This is to certify that the

dissertation entitled

EXPERIMENTER PERSONAL POWER AND MONITORING EFFECTS ON FIGURE DRAWING TASKS

presented by

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has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology

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Date 2/2/87
12/4/86

O-12771

EXPERIMENTER PERSONAL POWER AND MONITORING EFFECTS ON FIGURE DRAWING TASKS

By

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A DISSERTATION

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

DOCTOR OF PHILOSOPHY

Department of Psychology

1987

ABSTRACT

EXPERIMENTER PERSONAL POWER
AND MONITORING EFFECTS
ON FIGURE DRAWING TASKS

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The effects of experimenter personal power on three figure drawing tasks (male, female, automobile), and on subjects' perceptions of the experimenter were investigated with a sample of 64 female subjects. Further, the emergence of these effects were studied under two distinct levels of subject monitoring by the experimenter (close: experimenter present plus recording of electrodermal activity; implicit: experimenter present only). Four female experimenters represented two levels of personal power. Dependent measures included drawing task time, scores on four graphic indices of anxiety, and interpersonal and personal power ratings. Finally, subjects ratings of drawing difficulty for the three stimulus objects were obtained.

High experimenter personal power was found to have both an enhancing and deleterious effect on drawing performance. Most strikingly, it sharply reduced drawing time on the female figure. Close monitoring by the experimenter reduced overall drawing time and the amount of detail on the female figure. The female figure was also rated as more difficult to draw than the male figure. Subjects' perceptions of the experimenters' of personal

power corresponded with the intended manipulation and was not affected by monitoring condition. No differences emerged in interpersonal ratings between the subject groups.

The cluster of results pertaining to the female figure seem to support the premise that figure drawings elicit self-projection. Possible implications of this study's results for clinical assessment are discussed.

ACKNOWLEDGMENTS

The completion of this document represents the culmination of a long journey. Along the way, my person and my work have benefited immeasurably from the assistance, encouragement, example, care and direction of many significant people.

Dr. Joseph Reyher, the chairman of both my thesis and dissertation committees, was most influential in the development of my identity as a researcher. How often he restored clarity to my mind and enthusiasm to my efforts. By his example he taught me dedication, flexibility, and pride. Perhaps most typically, though, he taught me to welcome the challenge of unexpected results.

The other dissertation committee members also contributed importantly to my progress. Dr. Norman Abeles' keen awareness of ethical issues, and Dr. Robert Caldwell's regard for quality workmanship and the application of research, greatly enriched my research training. In addition, I appreciate the generous encouragment and suggestions by which they facilitated the completion of this project. Although Dr. Charles Hanley joined the committee during the later stages of the project, he nonetheless brought considerable interest and energy to the task, and this document improved as a result.

With affection and sadness, I remember Dr. Terry Allen who taught me most everything I know about statistics, and who died before this project was completed. I carry the memory of the last day of the three courses he taught our class; he was strumming a guitar, grinning broadly, and chuckling in that inimitable raspy voice.

I owe the literal existence of this document to the generousity of two colleagues. Dr. Harold Bush granted me the use of his personal computer, and William Bradley taught me the art of wordprocessing.

It has been the enduring love, care and support of my parents, Don and Charlotte Hamernik, that made a journey such as this one even conceivable. Long before I set foot in an academic hall, they were nurturing interest and curiosity in the world around me, fostering creativity, promoting sensitivity, and encouraging achievement. As my first two teachers, they were outstanding. As beloved friends, they are invaluable.

There is one last person to acknowledge, Dan O'Grady, the one who participated in each anguish and victory along the way. His comfort and exhortations never failed to revitalize me; his confidence was stronger than my doubts; and his humor sustained me through even the most trying moments. How well loved I have been by him.

To each of these important people, I offer my heartfelt gratitude.

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INTRODUCTION

In the field of diagnostic assessment, projective tests have long been used to elicit important information about a client's psychological functioning. While clinical wisdom plays a large role in the interpretation of projective material, it is research with projectives that affords the scientific foundation on which clinical interpretation rests. Research into the relationship of anxiety to projective tasks is an example of how laboratory study enhances clinical understanding. Work by Reyher and his associates, described below, has indicated that the anxiety manifested by a subject completing a projective task may have three sources: intrapsychic, interpersonal, and task demand. Efforts to clarify these different sources of anxiety are valuable in that they help correct a tendency many clinicians have to overlook the effect of the interpersonal situation and the task demands on projective test results.

In 1959 Reyher initiated this line of research with a focus on figure drawing tasks. He proposed that drawings of human figures could be compared to a relatively neutral and common figure of equal difficulty. The anxiety manifested in the human drawing could then be separated and attributed to two sources: (a) the testing situation which would

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affect the human and neutral equally, and (b) intrapsychic conflict which would affect only the human figures. Reyher selected an automobile as the neutral figure. Thus, if an automobile drawing has fewer graphic indices of anxiety than the human figure drawings, the clinician has an objective basis for formulating psychodynamic hypotheses to account for these differences.

Handler and Reyher (1964) investigated the possibility that the level of difficulty of a drawing might be an influencing variable. They found, using the method of paired comparisons, that the automobile was judged to be as difficult to draw as the human figure. They also found evidence for the two sources of anxiety. Male, female, and automobile drawings were obtained from the same male subjects under closely monitored (high anxiety) and unmonitored (low anxiety) conditions. Seventeen indices of anxiety for the drawings from the two conditions were compared. Individual drawing style and ability variables were eliminated by using the subject as his own control. As hypothesized, there was a differential increase in the number of indices of anxiety for the closely monitored condition which significantly distinguished the closely monitored and unmonitored drawings. For the automobile drawings, 5 indices significantly differentiated the closely monitored from unmonitored condition; for the human drawings, 15 indices for the male and 11 for the female significantly differentiated conditions. Handler and Reyher

concluded that the increase in graphic indicators for the automobile reflected anxiety stemming from the testing situation itself, whereas the increase for the human figure drawings, beyond the increase for the automobile, reflected intrapsychic conflict which was exacerbated by the closely monitored condition.

A second study by Handler and Reyher (1966) provided additional support for Reyher's hypothesis. Human and neutral figure drawings were obtained from 96 male subjects. Again, 13 of 18 graphic indices significantly differentiated both the male and female drawings from the automobile. In addition, Handler and Reyher demonstrated that human figure drawings were characterized by more spontaneous skin response activity (electrodermal activity - EDA) than the automobile drawing. A continuous EDA record was obtained while subjects completed their drawings. Analysis of both the EDA frequency and mean conductance revealed significant differences between all three drawings. The female drawing yielded the highest level of physiologically defined anxiety while the automobile drawing yielded the lowest.

Then in 1981, Roach successfully replicated the 1964 study using both male and female subjects. Only 2 graphic indices significantly discriminated between the high anxiety (experimenter present) and low anxiety (experimenter absent) conditions for the automobile; six indices significantly discriminated conditions for the same sex person, however, and 7 did so for the opposite sex person. Thus, Roach

concurred with Handler and Reyher that the increase on the graphic indices produced by the automobile drawing task reflected the anxiety provoked by the testing situation, and the increase produced by the human figure drawing task reflected psychic anxiety exacerbated by experimenter presence.

Roach also monitored subjects' EDA mean conductance. Although this variable did not produce a significant main effect for the experimenter present/absent factor, it did produce an intriguing pattern of interactions. Roach interpreted these results in terms of the nature of the testing situation anxiety experienced by the subject. He proposed that subjects' anxiety was interpersonally-oriented in the experimenter present condition, and performance-oriented in the experimenter absent condition.

Results from a study by Hamernik (1985) also suggest that a major component of subjects' testing situation anxiety (when the experimenter is present) is interpersonal in nature. Forty-eight males and forty-eight females produced male, female, animal, and automobile drawings in the presence of either a male or female experimenter. Subjects also produced TAT-type stories and wishes for each of their drawings. One of the more intriguing findings was that subjects with the female experimenter spent significantly less time completing all three tasks -- drawings, stories, and wishes. Further, one of the graphic indices, line discontinuity, significantly discriminated

between experimenters; subjects with the female experimenter produced significantly more discontinuous lines than did subjects with the male experimenter. Discontinuous lines seem to suggest a hurried performance, and as such are consistent with the time results.

