIMUM       28.500     MAXIMUM      163.000     SUM        4662.000
C.V. PCT      40.413     .95 C.I.      76.810          TO     95.857
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W11         LENGTH CAR
MEAN          78.898     STD ERR        3.905     MEDIAN       70.250
MODE          63.000     STD DEV       28.698     VARIANCE    823.570
KURTOSIS        .351     SKEWNESS        .765     RANGE       125.500
MINIMUM       36.500     MAXIMUM      162.000     SUM        4260.500
C.V. PCT      36.373     .95 C.I.      71.065          TO     86.731
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W13         WIDTH MAN
MEAN          40.815     STD ERR        2.498     MEDIAN       40.000
MODE          26.000     STD DEV       18.360     VARIANCE    337.088
KURTOSIS       2.942     SKEWNESS       1.320     RANGE        95.500
MINIMUM       16.000     MAXIMUM      111.500     SUM        2204.000
C.V. PCT      44.984     .95 C.I.      35.804          TO     45.826
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W15         WIDTH WOMAN
MEAN          34.565     STD ERR        2.034     MEDIAN       32.250
MODE          16.000     STD DEV       14.949     VARIANCE    223.482
KURTOSIS       7.259     SKEWNESS       1.939     RANGE        88.000
MINIMUM       15.500     MAXIMUM      103.500     SUM        1866.500
C.V. PCT      43.250     .95 C.I.      30.484          TO     38.645
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W17         WIDTH CAR
MEAN          29.463     STD ERR        2.019     MEDIAN       25.250
MODE          21.000     STD DEV       14.839     VARIANCE    220.206
KURTOSIS       3.424     SKEWNESS       1.689     RANGE        72.000
MINIMUM        9.500     MAXIMUM       81.500     SUM        1591.000
C.V. PCT      50.366     .95 C.I.      25.413          TO     33.513
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

AREAMAN AREA FOR THE MAN DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 15.238 | STD ERR | 1.702 | MEDIAN | 10.381 |
| MODE | 2.063 | STD DEV | 12.509 | VARIANCE | 156.473 |
| KURTOSIS | 4.185 | SKEWNESS | 1.855 | RANGE | 63.052 |
| MINIMUM | 2.063 | MAXIMUM | 65.114 | SUM | 822.835 |
| C.V. PCT | 82.092 | .95 C.I. | 11.823 | TO | 18.652 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

AREAWOM AREA FOR THE WOMAN DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 13.184 | STD ERR | 1.511 | MEDIAN | 10.980 |
| MODE | 3.281 | STD DEV | 11.100 | VARIANCE | 123.220 |
| KURTOSIS | 8.684 | SKEWNESS | 2.429 | RANGE | 63.896 |
| MINIMUM | 2.004 | MAXIMUM | 65.900 | SUM | 711.962 |
| C.V. PCT | 84.193 | .95 C.I. | 10.155 | TO | 16.214 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

AREACAR AREA FOR THE CAR DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 10.228 | STD ERR | 1.164 | MEDIAN | 7.628 |
| MODE | 1.410 | STD DEV | 8.557 | VARIANCE | 73.214 |
| KURTOSIS | 5.308 | SKEWNESS | 2.060 | RANGE | 43.203 |
| MINIMUM | 1.410 | MAXIMUM | 44.613 | SUM | 552.322 |
| C.V. PCT | 83.657 | .95 C.I. | 7.893 | TO | 12.564 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q103 TIME MAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 216.294 | STD ERR | 29.231 | MEDIAN | 146.250 |
| MODE | 57.000 | STD DEV | 208.748 | VARIANCE | 43575.932 |
| KURTOSIS | 6.096 | SKEWNESS | 2.428 | RANGE | 936.000 |
| MINIMUM | 48.000 | MAXIMUM | 984.000 | SUM | 11031.000 |
| C.V. PCT | 96.511 | .95 C.I. | 157.583 | TO | 275.006 |
| VALID CASES | 51 | MISSING CASES | 3 | | |

Q104 TIME WOMAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 217.176 | STD ERR | 22.889 | MEDIAN | 153.750 |
| MODE | 135.000 | STD DEV | 163.460 | VARIANCE | 26719.228 |
| KURTOSIS | 1.094 | SKEWNESS | 1.346 | RANGE | 630.000 |
| MINIMUM | 33.000 | MAXIMUM | 663.000 | SUM | 11076.000 |
| C.V. PCT | 75.266 | .95 C.I. | 171.203 | TO | 263.150 |
| VALID CASES | 51 | MISSING CASES | 3 | | |

Q105 TIME CAR

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 221.882 | STD ERR | 29.024 | MEDIAN | 168.000 |
| MODE | 54.000 | STD DEV | 207.276 | VARIANCE | 42963.466 |
| KURTOSIS | 6.722 | SKEWNESS | 2.401 | RANGE | 972.000 |
| MINIMUM | 42.000 | MAXIMUM | 1014.000 | SUM | 11316.000 |
| C.V. PCT | 93.417 | .95 C.I. | 163.585 | TO | 280.180 |
| VALID CASES | 51 | MISSING CASES | 3 | | |

```
*************************************************************
THE SECOND SET OF FREQUENCIES ARE FOR ABSENT CASES ONLY.EACH
 VARIABLE REPRESENTS THE AVERAGE OF SINGLE RATINGS PROVIDED
     BY TWO DIFFERENT RATERS EXCEPT FOR TIME VARIABLES
*************************************************************
```