Roach (1981) had also obtained significant results related to time. In his study, it was the subjects in the experimenter present condition who spent significantly less time on their drawings. These were the same subjects that Roach described as interpersonally anxious. Handler and Reyher (1964) had originally contended that a hurried performance reflected task or testing situation anxiety: "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" (p. 262). Thus it could be proposed that since the subjects with the female experimenter in Hamernik's study hurried to complete their tasks, they were more interpersonally anxious than the subjects who did not hurry with the male experimenter.

To complicate matters further, Hamernik also found significant differences in experimenter-subject interpersonal ratings. At the end of the experimental session, each subject rated his/her experimenter on four qualities: consideration, respectfulness, friendliness, and likableness. The experimenter likewise rated the subject on the same four qualities plus cooperation. Subjects rated

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consistent with the time results.

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related to time. In his study, it was the subjects in
extraversion/present condition who spent significantly ... [illegible] ...
time on their drawings. Those were the same subjects that
Boren described as impersonally anxious. Similar to
Boring, Boren also originally conceived that a buried
performance reflected task or testing situation ... [illegible] ...
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the female experimenter significantly more likable than the male experimenter. In turn, the female experimenter gave her subjects significantly higher ratings on four of the five qualities. The one exception was the quality of cooperation for which the two experimenters' ratings did not differ.

Summarizing these experimenter related findings, then, it appears that the subjects with the female experimenter hurried to complete their tasks, yet also rated their experimenter as more likable, and she rated them more considerate, respectful, friendly, and likable.

An explanation for these results does not readily emerge from previous figure drawing research. Reviewing studies that have used two or more experimenters for a figure drawing task produces few significant findings related to the experimenter or sex of experimenter variables. Star and Marcuse (1959) compared three groups to determine if different experimenters or the length of time between testing sessions would affect performance. No differences between the groups were found. It should be noted, however, that the figure drawing tasks were administered in a group setting which could attenuate any experimenter induced stress or anxiety.

Holtzman (1952) tested the impact of different experimenters, sex of experimenter, and sex of subject on five graphic indices of anxiety. Again, none of the variables produced significant differences. In contrast to

[illegible] the subjects significantly higher ratings on both of the two qualities. The one exception was the quality of cooperation for which the two experimenters' ratings were not [illegible].

Summarizing these results briefly, then, it appears that the subjects with the female experimenter behaved in accordance with the [illegible] hypothesis, and also rated their experimenter as more likable, and also rated them more considerate, cooperative, friendly, and like me.

An explanation for these results does not readily emerge from previous literature dealing with [illegible]. Reviewing studies that have used two or more experimenters for a figure drawing task produces [illegible] relative to the experimenter or sex of experimenter variables. [illegible] compared later groups to determine if [illegible] experimenters or the length of time between testing sessions would affect performance. No differences between the groups were found. It should be noted, however, that the figure drawing tasks were administered in a group setting which could [illegible] any experimenter induced stress or anxiety.

Holtzman [illegible] tested the impact of different [illegible] experimenters, sex of experimenter, and sex of subject on two projective indices of anxiety. Among none of the variables produced significant differences. In contrast,

the Hamernik study, however, the graphic index of line discontinuity was not included in Holtzman's evaluation.

Roach (1981), however, tested the effects of different experimenters (3 males and 3 females); he uncovered several significant differences attributable to individual experimenters, but was unable to identify the source of these differences.

Although the Roach and Hamernik studies are among the first in figure drawing research to uncover experimenter effects, the effect the experimenter can have on results has long been a research concern in psychology. More than 20 years of work have made Rosenthal an authority on the phenomenon of experimenter effects. In an early review, Rosenthal (1964) organized reported experimenter effects into three catagories: experimenter attributes, experimenter modeling effects, and experimenter expectancy effects. The experimenter attributes included such characteristics as sex, race, religion, status, likability, warmth, hostility, authoritarianism, and intelligence. Rosenthal later (1966, 1976) subdivided the attributes category, distinguishing between bisocial attributes (e.g., sex, age, race) and psychosocial attributes (e.g., warmth, hostility, likability).

Applying this perspective to the Hamernik study, one could question whether the male and female experimenters differed substantially in some important attribute(s). The most obvious attribute is sex; but the earlier figure

drawing studies produced no differences on the sex of experimenter variable. Therefore, consideration of other attributes may be more fruitful.

A helpful framework for examining psychosocial attributes is provided by the concept of personal power. Personal power, as reviewed by Gavrilides (1980), refers to the constellation of resources, properties, attributes or characteristics of an individual which are external in nature (discoverable either through observation or biographical information), and which create positive conceptions in others. The theoretical and experimental work on personal power is imbedded in the massive behavioral science literature on power. Heider (1958) defined an individual's power as the ability to influence the social and physical environment of another person. Such power may derive from personal characteristics or a person's worldly possessions. Wilkins and deCharmes (1962) gave experimental credibility to the existence of the two sources of power, designating them "internal" and "external." They described internal power as "accruing to the individual *qua* individual. This type of power is perceived by others through the individual's personal mannerisms, traits, and expressed values" (p. 440). External power they defined as "accruing to the individual in accordance with the positions the individual holds and his possession of societally valued material objects or experiences" (p. 440).

Minton's (1967) discussion of power as a personality

construct further delineated the sources of power an invididual may tap. "Interpersonal" power, according to Minton, stems from an individual's interaction with others; "organismic power" derives from intrinsic characteristics and abilities of the individual; and "institutional power" is based on sources that are extrinsic to the individual and reside in the individual's social environment.

An important aspect of any personal attribute is its stability. Minton (1972) addressed this issue in terms of personal power: An individual's placement along a continuum of power represents a personal attribute which is relatively consistent across situations" (p. 105). A study by Goldberg (1978) confirmed that persons tend to view the behavior of others as caused by underlying dispositions and therefore as relatively consistent.

Much research has been done on various attributes and characteristics that could be subsumed under Minton's three sources of power. For example, eye contact and speech occur during an individual's interaction with others and therefore qualify as sources of interpersonal power. High eye contact has been associated with greater sincerity (Kleinke, Bustos, Meeker, & Staneski, 1973), friendliness, self-confidence, naturalness, maturity (Kleck & Nuessle, 1968), and social skill (Cherulnik, Neely, Flanagan & Zachau, 1978). Low eye contact, however, has been associated with increased self-abasement (Libby & Yaklevich, 1973), as well as defensiveness and indifference (Kleck & Nuessle, 1978).

Powerful speech has been shown to result in higher ratings of attractiveness and credibility (Erickson, Lind, Johnson, & O'Barr, 1978), competence, (Bradac, Hemphill, & Tandy, 1981), and sociointellectual status (Bradac & Mulac, 1984). High eye contact and fluent speech together produced perceptions of high competence, dynamism, and trustworthiness (Tachell, Vandenberg, & Lerman, 1983).

Some of the qualities that Minton (1967) included in the organismic power catagory are skill, intelligence, enlightenment, education, and physical power. Physical attractiveness would also seem to belong in this category, and the voluminous body of research on attractiveness clearly indicates it is a powerful attribute. It has been demonstrated that attractive people are expected to possess more socially desirable traits and be more successful (Dion, Berscheid, & Walster, 1972; Maruyama & Miller, 1981). Their work is also rated more favorably (Landy & Sigall, 1974), and they are considered to have greater *savoir faire* and be more likable than less attractive people (Goldman & Lewis, 1977).

Among the attributes Minton listed under institutional power are status, moral standing, and wealth. Regarding status, Heider (1958) wrote, "social and legal status often affects what a person can and cannot do by determining the strength of the environmental forces" (p. 95). Eagly (1983), reviewing gender and social influence, comments on the interpersonal consequences of status: "Within

appropriate limits, people of higher status are believed to have the right to make demands of those of lower status, and people of lower status are expected to comply with these demands" (p. 971). Attire often reflects one's social standing, and Schneider (1974) demonstrated that the well-dressed person uses more positive self-presentations. Further, Solomon and Schopler (1982) found that clothing decisions strongly correlate with the trait of public self-consciousness. Finally, in a study by Barnes and Rosenthal (1985), well-dressed experimenters were more positively perceived by their subjects than poorly dressed experimenters.