Q29 SHADING MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 14 | 26 | 26 | 1.5 | 3 | 6 | 57 | 3.0 | 13 | 24 | 100 |
| .5 | 4 | 7 | 33 | 2.0 | 7 | 13 | 70 | | | | |
| 1.0 | 10 | 19 | 52 | 2.5 | 3 | 6 | 76 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.426 | STD ERR | .158 | MEDIAN | 1.200 |
| MODE | 0 | STD DEV | 1.163 | VARIANCE | 1.353 |
| KURTOSIS | -1.495 | SKEWNESS | .140 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 77.000 |
| C.V. PCT | 81.571 | .95 C.I. | 1.108 | TO | 1.743 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q31 SHADING WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 13 | 24 | 24 | 1.5 | 3 | 6 | 61 | 3.0 | 12 | 22 | 100 |
| .5 | 6 | 11 | 35 | 2.0 | 7 | 13 | 74 | | | | |
| 1.0 | 11 | 20 | 56 | 2.5 | 2 | 4 | 78 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.361 | STD ERR | .154 | MEDIAN | 1.114 |
| MODE | 0 | STD DEV | 1.130 | VARIANCE | 1.278 |
| KURTOSIS | -1.375 | SKEWNESS | .278 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 73.500 |
| C.V. PCT | 83.040 | .95 C.I. | 1.053 | TO | 1.670 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q33 SHADING CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 10 | 19 | 19 | 1.5 | 7 | 13 | 54 | 3.0 | 15 | 28 | 100 |
| .5 | 4 | 7 | 26 | 2.0 | 5 | 9 | 63 | | | | |
| 1.0 | 8 | 15 | 41 | 2.5 | 5 | 9 | 72 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.630 | STD ERR | .154 | MEDIAN | 1.607 |
| MODE | 3.000 | STD DEV | 1.129 | VARIANCE | 1.275 |
| KURTOSIS | -1.435 | SKEWNESS | -.121 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 88.000 |
| C.V. PCT | 69.298 | .95 C.I. | 1.321 | TO | 1.938 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

```
************************************************************
FREQUENCY TABLES HAVE BEEN OMITTED, BECAUSE THE FOLLOWING
     VARIABLES ARE CONTINUOUS. PRESENT CASES ONLY
************************************************************
W7          LENGTH MAN
MEAN          84.861     STD ERR         4.647      MEDIAN       77.750
MODE          42.000     STD DEV        34.151      VARIANCE   1166.325
KURTOSIS       -.640     SKEWNESS         .503      RANGE       134.000
MINIMUM       32.000     MAXIMUM       166.000      SUM        4582.500
C.V. PCT      40.244     .95 C.I.       75.540           TO      94.183
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W9          LENGTH WOMAN
MEAN          86.333     STD ERR         4.748      MEDIAN       83.750
MODE          70.000     STD DEV        34.890      VARIANCE   1217.330
KURTOSIS       -.429     SKEWNESS         .533      RANGE       134.500
MINIMUM       28.500     MAXIMUM       163.000      SUM        4662.000
C.V. PCT      40.413     .95 C.I.       76.810           TO      95.857
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W11         LENGTH CAR
MEAN          78.898     STD ERR         3.905      MEDIAN       70.250
MODE          63.000     STD DEV        28.698      VARIANCE    823.570
KURTOSIS        .351     SKEWNESS         .765      RANGE       125.500
MINIMUM       36.500     MAXIMUM       162.000      SUM        4260.500
C.V. PCT      36.373     .95 C.I.       71.065           TO      86.731
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W13         WIDTH MAN
MEAN          40.815     STD ERR         2.498      MEDIAN       40.000
MODE          26.000     STD DEV        18.360      VARIANCE    337.088
KURTOSIS       2.942     SKEWNESS        1.320      RANGE        95.500
MINIMUM       16.000     MAXIMUM       111.500      SUM        2204.000
C.V. PCT      44.984     .95 C.I.       35.804           TO      45.826
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W15         WIDTH WOMAN
MEAN          34.565     STD ERR         2.034      MEDIAN       32.250
MODE          16.000     STD DEV        14.949      VARIANCE    223.482
KURTOSIS       7.259     SKEWNESS        1.939      RANGE        88.000
MINIMUM       15.500     MAXIMUM       103.500      SUM        1866.500
C.V. PCT      43.250     .95 C.I.       30.484           TO      38.645
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W17         WIDTH CAR
MEAN          29.463     STD ERR         2.019      MEDIAN       25.250
MODE          21.000     STD DEV        14.839      VARIANCE    220.206
KURTOSIS       3.424     SKEWNESS        1.689      RANGE        72.000
MINIMUM        9.500     MAXIMUM        81.500      SUM        1591.000
C.V. PCT      50.366     .95 C.I.       25.413           TO      33.513
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

AREAMAN AREA FOR THE MAN DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 15.238 | STD ERR | 1.702 | MEDIAN | 10.381 |
| MODE | 2.063 | STD DEV | 12.509 | VARIANCE | 156.473 |
| KURTOSIS | 4.185 | SKEWNESS | 1.855 | RANGE | 63.052 |
| MINIMUM | 2.063 | MAXIMUM | 65.114 | SUM | 822.835 |
| C.V. PCT | 82.092 | .95 C.I. | 11.823 | TO | 18.652 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

AREAWOM AREA FOR THE WOMAN DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 13.184 | STD ERR | 1.511 | MEDIAN | 10.980 |
| MODE | 3.281 | STD DEV | 11.100 | VARIANCE | 123.220 |
| KURTOSIS | 8.684 | SKEWNESS | 2.429 | RANGE | 63.896 |
| MINIMUM | 2.004 | MAXIMUM | 65.900 | SUM | 711.962 |
| C.V. PCT | 84.193 | .95 C.I. | 10.155 | TO | 16.214 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

AREACAR AREA FOR THE CAR DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 10.228 | STD ERR | 1.164 | MEDIAN | 7.628 |
| MODE | 1.410 | STD DEV | 8.557 | VARIANCE | 73.214 |
| KURTOSIS | 5.308 | SKEWNESS | 2.060 | RANGE | 43.203 |
| MINIMUM | 1.410 | MAXIMUM | 44.613 | SUM | 552.322 |
| C.V. PCT | 83.657 | .95 C.I. | 7.893 | TO | 12.564 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q103 TIME MAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 216.294 | STD ERR | 29.231 | MEDIAN | 146.250 |
| MODE | 57.000 | STD DEV | 208.748 | VARIANCE | 43575.932 |
| KURTOSIS | 6.096 | SKEWNESS | 2.428 | RANGE | 936.000 |
| MINIMUM | 48.000 | MAXIMUM | 984.000 | SUM | 11031.000 |
| C.V. PCT | 96.511 | .95 C.I. | 157.583 | TO | 275.006 |
| VALID CASES | 51 | MISSING CASES | 3 | | |

Q104 TIME WOMAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 217.176 | STD ERR | 22.889 | MEDIAN | 153.750 |
| MODE | 135.000 | STD DEV | 163.460 | VARIANCE | 26719.228 |
| KURTOSIS | 1.094 | SKEWNESS | 1.346 | RANGE | 630.000 |
| MINIMUM | 33.000 | MAXIMUM | 663.000 | SUM | 11076.000 |
| C.V. PCT | 75.266 | .95 C.I. | 171.203 | TO | 263.150 |
| VALID CASES | 51 | MISSING CASES | 3 | | |

Q105 TIME CAR

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 221.882 | STD ERR | 29.024 | MEDIAN | 168.000 |
| MODE | 54.000 | STD DEV | 207.276 | VARIANCE | 42963.466 |
| KURTOSIS | 6.722 | SKEWNESS | 2.401 | RANGE | 972.000 |
| MINIMUM | 42.000 | MAXIMUM | 1014.000 | SUM | 11316.000 |
| C.V. PCT | 93.417 | .95 C.I. | 163.585 | TO | 280.180 |