Returning to the experimenter effects produced by the Hamernik study, it becomes important to ask whether the two experimenters differed in personal power attributes. Post-hoc reflection suggests that on the dimensions of speech, attire, physical attractiveness, and socioeconomic status, there existed clear differences; the female experimenter spoke more fluently, was more attractive and consistently better dressed, and came from a higher SES family. Based on this post-hoc assessment, it appears that the female experimenter possessed greater personal power, and as such, could have represented a more stressful interpersonal situation for her subjects. They had to interact with someone who seemed especially important and poised -- a situation which could well have heighted any of their interpersonal insecurities. Thus they might have

appropriate. Harris, Lord, and Jones [illegible] [illegible]
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understandably hurried to complete their tasks and leave the uncomfortable or anxiety-provoking situation.

In order for this personal power interpretation to be viable, it must address the fact, discussed earlier, that previous tests of experimenter effects on figure drawings were largely non-significant. It may be that substantially higher experimenter personal power is a necessary but not sufficient condition for the emergence of reduced time and enhanced interpersonal ratings. Subjects may also have to be in a state of heightened sensitivity to their interpersonal situation; they would then be primed to be aware of their experimenter's personal power. In the Hamernik study, such a state of heightened sensitivity may have been induced by the EDA monitoring that was done while subjects completed their drawings. This situation would then correspond to one of Rosenthal's (1976) three classes of outcomes produced by experimenter attributes: the interaction of experimenter effects with treatment conditions.

Roach first proposed in 1981 that the procedures related to EDA monitoring are likely to increase self-awareness. He also indicated that this externally provoked self-awareness fits well into the framework of Duval and Wicklund's theory of objective self-awareness (1972; Wicklund, 1975). According to Duval and Wicklund's theory, conscious attention can be directed toward two possible objects: toward the self or toward objects or events in the

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According to Duval and Wicklund's theory, consciousness
attention can be directed toward two possible objects:
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environment. Symbols of the self, such as a mirror or a tape recording of the participant's voice, will focus a person's attention inward on the self, thereby creating objective self-awareness. The self-focused attention will gravitate toward whatever dimension of the self is most salient at the time. A person will then engage in a process of self-evaluation to determine the degree of discrepancy between attainment and aspiration on that dimension. If the discrepancy is positive, a person will experience positive affect and will seek out situations that stimulate objective self-awareness. If the discrepancy is negative, however, 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 discrepancy reduction. This usually means making special efforts to bring one's present condition into line with the aspiration.

Up to this point, the evaluation of one's performance has been based on internal standards. Reyher (1986) has argued, however, that when such an evaluation occurs in a social context, it quickly incorporates interpersonal data. So, a person in a state of objective self-awareness makes an evaluation of performance and then projects that evaluation into the interpersonal relationship. The now projected evaluation intensifies or diminishes (in the performer's mind) according to the status or power held by the other

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This interpersonal dimension of self-evaluation has been most thoroughly developed in the theory of self-presentation (Baumeister, 1982). Self-presentation, according to Baumeister, is "aimed at establishing, maintaining, or refining an image of the individual in the minds of others" (p. 3). One of the main motives for engaging in self-presentation is to cause an audience to react favorably to oneself. When attempting to please an audience, one's behavior is guided by the standards of the particular audience one faces. Thus, a person can act differently with different audiences, yet in each case be seeking a positive evaluation.

An integration of the objective self-awareness intrapersonal evaluation and the self-presentation interpersonal evaluation suggests the following explanation for the Hamernik experimenter effects: EDA monitoring induced a state of objective self-awareness in subjects. The dimension which subjects found particularly salient was most likely figure drawing performance. They then engaged in a process of self-evaluation to determine how well they were performing compared to their aspirations. For most people, figure drawing is a difficult task, and one that rarely meets aspired levels. Thus, most subjects probably experienced a negative discrepancy between performance and aspiration. Because this evaluation occurred in a social setting, subjects then projected their negative assessment into the experimenter-subject relationship and engaged in

[illegible]

self-presentational behavior.

Baumeister (1982) has noted that the experimenter consititutes a real and important public to the subject. Attempts to "please" the experimenter-audience would require sensitivity on the subject's part to the "standards" of the experimenter. Such standards could best be deduced, it would seem, from those experimenter attributes that contribute to personal power. The higher the personal power of the experimenter, the more the subject might expect the experimenter's standards to be difficult to attain; this would then intensify the projected negative evaluation.

Given a negative discrepancy, Duval and Wicklund (1972) have shown that a person will attempt to avoid the situation, often by hurrying away. This is certainly what the subjects with the assumed high personal power experimenter did, as evidenced by their lower time scores and higher line discontinuity scores. Furthermore, having a more demanding "audience," subjects with the higher power experimenter might well utilize more respectful, considerate and friendly behaviors to elicit a favorable evaluation. The experimenter, as the recipient of these extra efforts would, in turn, give the subject a higher rating on these same interpersonal qualities.

Returning to the studies by Star and Marcuse (1959) and Holtzman (1952), neither included procedures that would induce high objective self-awareness. So subjects would not be especially sensitized to the experimenter/subject

interpersonal situation and experimenter effects would not be expected to emerge. Roach (1981), however, used the same EDA monitoring equipment that was employed in the Hamernik study; his subjects can thus be considered to have been in a comparable state of objective self-awareness. Indeed, his subjects demonstrated sensitization to the experimenter, not only on the dimension of present/absent, but to individual experimenters. It is proposed here, therefore, that the dimension of personal power may account for experimenter differences in both the Roach and Hamernik studies.

In proposing that objective self-awareness leads to self-presentational behavior and results in greater sensitivity to experimenter personal power, one consideration remains: the issue of degree. Objective self-awareness theory does not address the issue of degree; either objective self-awareness occurs, or it does not (Wicklund, 1975). There are no provisions for variations in the intensity of experienced objective self-awareness. Roach's experimenter present/absent results suggest, however, that objective self-awareness can be experienced in degrees. All of his subjects were closely monitored by the EDA equipment; the paper tape recording of electrodermanl activity was assumed to function as the symbol of the self, provoking objective self-awareness.

At the same time, subjects were completing various task assignments while being monitored to some extent by their experimenter. When the experimenter was present in the room

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with the subject, the monitoring was implicit; the experimenter could observe the subject during the process of task completion. When the experimenter was absent, the monitoring was remote; the experimenter could only observe the subject's final products. In both conditions, however, the subject knew the experimenter could identify dthe drawing products as his or her own; there was no anonymity. The drawings themselves could therefore also function as symbols of the self, provoking objective self-awareness. Implicit experimenter monitoring could be expected, however, to provoke greater objective self-awareness than remote monitoring. In fact, Roach found that the addition of implicit or remote experimenter monitoring to subjects already in a state of objective self-awareness affected both time and graphic indicator results. This strongly suggests that objective self-awareness can occur in degrees, and, furthermore, is subject to experimental manipulation.

The purposes of this present study are (1) to test the effects of experimenter personal power on figure drawing tasks and subjects' perceptions of the experimenter; and (2) to determine whether these effects emerge differentially at distinct levels of subject objective self-awareness. In addition, Handler and Reyher's original (1964) paired comparisons test of drawing difficulty will be repeated. Using male subjects, they found that the male and automobile figures were considered to be equally difficult to draw. In this study, female subjects' evaluation of drawing

The purpose of this present study was to test the effects of experimenter personal power in hyper-dense tasks and subjects' perceptions of the experimenter to determine whether these effects cause differential distract levels on subject objective self-awareness and motivation. Hunter and Boyden's original [illegible] comparisons test of driving directions will be used. Using male subjects, it is found that the more distracted were more prone to [illegible] during this study, [illegible]

difficulty will be assessed.

HYPOTHESES

Hypothesis I. When in a state of objective self-awareness, subjects with a high personal power experimenter spend less time on their drawings than subjects with a low personal power experimenter.

Hypothesis II. When in a state of objective self-awareness, subjects with a high personal power experimenter demonstrate greater anxiety than subjects with a low personal power experimenter. Anxiety is operationally defined here in terms of graphic indices of anxiety.

Hypothesis III. When in a state of objective self-awareness, subjects rate a high personal power experimenter higher on interpersonal qualities than a low personal power experimenter.

Hypothesis IV. A high personal power experimenter rates subjects in a state of objective self-awareness higher on interpersonal qualities than a low personal power experimenter rates such subjects.

Hypothesis V. Experimenter personal power effects become more apparent the greater the subject's objective self-awareness.

Hypothesis VI. Female subjects consider an automobile as difficult to draw as a human figure.

Hypothesis II. When in a state of [illegible] self
awareness, subjects with a high personal power experimenter
spend less time on short duration [illegible] than
personal power experimenters.

Hypothesis III. When in a state of objective self
awareness, subjects with a high personal power experimenter
demonstrate greater anxiety than subjects with a low
personal power experimenter. Anxiety is operationally
defined here in terms of graphic indices of anxiety.

Hypothesis III. When in a state of objective self
awareness, subjects with a high personal power experimenter
differ on interpersonal qualities than a low personal power
experimenter.

Hypothesis IV. A high personal power experimenter is
subjected in a state of objective self awareness rates
interpersonal qualities than a low personal power
experimenter rates such subjects.

Hypothesis V. Experimenter personal power will
become more important the greater the subject's objective
self awareness.

Hypothesis VI. Female subjects consider an unknown
as difficult to rate as a known target.

METHOD

Subjects

Sixty-four female undergraduate students from summer session introductory psychology courses participated in this experiment. These subjects were volunteers who signed up on sheets posted in their classrooms for an experiment entitled, "Figure Drawings." Their reward for participating was two credit points which could be applied toward their final course grade.

The characteristics of summer session students sometimes differ from those of students in the regular academic terms. Demographic information was therefore obtained from each subject to determine the nature of the subject sample. Their ages ranged from 18 years to 30 years; the modal age was 21.0 years, and the mean was 21.5 years. Eighty-eight percent of the subjects were single, 9% were married, 2% were divorced, and 1% werw widowed. Subjects who had children comprised 9% of the sample. Their racial composition was 84% Caucasian, 13% Black, and 3% Chinese. Only one person in the sample had earned an advanced degree; all the rest were working towards their bachelor's degree. Finally, in respect to occupation, 56% were students only, 17% held part-time jobs on campus, 19% worked part-time in sales or food service, and 8% held more

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skilled part-time positions as secretaries or lab technicians.

Experimenters

Four female advanced psychology majors with an interest in psychological research served as experimenters. These four were chosen from among several women who interviewed for the position. Selection was made with the goal of obtaining the two highest personal power and the two lowest personal power women for experimenters. The experimenters were told that one purpose of the research was to determine the effect of interpersonal style. The two designated "high power" experimenters were therefore instructed to dress well and behave formally; the two designated "low power" experimenters were instructed to dress and behave casually. These instructions, in fact, merely gave the experimenters permission to dress and act as they had in their own interview.

Once the experimenters had been trained in the experimental procedures, they were each video-taped conducting the experiment with the same pseudo-subject. A group of 10 undergraduate women then viewed the tapes and rated each experimenter using the Personal Power Functions Profile (described below).

Apparatus

A Grass (model 5) six channel polygraph and Beckman electrodes (Ag/AgCl; 177cm^2) were used to record electro-dermal responses. The electrodes were filled with Beckman

electrolyte and attached to the medial phalanx of the second and third fingers of the nonpreferred hand. Skin resistance was continuously recorded on paper tape by the polygraph. This recorded data was not analysed in the present study, however, as the purpose of monitoring subjects' EDA was only to induce strong objective self awareness.

Instruments

The Personal Power Functions Profile (PPFP). This instrument was developed by Joseph Reyher and copyrighted in 1979. It is used to determine the degree or level and presence of 16 separate personal power functions related to: physical characteristics (attractiveness, height, stature, carriage), interpersonal skills (social *savior faire*, eye contact, speech, knowledge/ability/talent germane to interaction), personal-social attributes (socioeconomic status, personal fame, family fame, authority/occupation, education, attire), and personal characteristics (voice, expression of ideas). An individual can be rated on each item, on a one-to-five range of low-to-high power in terms of that item. Thus, the higher a person is rated, the more personally powerful he/she is considered to be.

Ten of these functions were utilized in the present study: attractivess, height, stature, *savior faire*, socio-economic status, attire, speech, eye contact, voice, and carriage. These ten were chosen on the basis of their applicability to the laboratory situation (see Appendix A).

Handler Draw-A-Person Rating Scales. Handler (1967)

Instruments

The Personal Power Functions Profile (PPFP). This instrument was developed by Joseph Bonior and copyrighted in 1979. It is used to determine the degree or level and presence of 10 separate personal power functions relative to physical characteristics, material resources, legal, economic, marriage, interpersonal skills (social service roles), contact, speech, location/mobility (client personne to interactions), personal attributes (socioeconomic status), personal fame, family ties, authority occupation, education, attire, and personal characteristics (voice, expression of ideas). An indication can be rated on each item, on a one to five range of low to high power in terms of that item. Thus, the higher a person is rated, the more personally powerful he/she is considered to be.

Ten of these functions were utilized in the present study: attractiveness, height, stature, service roles, economic status, attire, speech, are contact, voice, and carriage. These ten were chosen on the basis of their applicability to the laboratory situation. See Appendix A for Bonior Brum & Person Power Scales. Used in the

delineated twenty graphic indices of anxiety for rating human figure drawings. Four of these indices were used in this study: omissions, line discontinuity, vertical imbalance, and loss of detail. These particular indices were chosen because past work (Roach, 1984; Handler & Reyher, 1966) has shown them to be direct and uncomplicated indicators of anxiety. An additional reason for including the index line discontinuity is that it significantly distinguished experimenters in the Hamernik study.

Roach Draw-An-Automobile Rating Scale. Roach (1981) devised scales for rating automobile drawings on twelve graphic indices of anxiety. These scales were constructed so as to approximate Handler's (1967) scoring procedures for human figures. For the present study, three indices were chosen from the Roach manual: omissions, line discontinuity, and vertical imbalance. Roach did not define a loss of detail index for automobiles; because of congruence concerns this index was not applied to the automobile drawings.

Hamernik (1985) made some modifications in the scoring procedures in both the Handler and Roach scales. The intent was to increase the correspondence between the two scales. These same modifications were used in the present study. Further, Roach (1984) recommended changing the scoring scales for the line discontinuity and vertical imbalance indices. He believed that these indices could be made more sensitive by expanding the original zero-to-three scoring

scale to a zero-to-nine scale. Subjects' drawings in this study were therefore scored twice for both line discontinuity and vertical imbalance; once according to the original Handler scale, and once according to the expanded scale suggested by Roach (see Appendix B).

For each graphic index of anxiety, one pair out of four potential raters were trained using the modified scoring procedures. Before rating the experimental drawings, each pair of raters had to achieve an 80% agreement level on a set of 20 practice drawings. Once the pair met this criterion, they rated the entire set of experimental drawings on that index. The dependent variables used in the analysis were computed by averaging the two ratings on each drawing for each index; decimals were avoided by rounding down to the next whole number.

Interrater reliability was estimated for each of the four graphic indices of anxiety, including both the original scale and expanded scale versions of line discontinuity and vertical imbalance. The interrater reliability estimates were obtained by computing, from the entire data set, the Pearson product-moment correlations between raters on each graphic index for each drawing stimulus object (see Table 1). All of the correlations were above .80 and were therefore considered acceptable for research purposes.

Experimental Design

Subjects were randomly assigned first to either a high or low personal power experimenter. Following this,

discontinuously and verbal instructions, were given relating to the
original baseline scores, and were according to the [illegible]
scale suppressed by a push [illegible] Appendix B.

For each practice trial of accuracy, one point out of the
potential points were lowered during the practice [illegible]
procedures. Before taking the experimental drawings, each
part of testers had to achieve an 80% performance level on one
set of 10 practice drawings. Once the part met the
criterion, they started the entire set of experimental
drawings on that time. The dependent variables
analysis were computed by averaging the two ratings on each
drawing for each index; decimals were dropped by rounding
down to the next whole number.

Interrater reliability was determined for each of the
four response indexes of quality, including both the overall
scale and expanded scale versions of the descriptors.
Vertical inspection. The interrater reliability values
were obtained by computing, from the spline coefficient, the
Pearson product moment correlations between the two sets of
graphic index for each drawing attempts object [illegible]
in. All of the correlations were above .80 and were
therefore considered acceptable for research purposes.