| VALID CASES | 51 | MISSING CASES | 3 | | |

W19 HEAD SIZE MAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 17.194 | STD ERR | 1.121 | MEDIAN | 14.750 |
| MODE | 8.000 | STD DEV | 8.236 | VARIANCE | 67.825 |
| KURTOSIS | .596 | SKEWNESS | .989 | RANGE | 35.000 |
| MINIMUM | 8.000 | MAXIMUM | 43.000 | SUM | 928.500 |
| C.V. PCT | 47.897 | .95 C.I. | 14.947 | TO | 19.442 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

W21 HEAD SIZE WOMAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 17.759 | STD ERR | 1.066 | MEDIAN | 16.250 |
| MODE | 12.000 | STD DEV | 7.831 | VARIANCE | 61.328 |
| KURTOSIS | -.059 | SKEWNESS | .811 | RANGE | 31.000 |
| MINIMUM | 6.500 | MAXIMUM | 37.500 | SUM | 959.000 |
| C.V. PCT | 44.096 | .95 C.I. | 15.622 | TO | 19.897 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

HBRM HEAD BODY RATIO-MAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.630 | STD ERR | .125 | MEDIAN | 1.250 |
| MODE | 1.000 | STD DEV | .917 | VARIANCE | .841 |
| KURTOSIS | -.984 | SKEWNESS | .153 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 88.000 |
| C.V. PCT | 56.287 | .95 C.I. | 1.379 | TO | 1.880 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

HBRW HEAD BODY RATIO-WOMAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.667 | STD ERR | .119 | MEDIAN | 1.750 |
| MODE | 2.000 | STD DEV | .874 | VARIANCE | .764 |
| KURTOSIS | -.658 | SKEWNESS | -.029 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 90.000 |
| C.V. PCT | 52.449 | .95 C.I. | 1.428 | TO | 1.905 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

************************************************************
THE SECOND SET OF FREQUENCIES ARE FOR ABSENT CASES ONLY.EACH
VARIABLE REPRESENTS THE AVERAGE OF SINGLE RATINGS PROVIDED
BY TWO DIFFERENT RATERS EXCEPT FOR TIME VARIABLES
************************************************************

Q29 SHADING MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 14 | 26 | 26 | 1.5 | 3 | 6 | 57 | 3.0 | 13 | 24 | 100 |
| .5 | 4 | 7 | 33 | 2.0 | 7 | 13 | 70 | | | | |
| 1.0 | 10 | 19 | 52 | 2.5 | 3 | 6 | 76 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.426 | STD ERR | .158 | MEDIAN | 1.200 |
| MODE | 0 | STD DEV | 1.163 | VARIANCE | 1.353 |
| KURTOSIS | -1.495 | SKEWNESS | .140 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 77.000 |
| C.V. PCT | 81.571 | .95 C.I. | 1.108 | TO | 1.743 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q31 SHADING WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 13 | 24 | 24 | 1.5 | 3 | 6 | 61 | 3.0 | 12 | 22 | 100 |
| .5 | 6 | 11 | 35 | 2.0 | 7 | 13 | 74 | | | | |
| 1.0 | 11 | 20 | 56 | 2.5 | 2 | 4 | 78 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.361 | STD ERR | .154 | MEDIAN | 1.114 |
| MODE | 0 | STD DEV | 1.130 | VARIANCE | 1.278 |
| KURTOSIS | -1.375 | SKEWNESS | .278 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 73.500 |
| C.V. PCT | 83.040 | .95 C.I. | 1.053 | TO | 1.670 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q33 SHADING CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 10 | 19 | 19 | 1.5 | 7 | 13 | 54 | 3.0 | 15 | 28 | 100 |
| .5 | 4 | 7 | 26 | 2.0 | 5 | 9 | 63 | | | | |
| 1.0 | 8 | 15 | 41 | 2.5 | 5 | 9 | 72 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.630 | STD ERR | .154 | MEDIAN | 1.607 |
| MODE | 3.000 | STD DEV | 1.129 | VARIANCE | 1.275 |
| KURTOSIS | -1.435 | SKEWNESS | -.121 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 88.000 |
| C.V. PCT | 69.298 | .95 C.I. | 1.321 | TO | 1.938 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q73 ERASURE MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 10 | 19 | 19 | 1.5 | 8 | 15 | 56 | 3.0 | 6 | 11 | 100 |
| .5 | 4 | 7 | 26 | 2.0 | 11 | 20 | 76 | | | | |
| 1.0 | 8 | 15 | 41 | 2.5 | 7 | 13 | 89 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.472 | STD ERR | .134 | MEDIAN | 1.563 |
| MODE | 2.000 | STD DEV | .988 | VARIANCE | .976 |
| KURTOSIS | -1.129 | SKEWNESS | -.118 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 79.500 |
| C.V. PCT | 67.092 | .95 C.I. | 1.203 | TO | 1.742 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q75 ERASURE WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 12 | 22 | 22 | 1.5 | 5 | 9 | 48 | 3.0 | 13 | 24 | 100 |
| .5 | 3 | 6 | 28 | 2.0 | 8 | 15 | 63 | | | | |
| 1.0 | 6 | 11 | 39 | 2.5 | 7 | 13 | 76 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.620 | STD ERR | .155 | MEDIAN | 1.813 |
| MODE | 3.000 | STD DEV | 1.141 | VARIANCE | 1.301 |
| KURTOSIS | -1.433 | SKEWNESS | -.229 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 87.500 |
| C.V. PCT | 70.400 | .95 C.I. | 1.309 | TO | 1.932 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q77 ERASURE CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 13 | 24 | 24 | 1.5 | 5 | 9 | 56 | 3.0 | 12 | 22 | 100 |
| .5 | 4 | 7 | 31 | 2.0 | 6 | 11 | 67 | | | | |
| 1.0 | 8 | 15 | 46 | 2.5 | 6 | 11 | 78 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.491 | STD ERR | .156 | MEDIAN | 1.450 |
| MODE | 0 | STD DEV | 1.147 | VARIANCE | 1.316 |
| KURTOSIS | -1.501 | SKEWNESS | .004 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 80.500 |
| C.V. PCT | 76.952 | .95 C.I. | 1.178 | TO | 1.804 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q49 DELINEATION LINE ABSENCE MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 28 | 52 | 52 | 1.0 | 10 | 19 | 76 | 2.0 | 5 | 9 | 93 |
| .5 | 3 | 6 | 57 | 1.5 | 4 | 7 | 83 | 3.0 | 4 | 7 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .731 | STD ERR | .128 | MEDIAN | .232 |
| MODE | 0 | STD DEV | .940 | VARIANCE | .884 |
| KURTOSIS | .292 | SKEWNESS | 1.129 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 39.500 |
| C.V. PCT | 128.542 | .95 C.I. | .475 | TO | .988 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q51 DELINEATION LINE ABSENCE WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 23 | 43 | 43 | 1.5 | 2 | 4 | 78 | 3.0 | 5 | 9 | 100 |
| .5 | 3 | 6 | 48 | 2.0 | 6 | 11 | 89 | | | | |
| 1.0 | 14 | 26 | 74 | 2.5 | 1 | 2 | 91 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .889 | STD ERR | .135 | MEDIAN | .786 |
| MODE | 0 | STD DEV | .989 | VARIANCE | .978 |
| KURTOSIS | -.308 | SKEWNESS | .883 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 48.000 |
| C.V. PCT | 111.255 | .95 C.I. | .619 | TO | 1.159 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q53 DELINEATION LINE ABSENCE CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 30 | 56 | 56 | 1.0 | 9 | 17 | 85 | 2.0 | 4 | 7 | 98 |
| .5 | 7 | 13 | 69 | 1.5 | 3 | 6 | 91 | 3.0 | 1 | 2 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .519 | STD ERR | .099 | MEDIAN | .200 |
| MODE | 0 | STD DEV | .727 | VARIANCE | .528 |
| KURTOSIS | 1.570 | SKEWNESS | 1.427 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 28.000 |
| C.V. PCT | 140.131 | .95 C.I. | .320 | TO | .717 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q91 BODY SIMPLIFICATION MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .5 | 2 | 4 | 4 | 1.5 | 9 | 17 | 28 | 2.5 | 4 | 7 | 94 |
| 1.0 | 4 | 7 | 11 | 2.0 | 32 | 59 | 87 | 3.0 | 3 | 6 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.880 | STD ERR | .070 | MEDIAN | 1.938 |
| MODE | 2.000 | STD DEV | .513 | VARIANCE | .264 |
| KURTOSIS | 1.433 | SKEWNESS | -.469 | RANGE | 2.500 |
| MINIMUM | .500 | MAXIMUM | 3.000 | SUM | 101.500 |
| C.V. PCT | 27.312 | .95 C.I. | 1.740 | TO | 2.020 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q93 BODY SIMPLIFICATION WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .5 | 2 | 4 | 4 | 1.5 | 7 | 13 | 22 | 2.5 | 6 | 11 | 93 |
| 1.0 | 3 | 6 | 9 | 2.0 | 32 | 59 | 81 | 3.0 | 4 | 7 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.954 | STD ERR | .072 | MEDIAN | 1.984 |
| MODE | 2.000 | STD DEV | .525 | VARIANCE | .276 |
| KURTOSIS | 1.545 | SKEWNESS | -.518 | RANGE | 2.500 |
| MINIMUM | .500 | MAXIMUM | 3.000 | SUM | 105.500 |
| C.V. PCT | 26.896 | .95 C.I. | 1.810 | TO | 2.097 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q95 BODY SIMPLIFICATION CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 8 | 15 | 15 | 1.5 | 16 | 30 | 83 | 3.0 | 1 | 2 | 100 |
| .5 | 5 | 9 | 24 | 2.0 | 7 | 13 | 96 | | | | |
| 1.0 | 16 | 30 | 54 | 2.5 | 1 | 2 | 98 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.148 | STD ERR | .094 | MEDIAN | 1.188 |
| MODE | 1.000 | STD DEV | .691 | VARIANCE | .478 |
| KURTOSIS | -.045 | SKEWNESS | .019 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 62.000 |
| C.V. PCT | 60.194 | .95 C.I. | .960 | TO | 1.337 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q85 DISTORTION MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2 | 4 | 4 | 1.5 | 3 | 6 | 30 | 3.0 | 9 | 17 | 100 |
| .5 | 4 | 7 | 11 | 2.0 | 17 | 31 | 61 | | | | |
| 1.0 | 7 | 13 | 24 | 2.5 | 12 | 22 | 83 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.935 | STD ERR | .113 | MEDIAN | 2.074 |
| MODE | 2.000 | STD DEV | .830 | VARIANCE | .689 |
| KURTOSIS | -.362 | SKEWNESS | -.660 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 104.500 |
| C.V. PCT | 42.897 | .95 C.I. | 1.709 | TO | 2.162 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q87 DISTORTION WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 2 | 1.5 | 8 | 15 | 35 | 3.0 | 12 | 22 | 100 |
| .5 | 3 | 6 | 7 | 2.0 | 15 | 28 | 63 | | | | |
| 1.0 | 7 | 13 | 20 | 2.5 | 8 | 15 | 78 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.972 | STD ERR | .109 | MEDIAN | 2.017 |
| MODE | 2.000 | STD DEV | .798 | VARIANCE | .636 |
| KURTOSIS | -.572 | SKEWNESS | -.398 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 106.500 |
| C.V. PCT | 40.437 | .95 C.I. | 1.755 | TO | 2.190 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q89 DISTORTION CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .5 | 1 | 2 | 2 | 1.5 | 12 | 22 | 39 | 2.5 | 4 | 7 | 93 |
| 1.0 | 8 | 15 | 17 | 2.0 | 25 | 46 | 85 | 3.0 | 4 | 7 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.824 | STD ERR | .076 | MEDIAN | 1.870 |
| MODE | 2.000 | STD DEV | .559 | VARIANCE | .313 |
| KURTOSIS | .149 | SKEWNESS | .075 | RANGE | 2.500 |
| MINIMUM | .500 | MAXIMUM | 3.000 | SUM | 98.500 |
| C.V. PCT | 30.662 | .95 C.I. | 1.671 | TO | 1.977 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q67 EMPHASIS LINE MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 33 | 61 | 61 | 1.5 | 3 | 6 | 87 | 3.0 | 2 | 4 | 100 |
| .5 | 5 | 9 | 70 | 2.0 | 3 | 6 | 93 | | | | |
| 1.0 | 6 | 11 | 81 | 2.5 | 2 | 4 | 96 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .556 | STD ERR | .118 | MEDIAN | .159 |
| MODE | 0 | STD DEV | .867 | VARIANCE | .752 |
| KURTOSIS | 1.267 | SKEWNESS | 1.514 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 30.000 |
| C.V. PCT | 156.048 | .95 C.I. | .319 | TO | .792 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q69 EMPHASIS LINE-WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 9 | 17 | 17 | 1.5 | 6 | 11 | 87 | 3.0 | 1 | 2 | 100 |
| .5 | 4 | 7 | 24 | 2.0 | 4 | 7 | 94 | | | | |
| 1.0 | 28 | 52 | 76 | 2.5 | 2 | 4 | 98 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.019 | STD ERR | .092 | MEDIAN | 1.000 |
| MODE | 1.000 | STD DEV | .673 | VARIANCE | .452 |
| KURTOSIS | .853 | SKEWNESS | .558 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 55.000 |
| C.V. PCT | 66.044 | .95 C.I. | .835 | TO | 1.202 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q71 EMPHASIS LINE CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 19 | 35 | 35 | 1.5 | 1 | 2 | 72 | 3.0 | 11 | 20 | 100 |
| .5 | 10 | 19 | 54 | 2.0 | 2 | 4 | 76 | | | | |
| 1.0 | 9 | 17 | 70 | 2.5 | 2 | 4 | 80 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.065 | STD ERR | .159 | MEDIAN | .650 |
| MODE | 0 | STD DEV | 1.166 | VARIANCE | 1.359 |
| KURTOSIS | -1.006 | SKEWNESS | .774 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 57.500 |
| C.V. PCT | 109.477 | .95 C.I. | .747 | TO | 1.383 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q79 REINFORCEMENT MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 27 | 50 | 50 | 1.5 | 3 | 6 | 80 | 3.0 | 6 | 11 | 100 |
| .5 | 8 | 15 | 65 | 2.0 | 4 | 7 | 87 | | | | |
| 1.0 | 5 | 9 | 74 | 2.5 | 1 | 2 | 89 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .778 | STD ERR | .142 | MEDIAN | .250 |
| MODE | 0 | STD DEV | 1.040 | VARIANCE | 1.082 |
| KURTOSIS | -.021 | SKEWNESS | 1.159 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 42.000 |
| C.V. PCT | 133.724 | .95 C.I. | .494 | TO | 1.062 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q81 REINFORCEMENT WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 44 | 44 | 1.5 | 5 | 9 | 78 | 3.0 | 4 | 7 | 100 |
| .5 | 9 | 17 | 61 | 2.0 | 6 | 11 | 89 | | | | |
| 1.0 | 4 | 7 | 69 | 2.5 | 2 | 4 | 93 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .833 | STD ERR | .135 | MEDIAN | .417 |
| MODE | 0 | STD DEV | .995 | VARIANCE | .991 |
| KURTOSIS | -.435 | SKEWNESS | .929 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 45.000 |
| C.V. PCT | 119.433 | .95 C.I. | .562 | TO | 1.105 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q83 REINFORCEMENT CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 19 | 35 | 35 | 1.5 | 4 | 7 | 80 | 3.0 | 5 | 9 | 100 |
| .5 | 9 | 17 | 52 | 2.0 | 5 | 9 | 89 | | | | |
| 1.0 | 11 | 20 | 72 | 2.5 | 1 | 2 | 91 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .907 | STD ERR | .131 | MEDIAN | .694 |
| MODE | 0 | STD DEV | .962 | VARIANCE | .925 |
| KURTOSIS | -.140 | SKEWNESS | .934 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 49.000 |
| C.V. PCT | 106.004 | .95 C.I. | .645 | TO | 1.170 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q97B LIGHT-HEAVY LINE-MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 1 | 2 | 2 | 3.0 | 6 | 11 | 24 | 5.0 | 12 | 22 | 80 |
| 1.5 | 2 | 4 | 6 | 3.5 | 6 | 11 | 35 | 5.5 | 5 | 9 | 89 |