Experimental Design

Subjects were randomly assigned first to either a low
or low personal [illegible] experimental. Following the

Table 1

Pearson Correlations Between Raters
on Graphic Indices of Anxiety
for Each Drawing Stimulus Object

Index	Stimulus Drawing Object		
	Male	Female	Auto
Omissions	.96	.93	.97
Line Discontinuity (original scale)	.94	.91	.89
Line Discontinuity (expanded scale)	.88	.86	.84
Vertical Imbalance (original scale)	.90	.91	.88
Vertical Imbalance (expanded scale)	.84	.88	.83
Loss of Detail	.88	.95	N/A

subjects were randomly assigned to either a close monitoring condition (EDA monitoring plus experimenter presence) or an implicit monitoring condition (experimenter presence only). This resulted in four possible conditions: high experimenter personal power -- close monitoring; low experimenter personal power -- close monitoring; high experimenter personal power -- implicit monitoring; and low experimenter personal power -- implicit monitoring. Provisions were made for an equal *n* in each condition.

All subjects were asked to draw three figures (stimulus objects): male, female, and automobile. There were six possible orders for these three drawings; one of the six was randomly assigned to each subject, again with a provision for an equal *n* for each order.

Procedure

The subject was greeted by her assigned experimenter and ushered into an eight foot square room containing a large desk with chair, the polygraph machine, a swivel chair, and a small table with a supply of paper and pencils atop it. For subjects in the EDA monitoring condition, the electrode paraphranalia was also arranged on the small table. The subject sat at the large desk, with her back to the polygraph. The experimenter sat in the swivel chair to the side of the subject so as to allow her to face the subject when giving instructions, and then to turn back to the table or the polygraph while the subject completed the various tasks.

Preliminary Procedures for the close monitoring condition. Once the subject was seated, the experimenter explained, "For this experiment I will be attaching two electrodes to your fingers. They will not hurt you at all. They will simply measure certain aspects of your physiology which interest us. I will also be asking you to draw some pictures and fill-out some questionnaires." The experimenter then answered any questions pertaining to the procedures; questions about the nature or purpose of the study were deferred until the completion of all experimental tasks. The subject then was asked to read and sign an informed consent form. The electrodes were then attached, the polygraph calibrated, and the subject's resistance level allowed to stabilize.

Preliminary Procedures for the implicit monitoring condition. Once the subject was seated, the experimenter explained, "For this experiment, I will be asking you to draw some pictures and to fill-out some questionnaires." The experimenter then answered any questions pertaining to the procedures; questions about the nature or purpose of the study were deferred until completion of all experimental tasks. The subject was then asked to read and sign an informed consent form.

Common Procedures for all conditions. After the preliminaries were completed, the subject was given a clean sheet of paper and a sharpened #2 pencil and told, "On this first sheet of paper I will ask you to draw a series of six

geometric figures. First draw a circle; now a square; a rectangle; an oval; a star; and a cube." These initial drawings served as a warm-up task. When they were completed, the experimenter collected the used paper and pencil and provided fresh ones. Then she said, "Now draw a male person (or a female person or an automobile, depending on the assigned order). Please do not draw an incomplete or stick figure. Tell me when you are finished." From a digital clock on her table, the experimenter noted the starting and finishing time for that task. The experimenter then collected those drawing materials, and again provided fresh ones. The procedure was repeated two more times for the two additional drawings. Any questions the subject asked about the task were answered in a non-directive manner.

When the drawings were completed, the experimenter handed the subject a brief form asking her to rate the comparative difficulty of the male, female, and automobile drawings (see Appendix C). After collecting this form, the experimenter handed her a four-item interpersonal rating form and an envelope. The experimenter explained, "This scale asks how you feel about me. Please answer it honestly. When you have finished, seal it in the envelope and place it in that box in the corner. I will not see it." The experimenter then turned and completed a separate five-item interpersonal rating form on her impressions of the subject (see Appendix D). When both had finished, the

manner.

experimenter handed the subject a copy of the PPFP and another envelope. The experimenter explained, "This scale asks for your impressions of me. Again, please answer it honestly. I will not see this one either. When you have finished, seal it in the envelope and place it in that same box." The PPFP was used here to determine whether subjects really experienced their experimenters as having high or low personal power.

After the subject had deposited the envelope in the box, the experimenter in the close monitoring condition turned off the polygraph and removed the electrodes from the subject's fingers. All subjects were then offered a short instructional session on the experiment; this included an information sheet on figure drawings and the opportunity for the subject to ask any questions she might have about the experiment. Lastly, each subject was thanked for her participation.

[illegible] Type PUFF was used more to determine whether
really experienced effects commensurate with having the
personal power.

After the subject had departed the [illegible]
box, the experimenter in the [illegible] monitoring room
turned off the power and removed the electrodes
subject's fingers. All subjects were then debriefed in
instructional session on the experiment. The
information about the [illegible] and the
the subject to ask questions [illegible]
experiment. Lastly, each subject was thanked for
participation.

RESULTS AND DISCUSSION

In order to verify the existence of two levels for the independent variable of experimenter personal power, the PPFP scores for the four experimenters, given by the 10 video-tape raters, were subjected to a one-way analysis of variance. A significant effect emerged, $F(3, 36) = 100.2$, $p < .001$. Tukey's method for testing the experimenter means revealed that the scores for the two designated high power experimenters were significantly higher than the scores for the two designated low power experimenters. Further, there were no differences between the two score means for the high power experimenters (37.7 and 38.6) nor between the two score means for the low power experimenters (30.5 and 31.2). The use of experimenter personal power as an independent variable with two levels was therefore justified.

A three factor design with repeated measures was used to evaluate the influence of the independent variables and their interactions on the following dependent measures: drawing time, omissions, line discontinuity, and vertical imbalance. Experimenter personal power (P) and monitoring (M) were the between-subjects factors, and drawing stimulus object (O) was the within subjects factor (see Table 2). These factors were completely crossed; the within-groups factor, subjects (S), was nested with the combination of

Table 2

Specification of the Analysis of Variance Design
Including Degrees of Freedom
and Error Terms
For the Dependent Variables:
Time, Omissions, Line Discontinuity,
and Vertical Imbalance

Source	Symbol	DF	Error Term
Between Subjects			
Exp. Personal Power	P	1	S/PM
Monitoring	M	1	S/PM
Exp. Personal Power by Monitoring	PM	1	S/PM
Subjects	S/PM	60	none
Within Subjects			
Drawing Stimulus Object	O	2	O/S/PM
Exp. Personal Power by Stimulus Object	PO	2	O/S/PM
Monitoring by Stimulus Object	MO	2	O/S/PM
Exp. Personal Power by Monitoring by Stimulus Object	PMO	2	O/S/PM
Stimulus Object by Subjects	O/S/PM	120	none

experimenter personal power and monitoring variables (a specific subject cannot have both the high and low power experimenter; nor can she be in both the close and implicit monitoring conditions).

A similar three factor design was used to evaluate the dependent variable loss of detail. However, since this variable applied only to the male and female drawings, the stimulus object (O) factor had only 2 levels which reduced its degrees of freedom (see Table 3).

A two factor design was used to evaluate the influence of the independent variables and their interactions on the following dependent measures: experimenter consideration, experimenter respectfulness, experimenter friendliness, experimenter likableness, subject consideration, subject respectfulness, subject friendliness, subject likableness, subject cooperation, and finally, experimenter PPFP score. Again, experimenter personal power (P) and monitoring condition (M) were the between-subjects factors; there was no within-subjects factor. These two factors were completely crossed, and the within-groups factor, subjects (S), again was nested within the combination of experimenter personal power and monitoring variables (see Table 4).

A summary table of the analysis of variance for each of the seventeen dependent variables can be found in Appendix E.