| 2.0 | 1 | 2 | 7 | 4.0 | 6 | 11 | 46 | 6.0 | 4 | 7 | 96 |
| 2.5 | 3 | 6 | 13 | 4.5 | 6 | 11 | 57 | 6.5 | 2 | 4 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 4.222 | STD ERR | .178 | MEDIAN | 4.417 |
| MODE | 5.000 | STD DEV | 1.306 | VARIANCE | 1.704 |
| KURTOSIS | -.304 | SKEWNESS | -.450 | RANGE | 5.500 |
| MINIMUM | 1.000 | MAXIMUM | 6.500 | SUM | 228.000 |
| C.V. PCT | 30.920 | .95 C.I. | 3.866 | TO | 4.579 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q99B LIGHT-HEAVY LINE-WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | 2 | 4 | 4 | 3.5 | 6 | 11 | 43 | 5.5 | 4 | 7 | 94 |
| 2.0 | 1 | 2 | 6 | 4.0 | 8 | 15 | 57 | 6.0 | 3 | 6 | 100 |
| 2.5 | 7 | 13 | 19 | 4.5 | 8 | 15 | 72 | | | | |
| 3.0 | 7 | 13 | 31 | 5.0 | 8 | 15 | 87 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 3.935 | STD ERR | .158 | MEDIAN | 4.000 |
| MODE | 4.000 | STD DEV | 1.162 | VARIANCE | 1.349 |
| KURTOSIS | -.750 | SKEWNESS | -.128 | RANGE | 4.500 |
| MINIMUM | 1.500 | MAXIMUM | 6.000 | SUM | 212.500 |
| C.V. PCT | 29.520 | .95 C.I. | 3.618 | TO | 4.252 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q101B LIGHT-HEAVY LINE-CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 1 | 2 | 2 | 4.0 | 8 | 15 | 44 | 6.0 | 2 | 4 | 98 |
| 2.5 | 1 | 2 | 4 | 4.5 | 6 | 11 | 56 | 6.5 | 1 | 2 | 100 |
| 3.0 | 5 | 9 | 13 | 5.0 | 12 | 22 | 78 | | | | |
| 3.5 | 9 | 17 | 30 | 5.5 | 9 | 17 | 94 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 4.407 | STD ERR | .135 | MEDIAN | 4.500 |
| MODE | 5.000 | STD DEV | .996 | VARIANCE | .991 |
| KURTOSIS | -.616 | SKEWNESS | -.211 | RANGE | 4.500 |
| MINIMUM | 2.000 | MAXIMUM | 6.500 | SUM | 238.000 |
| C.V. PCT | 22.590 | .95 C.I. | 4.136 | TO | 4.679 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q97 LIGHT-HEAVY LINE-MAN-HANDLER'S CODING

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 5 | 9 | 9 | 1.5 | 9 | 17 | 81 | 3.0 | 1 | 2 | 100 |
| .5 | 11 | 20 | 30 | 2.0 | 5 | 9 | 91 | | | | |
| 1.0 | 19 | 35 | 65 | 2.5 | 4 | 7 | 98 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.130 | STD ERR | .097 | MEDIAN | 1.039 |
| MODE | 1.000 | STD DEV | .715 | VARIANCE | .511 |
| KURTOSIS | -.003 | SKEWNESS | .568 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 61.000 |
| C.V. PCT | 63.292 | .95 C.I. | .934 | TO | 1.325 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q99 LIGHT-HEAVY LINE-WOMAN-HANDLER'S CODING

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 6 | 11 | 11 | 1.0 | 17 | 31 | 69 | 2.0 | 4 | 7 | 96 |
| .5 | 14 | 26 | 37 | 1.5 | 11 | 20 | 89 | 2.5 | 2 | 4 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .991 | STD ERR | .085 | MEDIAN | .956 |
| MODE | 1.000 | STD DEV | .626 | VARIANCE | .391 |
| KURTOSIS | -.163 | SKEWNESS | .396 | RANGE | 2.500 |
| MINIMUM | 0 | MAXIMUM | 2.500 | SUM | 53.500 |
| C.V. PCT | 63.148 | .95 C.I. | .820 | TO | 1.162 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q101 LIGHT-HEAVY LINE-CAR-HANDLER'S CODING

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 7 | 13 | 13 | 1.0 | 18 | 33 | 70 | 2.0 | 3 | 6 | 98 |
| .5 | 13 | 24 | 37 | 1.5 | 12 | 22 | 93 | 2.5 | 1 | 2 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .944 | STD ERR | .080 | MEDIAN | .944 |
| MODE | 1.000 | STD DEV | .588 | VARIANCE | .346 |
| KURTOSIS | -.211 | SKEWNESS | .223 | RANGE | 2.500 |
| MINIMUM | 0 | MAXIMUM | 2.500 | SUM | 51.000 |
| C.V. PCT | 62.274 | .95 C.I. | .784 | TO | 1.105 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q35 VERTICAL IMBALANCE MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 25 | 46 | 46 | 1.0 | 20 | 37 | 94 | 2.0 | 2 | 4 | 100 |
| .5 | 6 | 11 | 57 | 1.5 | 1 | 2 | 96 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .528 | STD ERR | .076 | MEDIAN | .417 |
| MODE | 0 | STD DEV | .561 | VARIANCE | .315 |
| KURTOSIS | -.366 | SKEWNESS | .634 | RANGE | 2.000 |
| MINIMUM | 0 | MAXIMUM | 2.000 | SUM | 28.500 |
| C.V. PCT | 106.384 | .95 C.I. | .375 | TO | .681 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q37 VERTICAL IMBALANCE WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 44 | 44 | 1.0 | 22 | 41 | 93 | 2.0 | 2 | 4 | 100 |
| .5 | 4 | 7 | 52 | 1.5 | 2 | 4 | 96 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .574 | STD ERR | .079 | MEDIAN | .625 |
| MODE | 0 | STD DEV | .578 | VARIANCE | .334 |
| KURTOSIS | -.703 | SKEWNESS | .461 | RANGE | 2.000 |
| MINIMUM | 0 | MAXIMUM | 2.000 | SUM | 31.000 |
| C.V. PCT | 100.676 | .95 C.I. | .416 | TO | .732 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q39 VERTICAL IMBALANCE CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 31 | 57 | 57 | 1.0 | 12 | 22 | 89 | 3.0 | 2 | 4 | 100 |
| .5 | 5 | 9 | 67 | 2.0 | 4 | 7 | 96 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .528 | STD ERR | .106 | MEDIAN | .185 |
| MODE | 0 | STD DEV | .780 | VARIANCE | .608 |
| KURTOSIS | 2.344 | SKEWNESS | 1.642 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 28.500 |
| C.V. PCT | 147.705 | .95 C.I. | .315 | TO | .741 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q23 OMISSION MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 19 | 35 | 35 | 1.0 | 22 | 41 | 81 | 2.0 | 3 | 6 | 93 |
| .5 | 3 | 6 | 41 | 1.5 | 3 | 6 | 87 | 3.0 | 4 | 7 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .852 | STD ERR | .116 | MEDIAN | .864 |
| MODE | 1.000 | STD DEV | .850 | VARIANCE | .723 |
| KURTOSIS | .905 | SKEWNESS | 1.058 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 46.000 |
| C.V. PCT | 99.812 | .95 C.I. | .620 | TO | 1.084 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q25 OMISSION WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 17 | 31 | 31 | 1.0 | 18 | 33 | 78 | 2.0 | 3 | 6 | 96 |
| .5 | 7 | 13 | 44 | 1.5 | 7 | 13 | 91 | 3.0 | 2 | 4 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .815 | STD ERR | .102 | MEDIAN | .833 |
| MODE | 1.000 | STD DEV | .748 | VARIANCE | .559 |
| KURTOSIS | .918 | SKEWNESS | .881 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 44.000 |
| C.V. PCT | 91.791 | .95 C.I. | .611 | TO | 1.019 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q27 OMISSION CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 16 | 30 | 30 | 1.5 | 2 | 4 | 67 | 3.0 | 7 | 13 | 100 |
| .5 | 2 | 4 | 33 | 2.0 | 8 | 15 | 81 | | | | |
| 1.0 | 16 | 30 | 63 | 2.5 | 3 | 6 | 87 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.194 | STD ERR | .142 | MEDIAN | 1.031 |
| MODE | 0 | STD DEV | 1.043 | VARIANCE | 1.089 |
| KURTOSIS | -1.047 | SKEWNESS | .415 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 64.500 |
| C.V. PCT | 87.361 | .95 C.I. | .910 | TO | 1.479 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q1 PLACEMENT MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 29 | 54 | 54 | 1.0 | 12 | 22 | 81 | 2.0 | 6 | 11 | 98 |
| .5 | 3 | 6 | 59 | 1.5 | 3 | 6 | 87 | 3.0 | 1 | 2 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .611 | STD ERR | .106 | MEDIAN | .216 |