Finally, to determine whether female subjects consider the automobile as difficult to draw as a human figure, the

Table 3

Specification of the Analysis of Variance Design
Including Degrees of Freedom
and Error Terms
For the Dependent Variable:
Loss of Detail

Source	Symbol	DF	Error Term
Between Subjects			
Exp. Personal Power	P	1	S/PM
Monitoring	M	1	S/PM
Exp. Personal Power by Monitoring	PM	1	S/PM
Subjects	S/PM	60	none
Within Subjects			
Drawing Stimulus Object	O	1	O/S/PM
Exp. Personal Power by Stimulus Object	PO	1	O/S/PM
Monitoring by Stimulus Object	MO	1	O/S/PM
Exp. Personal Power by Monitoring by Stimulus Object	PMO	1	O/S/PM
Stimulus Object by Subjects	O/S/PM	60	none

Table 4

Specification of the Analysis of Variance Design
Including Degrees of Freedom
and Error Terms
For the Dependent Variables:
Experimenter and Subject Interpersonal Ratings
and Experimenter PPFP Score

Source	Symbol	DF	Error Term
Between Subjects			
Exp. Personal Power	P	1	S/PM
Monitoring	M	1	S/PM
Exp. Personal Power by Monitoring	PM	1	S/PM
Subjects	S/PM	60	none

method of paired comparisons was used (see Appendix F).

Manipulation Check

The results from the analysis of the Personal Power Functions Profile indicated that the manipulation of experimenter personal power was successful. The two high power (hereafter referred to as HP) experimenters received significantly higher PPFP summary scores from subjects than the two low power (hereafter referred to as LP) experimenters, $F(1, 60) = 19.3$, $p < .001$. The mean sum score for the HP experimenters was 37.4, while the LP experimenters mean sum score was 34.0.

Additional analysis of the PPFP ratings showed significant differences between HP and LP experimenters on seven of the profile's ten items. The HP experimenters received higher scores on attractiveness ($F(1, 60) = 21.4$, $p < .001$); *savoir faire* ($F(1, 60) = 4.8$, $p < .05$); attire ($F(1, 60) = 16.3$, $p < .001$); speech ($F(1, 60) = 17.7$, $p < .001$); carriage ($F(1, 60) = 19.6$, $p < .001$); and eye contact ($F(1, 60) = 16.8$, $p < .001$). On only one item did the LP experimenters receive higher scores: stature, $F(1, 60) = 8.8$, $p < .01$. The other three power functions, height, socioeconomic status, and voice, produced no experimenter differences.

Hypothesis I

The results provided some support for the prediction that subjects with the HP experimenter would spend less time on their drawings than subjects with the LP experimenter.

Analysis of time scores produced two main effects: one for monitoring condition ($F(1, 60) = 6.2$, $p < .02$), and another for stimulus object ($F(2, 120) = 8.9$, $p < .001$). Closely monitored subjects spent significantly less time on their drawings (155 secs) than implicitly monitored subjects (231 secs). Testing the stimulus object means by Tukey's method revealed that the average time spent on the female drawings (227 secs) was significantly greater than the time spent on either the male drawing (193 secs) or the auto drawing (159 secs).

These findings are qualified, however, by a three-way interaction between the three independent variables: experimenter personal power, monitoring condition, and stimulus object, $F(2, 120) = 3.4$, $p < .05$. Figure 1 presents this complicated interaction. In terms of Hypothesis I, high experimenter personal power most clearly reduces drawing time for the female figure. The male and auto stimulus objects apparently did not provoke the objective self-awareness/self-presentation evaluation process in the same way that the female stimulus object did. This result is especially interesting given that the female stimulus is the same gender object for the subjects in this study, and represents the same gender as the experimenter. Drawing time is understood to have an inverse relationship to testing situation anxiety; decreasing time reflects increasing anxiety. This result suggests, therefore, that the presence of a high power experimenter changes the

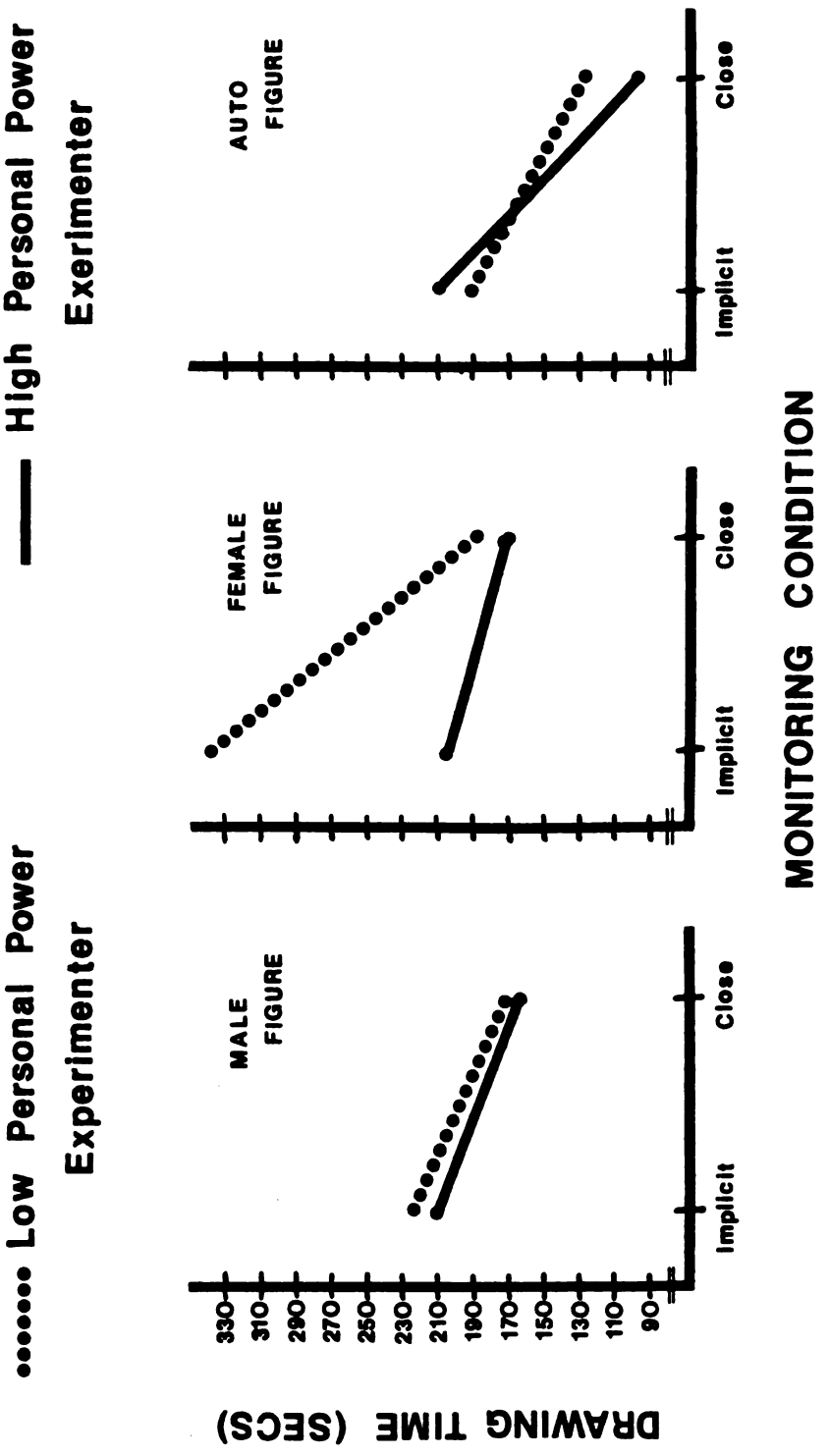


Figure 2. Experimenter Personal Power by Monitoring Condition by Stimulus Object Interaction for Drawing Time

testing situation for the same gender drawing task by enhancing subject anxiety.

The graphs in Figure I also seem to indicate that close monitoring reduces drawing time. However, the amount of time reduction appears to vary with stimulus object and experimenter personal power. On the male drawing, the reduction seems fairly parallel for the experimenter personal power variable. On the female drawing, the reduction in time related to monitoring appears greatest for subjects with the LP experimenter. The opposite seems true for the auto drawing: close monitoring seems to have resulted in greater time reduction for subjects with the HP experimenter.

The finding that closely monitored subjects spent the least amount of time on their auto drawing replicates the 1985 Hamernik investigation that subjects (who were all closely monitored) spent significantly less time on the auto drawing than on either human drawing. This may reflect a lack of familiarity with the task, and may be particularly relevant for female subjects. It may be that most people, expecially females, have rarely "practiced" drawing automobiles when they doodle or sketch. By contrast, many people have "practiced" doodling or sketching human figures. Thus, subjects in an enhanced state of objective self-awareness may find the negative discrepancy between performance and attainment on this unfamiliar drawing task particularly large; as Duval and Wicklund (1972) predict,

this seems to have resulted in an attempt to flee by hurrying.

Perhaps the most intriguing time result is the strikingly greater amount of time implicitly monitored subjects with the LP experimenters spent on their female drawing: over 110 seconds more than subjects in any other condition. This suggests that in the most relaxed of the testing situations, females become highly absorbed in their same gender drawing. Such self-investment would be consistent with a basic premise of projective drawings -- that same gender figures facilitate self-projection. Further discussion of this finding can be found in the general discussion section.

Hypothesis II

The results provided some support for the prediction that subjects with the HP experimenter would demonstrate greater anxiety (as measured by graphic indexes) than subjects with the LP experimenter.

Omissions. The graphic index of omissions produced a significant interaction between experimenter personal power and stimulus object, $F(2, 120) = 8.2$, $p < .001$. Subjects with the HP experimenter made significantly less omissions on both their male ($t(32) = 3.1$, $p < .01$) and female ($t(32) = 2.7$, $p < .01$) drawings than subjects with the LP experimenter; there were no differences in omissions for the auto drawing. This finding is the direct opposite of what was expected: on this index, subjects with the HP

experimenter appear less anxious than subjects with the LP experimenter. An alternate explanation, however, might be that subjects with the HP experimenter were more careful about completing their drawings -- making sure all the necessary body parts were included. In this case, the HP experimenter may have spurred subjects to a higher performance level.

Line Discontinuity. Analysis of the line discontinuity index scores (according to the original scale) revealed a main effect for experimenter personal power, $F(1, 60) = 6.6$, $p < .02$. Subjects with the HP experimenter drew significantly more discontinuous lines than subjects with the LP experimenter. The expanded scale scores for the line discontinuity scores demonstrated the same effect, $F(1, 60) = 5.2$, $p < .03$. Since discontinuous lines are seen as a reflection of hurried performance, this result suggests that subjects with the HP experimenter were more anxious to complete their drawings. The line discontinuity produced a similar finding in the earlier Hamernik study; subjects with the assumed higher power experimenter drew significantly more discontinuous lines than subjects with the assumed lower power experimenter. This replication strongly suggests that the line discontinuity index is able to distinguish between levels of experimenter personal power.

In addition, the expanded scale produced a stimulus object main effect, $F(2, 120) = 4.7$, $p < .02$. Testing the three stimulus object means using Tukey's method showed that

subjects had significantly more discontinuous lines in their male drawing than in their auto drawing. This suggests that subjects were more anxious to complete their male drawings than their auto drawings, even though the actual amount of time spent on each stimulus object did not differ.

Vertical Imbalance. The vertical imbalance index scores based on the original scale produced no significant results. Scores based on the expanded scale, however, did reveal a main effect for stimulus object, $F(2, 120) = 7.8$, $p < .01$. Further analysis with Tukey's method showed that both the male and female drawings were significantly more unbalanced than the auto drawing. Again, this replicates the results of the earlier Hamernik study. The vertical imbalance index seems to reliably distinguish between the neutral stimulus object and the human stimulus objects; an argument can therefore be made that vertical imbalance reflects intrapsychic rather than interpersonal situation anxiety.

Loss of Detail. Finally, the loss of detail index produced a significant interaction between monitoring condition and stimulus object which will be discussed under Hypothesis V.

To summarize the results pertaining to Hypothesis II, then, subjects with the HP experimenter made fewer omissions on their male and female drawings, and drew more discontinuous lines overall than their LP experimenter counterparts.

Hypotheses III and IV

The results provided no support for either prediction concerning interpersonal ratings; not for the expectation that in a state of objective self-awareness, subjects would rate a HP experimenter higher on interpersonal qualities than a LP experimenter; nor for the expectation that a HP experimenter would rate subjects in a state of objective self-awareness higher on interpersonal qualities than a LP experimenter.

Analysis of the nine interpersonal ratings (4 ratings of experimenters by subjects and 5 ratings of subjects by experimenters) produced no significant differences for experimenter personal power. This lack of significant findings across the board was most unexpected. In reviewing the procedures for the previous Hamernik study and for the current study, one major difference emerges. Subjects in the previous study (male and female) not only produced figure drawings, they also made up stories and wishes for each of their drawings. These extra tasks increased the amount of interaction between subject and experimenter considerably. As in the current study, subjects and experimenters completed their interpersonal ratings after all the projective tasks were finished. Thus, although the rating forms were identical in the two studies, the ratings were based on quite different quantities of interpersonal interaction. Perhaps subjects and experimenters need more time than was afforded by the current study to gain

sufficient interpersonal data for differences to emerge in the ratings.

Hypothesis V

The results provided minimal support for the prediction that experimenter personal power effects would become more apparent the greater the subject's objective self-awareness. Monitoring condition did significantly affect subject performance on the variables of time (as part of the complicated three-way interaction discussed under Hypothesis I), omissions, and loss of detail. For both graphic indices, however, monitoring condition interacted with stimulus object rather than experimenter personal power.

First, on the omissions index, monitoring condition interacted significantly with stimulus object, $F(2, 120) = 4.2$, $p < .02$. Here, closely monitored subjects made significantly more omissions on their auto drawings than implicitly monitored subjects, $t(32) = 2.2$, $p < .05$. There were no differences between monitoring conditions, however, on the male or female drawings. This finding appears consistent with the time results. Closely monitored subjects spent less time on their drawings overall, and they spent the least amount of time on the auto. Such a hurried performance would reasonably result in more omissions. The lack of familiarity hypothesis, presented earlier, may also have contributed to this finding. Subjects may have been less attuned to what constitutes the essential body parts of an automobile; whereas they were well acquainted, by

definition, with the essential human body parts.

The loss of detail index also produced a significant interaction between monitoring condition and stimulus object, $F(1, 60) = 5.6$, $p < .03$. Closely monitored subjects included significantly less detail on their female drawings than on their male drawings, $t(32) = 2.3$, $p < .03$. There were no differences between the drawings for implicitly monitored subjects (see Figure 2). This seems to suggest that although the amount of time closely monitored subjects spent on their male and female drawings was approximately equal, they managed to include more details on the male. The question then arises whether subjects were more thoughtful in drawing their own gender figure; or perhaps they were more hesitant, struggled more in committing pencil to paper and so had less time available for detail work. These questions become even more important in relation to the surprising detail results for implicitly monitored subjects: they spent an average of 110 seconds more on their female drawing than their male drawing, yet no differences emerged on the detail index. How did these subjects use this time if not in elaborating their work? This issue will be discussed further in the general discussion section.

To summarize the monitoring results, closely monitored subjects spent less time on their drawings overall, made more omissions on their auto drawings, and included less detail on their female drawings compared to their male