| MODE | 0 | STD DEV | .781 | VARIANCE | .610 |
| KURTOSIS | .291 | SKEWNESS | 1.065 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 33.000 |
| C.V. PCT | 127.811 | .95 C.I. | .398 | TO | .824 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q3 PLACEMENT WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 44 | 44 | 1.0 | 10 | 19 | 72 | 2.0 | 10 | 19 | 98 |
| .5 | 5 | 9 | 54 | 1.5 | 4 | 7 | 80 | 3.0 | 1 | 2 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .769 | STD ERR | .114 | MEDIAN | .550 |
| MODE | 0 | STD DEV | .840 | VARIANCE | .705 |
| KURTOSIS | -.738 | SKEWNESS | .678 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 41.500 |
| C.V. PCT | 109.242 | .95 C.I. | .539 | TO | .998 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q5 PLACEMENT CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 14 | 26 | 26 | 1.5 | 1 | 2 | 63 | 3.0 | 5 | 9 | 100 |
| .5 | 4 | 7 | 33 | 2.0 | 14 | 26 | 89 | | | | |
| 1.0 | 15 | 28 | 61 | 2.5 | 1 | 2 | 91 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.185 | STD ERR | .132 | MEDIAN | 1.050 |
| MODE | 1.000 | STD DEV | .968 | VARIANCE | .937 |
| KURTOSIS | -.964 | SKEWNESS | .326 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 64.000 |
| C.V. PCT | 81.663 | .95 C.I. | .921 | TO | 1.449 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q61 LINE DISCONTINUITY MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 44 | 44 | 1.5 | 6 | 11 | 69 | 3.0 | 10 | 19 | 100 |
| .5 | 5 | 9 | 54 | 2.0 | 4 | 7 | 76 | | | | |
| 1.0 | 2 | 4 | 57 | 2.5 | 3 | 6 | 81 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.093 | STD ERR | .164 | MEDIAN | .550 |
| MODE | 0 | STD DEV | 1.206 | VARIANCE | 1.454 |
| KURTOSIS | -1.359 | SKEWNESS | .546 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 59.000 |
| C.V. PCT | 110.345 | .95 C.I. | .764 | TO | 1.422 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q63 LINE DISCONTINUITY WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 21 | 39 | 39 | 1.5 | 5 | 9 | 59 | 3.0 | 12 | 22 | 100 |
| .5 | 4 | 7 | 46 | 2.0 | 4 | 7 | 67 | | | | |
| 1.0 | 2 | 4 | 50 | 2.5 | 6 | 11 | 78 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.306 | STD ERR | .171 | MEDIAN | 1.250 |
| MODE | 0 | STD DEV | 1.257 | VARIANCE | 1.579 |
| KURTOSIS | -1.697 | SKEWNESS | .208 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 70.500 |
| C.V. PCT | 96.261 | .95 C.I. | .963 | TO | 1.649 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q65 LINE DISCONTINUITY CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 28 | 52 | 52 | 1.5 | 7 | 13 | 83 | 3.0 | 6 | 11 | 100 |
| .5 | 4 | 7 | 59 | 2.0 | 2 | 4 | 87 | | | | |
| 1.0 | 6 | 11 | 70 | 2.5 | 1 | 2 | 89 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .796 | STD ERR | .141 | MEDIAN | .232 |
| MODE | 0 | STD DEV | 1.035 | VARIANCE | 1.071 |
| KURTOSIS | -.098 | SKEWNESS | 1.077 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 43.000 |
| C.V. PCT | 129.959 | .95 C.I. | .514 | TO | 1.079 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q55 TRANSPARANCY MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 43 | 80 | 80 | 1.0 | 5 | 9 | 94 | 2.0 | 1 | 2 | 98 |
| .5 | 3 | 6 | 85 | 1.5 | 1 | 2 | 96 | 3.0 | 1 | 2 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .241 | STD ERR | .079 | MEDIAN | .064 |
| MODE | 0 | STD DEV | .581 | VARIANCE | .337 |
| KURTOSIS | 10.182 | SKEWNESS | 3.011 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 13.000 |
| C.V. PCT | 241.201 | .95 C.I. | .082 | TO | .399 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q57 TRANSPARANCY WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 42 | 78 | 78 | 1.0 | 6 | 11 | 93 | 2.5 | 2 | 4 | 98 |
| .5 | 2 | 4 | 81 | 1.5 | 1 | 2 | 94 | 3.0 | 1 | 2 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .306 | STD ERR | .094 | MEDIAN | .071 |
| MODE | 0 | STD DEV | .690 | VARIANCE | .476 |
| KURTOSIS | 6.433 | SKEWNESS | 2.582 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 16.500 |
| C.V. PCT | 225.706 | .95 C.I. | .117 | TO | .494 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q59 TRANSPARANCY-CAR

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|
| 0 | 43 | 80 | 80 | 1.0 | 4 | 7 | 94 |
| .5 | 4 | 7 | 87 | 1.5 | 3 | 6 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | .194 | STD ERR | .058 | MEDIAN | .064 |
| MODE | 0 | STD DEV | .428 | VARIANCE | .183 |
| KURTOSIS | 3.433 | SKEWNESS | 2.141 | RANGE | 1.500 |
| MINIMUM | 0 | MAXIMUM | 1.500 | SUM | 10.500 |
| C.V. PCT | 220.110 | .95 C.I. | .078 | TO | .311 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q41 HAIRSHADING MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 4 | 7 | 7 | 1.5 | 9 | 17 | 35 | 3.0 | 9 | 17 | 100 |
| .5 | 1 | 2 | 9 | 2.0 | 19 | 35 | 70 | | | | |
| 1.0 | 5 | 9 | 19 | 2.5 | 7 | 13 | 83 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.880 | STD ERR | .111 | MEDIAN | 1.961 |
| MODE | 2.000 | STD DEV | .818 | VARIANCE | .669 |
| KURTOSIS | .217 | SKEWNESS | -.670 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 101.500 |
| C.V. PCT | 43.522 | .95 C.I. | 1.656 | TO | 2.103 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q43 HAIRSHADING WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2 | 4 | 4 | 1.5 | 2 | 4 | 20 | 2.5 | 10 | 19 | 78 |
| 1.0 | 7 | 13 | 17 | 2.0 | 21 | 39 | 59 | 3.0 | 12 | 22 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 2.093 | STD ERR | .102 | MEDIAN | 2.131 |
| MODE | 2.000 | STD DEV | .747 | VARIANCE | .557 |
| KURTOSIS | .699 | SKEWNESS | -.859 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 113.000 |
| C.V. PCT | 35.675 | .95 C.I. | 1.889 | TO | 2.296 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q45 HEAD SIMPLIFICATION MAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 18 | 33 | 33 | 1.5 | 7 | 13 | 76 | 3.0 | 6 | 11 | 100 |
| .5 | 8 | 15 | 48 | 2.0 | 4 | 7 | 83 | | | | |
| 1.0 | 8 | 15 | 63 | 2.5 | 3 | 6 | 89 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.037 | STD ERR | .140 | MEDIAN | .813 |
| MODE | 0 | STD DEV | 1.032 | VARIANCE | 1.065 |
| KURTOSIS | -.790 | SKEWNESS | .673 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 56.000 |
| C.V. PCT | 99.496 | .95 C.I. | .755 | TO | 1.319 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q47 HEAD SIMPLIFICATION WOMAN

| CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT | CODE | FREQ | ADJ PCT | CUM PCT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 13 | 24 | 24 | 1.0 | 18 | 33 | 69 | 2.0 | 9 | 17 | 91 |
| .5 | 6 | 11 | 35 | 1.5 | 3 | 6 | 74 | 3.0 | 5 | 9 | 100 |

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.083 | STD ERR | .124 | MEDIAN | .972 |
| MODE | 1.000 | STD DEV | .910 | VARIANCE | .828 |
| KURTOSIS | -.325 | SKEWNESS | .641 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 58.500 |
| C.V. PCT | 83.986 | .95 C.I. | .835 | TO | 1.332 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

```
**********************************************************
FREQUENCY TABLES HAVE BEEN OMITTED, BECAUSE THE FOLLOWING
      VARIABLES ARE CONTINUOUS. ABSENT CASES ONLY
**********************************************************
W7          LENGTH MAN
MEAN          79.111     STD ERR        3.939     MEDIAN        80.250
MODE          44.000     STD DEV       28.942     VARIANCE     837.667
KURTOSIS       -.768     SKEWNESS        .085     RANGE        111.500
MINIMUM       29.500     MAXIMUM      141.000     SUM         4272.000
C.V. PCT      36.585     .95 C.I.      71.211           TO      87.011
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W9          LENGTH WOMAN
MEAN          78.935     STD ERR        3.878     MEDIAN        77.500
MODE          55.000     STD DEV       28.495     VARIANCE     811.982
KURTOSIS       -.655     SKEWNESS        .170     RANGE        111.500
MINIMUM       24.500     MAXIMUM      136.000     SUM         4262.500
C.V. PCT      36.100     .95 C.I.      71.157           TO      86.713
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W11         LENGTH CAR
MEAN          83.861     STD ERR        4.054     MEDIAN        84.250
MODE          38.500     STD DEV       29.792     VARIANCE     887.542
KURTOSIS       1.008     SKEWNESS        .534     RANGE        152.500
MINIMUM       31.000     MAXIMUM      183.500     SUM         4528.500
C.V. PCT      35.525     .95 C.I.      75.730           TO      91.993
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W13         WIDTH MAN
MEAN          34.852     STD ERR        2.042     MEDIAN        33.917
MODE          29.000     STD DEV       15.006     VARIANCE     225.185
KURTOSIS       3.187     SKEWNESS       1.297     RANGE         83.000
MINIMUM        9.000     MAXIMUM       92.000     SUM         1882.000
C.V. PCT      43.057     .95 C.I.      30.756           TO      38.948
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W15         WIDTH WOMAN
MEAN          30.898     STD ERR        1.936     MEDIAN        29.850
MODE          30.000     STD DEV       14.225     VARIANCE     202.353
KURTOSIS        .435     SKEWNESS        .917     RANGE         59.500
MINIMUM        9.500     MAXIMUM       69.000     SUM         1668.500
C.V. PCT      46.039     .95 C.I.      27.015           TO      34.781
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
W17         WIDTH CAR
MEAN          32.481     STD ERR        2.463     MEDIAN        29.750
MODE          12.000     STD DEV       18.101     VARIANCE     327.660
KURTOSIS      12.326     SKEWNESS       2.935     RANGE        110.500
MINIMUM       12.000     MAXIMUM      122.500     SUM         1754.000
C.V. PCT      55.728     .95 C.I.      27.541           TO      37.422
VALID CASES       54     MISSING CASES      0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

AREAMAN AREA FOR THE MAN DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 11.969 | STD ERR | 1.199 | MEDIAN | 10.127 |
| MODE | 30.844 | STD DEV | 8.814 | VARIANCE | 77.683 |
| KURTOSIS | 4.293 | SKEWNESS | 1.677 | RANGE | 46.430 |
| MINIMUM | 1.367 | MAXIMUM | 47.797 | SUM | 646.303 |
| C.V. PCT | 73.641 | .95 C.I. | 9.563 | TO | 14.374 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

AREAWOM AREA FOR THE WOMAN DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 10.721 | STD ERR | 1.100 | MEDIAN | 9.090 |
| MODE | 1.053 | STD DEV | 8.084 | VARIANCE | 65.346 |
| KURTOSIS | .753 | SKEWNESS | 1.189 | RANGE | 31.561 |
| MINIMUM | 1.053 | MAXIMUM | 32.613 | SUM | 578.940 |
| C.V. PCT | 75.399 | .95 C.I. | 8.515 | TO | 12.928 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

AREACAR AREA FOR THE CAR DRAWING

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 12.076 | STD ERR | 1.536 | MEDIAN | 9.630 |
| MODE | 1.453 | STD DEV | 11.286 | VARIANCE | 127.381 |
| KURTOSIS | 12.064 | SKEWNESS | 3.098 | RANGE | 63.775 |
| MINIMUM | 1.453 | MAXIMUM | 65.229 | SUM | 652.116 |
| C.V. PCT | 93.459 | .95 C.I. | 8.996 | TO | 15.157 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

Q103 TIME MAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 290.423 | STD ERR | 24.692 | MEDIAN | 250.500 |
| MODE | 147.000 | STD DEV | 178.056 | VARIANCE | 31704.014 |
| KURTOSIS | 2.727 | SKEWNESS | 1.588 | RANGE | 810.000 |
| MINIMUM | 57.000 | MAXIMUM | 867.000 | SUM | 15102.000 |
| C.V. PCT | 61.309 | .95 C.I. | 240.852 | TO | 339.994 |
| VALID CASES | 52 | MISSING CASES | 2 | | |

Q104 TIME WOMAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 322.442 | STD ERR | 32.820 | MEDIAN | 280.500 |
| MODE | 135.000 | STD DEV | 236.665 | VARIANCE | 56010.526 |
| KURTOSIS | 10.587 | SKEWNESS | 2.618 | RANGE | 1440.000 |
| MINIMUM | 39.000 | MAXIMUM | 1479.000 | SUM | 16767.000 |
| C.V. PCT | 73.398 | .95 C.I. | 256.554 | TO | 388.330 |
| VALID CASES | 52 | MISSING CASES | 2 | | |

Q105 TIME CAR

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 282.692 | STD ERR | 24.816 | MEDIAN | 238.500 |
| MODE | 150.000 | STD DEV | 178.952 | VARIANCE | 32023.982 |
| KURTOSIS | 2.534 | SKEWNESS | 1.459 | RANGE | 894.000 |
| MINIMUM | 9.000 | MAXIMUM | 903.000 | SUM | 14700.000 |
| C.V. PCT | 63.303 | .95 C.I. | 232.872 | TO | 332.513 |
| VALID CASES | 52 | MISSING CASES | 2 | | |

W19 HEAD SIZE MAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 15.315 | STD ERR | .777 | MEDIAN | 15.893 |
| MODE | 16.000 | STD DEV | 5.713 | VARIANCE | 32.635 |
| KURTOSIS | 2.014 | SKEWNESS | .718 | RANGE | 30.500 |
| MINIMUM | 5.000 | MAXIMUM | 35.500 | SUM | 827.000 |
| C.V. PCT | 37.302 | .95 C.I. | 13.756 | TO | 16.874 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

W21 HEAD SIZE WOMAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 16.713 | STD ERR | 1.468 | MEDIAN | 16.000 |
| MODE | 12.000 | STD DEV | 10.790 | VARIANCE | 116.421 |
| KURTOSIS | 23.749 | SKEWNESS | 4.079 | RANGE | 76.500 |
| MINIMUM | 4.500 | MAXIMUM | 81.000 | SUM | 902.500 |
| C.V. PCT | 64.560 | .95 C.I. | 13.768 | TO | 19.658 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

HBRM HEAD BODY RATIO-MAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.509 | STD ERR | .126 | MEDIAN | 1.225 |
| MODE | 1.000 | STD DEV | .929 | VARIANCE | .863 |
| KURTOSIS | -.862 | SKEWNESS | .192 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 81.500 |
| C.V. PCT | 61.556 | .95 C.I. | 1.256 | TO | 1.763 |
| VALID CASES | 54 | MISSING CASES | 0 | | |

HBRW HEAD BODY RATIO-WOMAN

| | | | | | |
|---|---|---|---|---|---|
| MEAN | 1.602 | STD ERR | .121 | MEDIAN | 1.778 |
| MODE | 2.000 | STD DEV | .887 | VARIANCE | .787 |
| KURTOSIS | -.648 | SKEWNESS | -.110 | RANGE | 3.000 |
| MINIMUM | 0 | MAXIMUM | 3.000 | SUM | 86.500 |
| C.V. PCT | 55.367 | .95 C.I. | 1.360 | TO | 1.844 |
| VALID CASES | 54 | MISSING CASES | 0 | | |