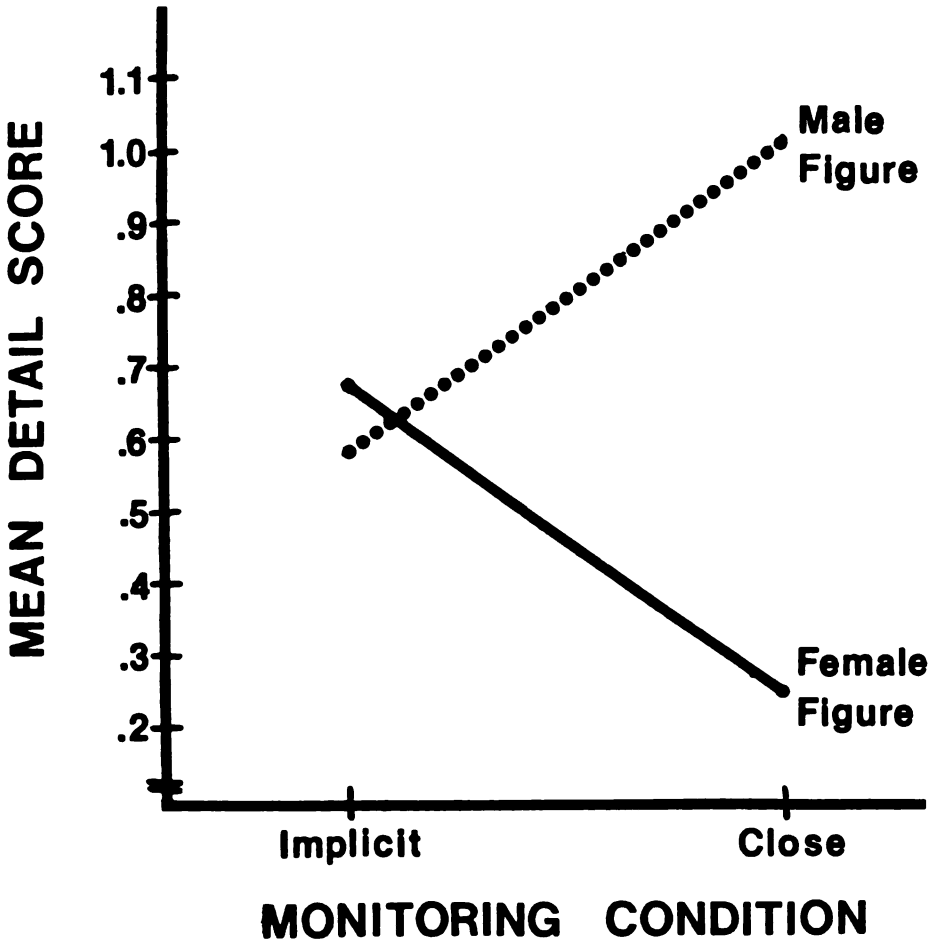


Figure 1. Monitoring Condition by Stimulus Object Interaction for Loss of Detail Scores

drawings than their implicitly monitored counterparts.

Hypothesis VI

Results provided definite support for the prediction that female subjects would find the automobile as difficult to draw as a human figure. The method of paired comparisons (Nunnally, 1978) produced a stimulus object ranking from most difficult to least difficult of: female, automobile, and male.

In order to determine whether any differences existed in ratings of stimulus object difficulty, Cochran's *Q* statistic was applied to each paired comparison (Winer, 1971). Non-significant *Q*'s of .25 and .06 were obtained for the male -- automobile and female -- automobile comparisons respectively. This confirms that female subjects find the automobile figure as difficult to draw as either human figure. However, the male -- female comparison yielded a significant *Q* of 4.0, indicating that subjects found the female figure more difficult to draw than the male figure. In other words, drawing the same gender figure was experienced by females as a more difficult assignment than drawing the opposite gender figure. This appears consistent with results for drawings time and the loss of detail index: more time was spent on the female figure, yet it received less elaboration. Additional comments on this finding will be made in the general discussion section.

GENERAL DISCUSSION

The general discussion which follows has been organized into three subsections, one for each of the independent variables used in this study.

Monitoring

Degree of monitoring was shown here to affect two graphic indices of anxiety, and drawing time. For the omissions index, close monitoring affected only the auto drawing: more omissions were found on the autos drawn by closely monitored subjects than those drawn by implicitly monitored subjects. Closely monitored and implicitly monitored subjects were equally careful to make their human figure drawings complete. As proposed earlier, a lack of familiarity with the automobile as a drawing object may explain this difference, particularly for female subjects. Whatever the anxiety engendered by the auto as a stimulus object, it was exacerbated by close monitoring and resulted in a less careful/complete drawing.

On the loss of detail index, close monitoring resulted in a difference in amount of detail included on the male and female drawings; closely monitored subjects included more detail on their male drawings than on their female drawings. Implicitly monitored subjects demonstrated no such distinction in their drawings. In this study, then, same

Task Description

The general discussion which follows was based on
data from three subsections, one for each of the three
variables used in this study.

Monitoring

Degree of monitoring was shown here to affect two
graphic indices of anxiety, and drawing time. For the
omissions index, close monitoring affected only the
drawings: more omissions were found on the notes drawn
closely monitored subjects than were found on those drawn by less
monitored subjects. Closely monitored and imaginative
monitored subjects were equally careful to note minor
figure drawings completed. As proposed earlier, a lack of
familiarity with the task seems to be a drawing object may
explain this difference, particularly for lower scores on
whatever the anxiety was aroused by the note as a stimulus
object, it was exacerbated by close monitoring and was seen
in a less critical/complete drawing.

On the loss of detail items, close monitoring resulted
in a difference in amount of detail (as rated on the more
complex drawings) closely monitored subjects included more
detail on their more drawings than on their less complex
drawings. Similarly monitored and less monitored subjects
differed in their drawings. In this study, close

gender drawings incurred a loss of elaboration under the closely monitored condition. Close monitoring also resulted in an abbreviation of over-all drawing time, although this must be interpreted with care in light of the three-way interaction that emerged for the time variable.

On a broader level, these monitoring effects seem to suggest some implications for projective drawing administration. Close scrutiny of a client or patient (that is, scrutiny of a magnitude similar to EDA monitoring) may result in a deterioration of performance. More specifically, non-human or unfamiliar drawings may be rendered less complete; same gender figure drawings may receive less elaboration, and less time may be invested in the entire task. This is an example, therefore, of an aspect of the testing situation affecting projective test results. Close scrutiny could be employed purposefully to aid assessment of a client's anxiety management: more omissions, greater loss of detail, and shorter drawing time would suggest that the client is less effective in coping with externally induced anxiety. On the other hand, an assessor interested in obtaining a client's best performance would be advised to avoid a testing procedure that closely scrutinizes the client.

Experimenter Personal Power

Experimenter personal power had a effect on three of this study's dependent variables: omissions, line discontinuity, and drawing time.

The effect of experimenter personal power on the grapic index of omissions was surprising. Fewer omissions were found in the male and female drawings of subjects with the HP experimenter than those of subjects with the LP experimenter. This suggests that the HP experimenter stimulated their subjects to an improved performance on their human figures; there was no effect on the auto drawings. Instead of creating a disorganizing anxiety, then, HP experimenters seem to create an enabling anxiety, at least in terms of drawing completeness.

This result could be interpreted in terms of social facilitation theory (Zajonc, 1965). According to social facilitation theory, the presence of others leads to an improved performance on simple tasks, or tasks for which success requires a dominant response. On complex or novel tasks, however, the presence of others causes performance to deteriorate. In this study, it has already been argued that the drawing of human figures is probably a familiar task for most people, and the drawing of an automobile figure is a relatively novel task. Thus, social facilitation seems to have been provided by the presence of the HP experimenter, at least on the omissions index. The fact that this same effect was not created by the presence of the LP experimenter may indicate that even social facilitation can be influenced by the attributes or personal power of the other.

Both versions of the line discontinuity index (orignial

scale and expanded scale) showed an experimenter personal power effect. Drawings from subjects with the HP experimenter contained more discontinuous lines than those from subjects with the LP experimenter. According to this index, then, subjects with the HP experimenter seemed pressured to hurry. The results of the two graphic indices together seem to portray a subject anxious to finish, yet carefully adhering to her HP experimenter's instructions not to make an incomplete figure.

The effect of experimenter personal power on drawing time was strikingly revealed in the three-way interaction with monitoring condition and stimulus object. First, high experimenter personal power most clearly reduced drawing time on the female figure. It may be that the same gender figure promotes greater subject sensitivity to the interpersonal situation, and a stronger reaction to the personal power of the experimenter. Or, subject sensitivity may have been enhanced by the fact that the experimenter was also female. A third possibility is that greater anxiety is generated when the subject, the experimenter, and the stimulus object all share the same gender.

The second important effect demonstrated by the three-way interaction also concerns the same gender figure. Low experimenter personal power clearly facilitated implicitly monitored subjects' "taking their time" on the same gender figure -- nearly two minutes more than on either other drawing or any other condition. An important question here

is how these subjects used their extra time. Were these subjects more hesitant in tackling the assignment; did they ponder the task at length? Perhaps they elaborated their female drawings in ways not measured by this study, by reinforcing lines, for example, or doing extensive shading. What is most intriguing about this finding is the possibility that the LP experimenter -- implicitly monitored condition provided the best circumstances for projective processes to emerge on the same gender figure. Additional research is needed to fully exploit the meaning of this result. Studies clarifying how subjects utilize their drawing time, and replications using male subjects and experimenters would be most helpful.

Even without the benefit of further research, however, the effects produced by experimenter personal power in this study indicate that the interpersonal context can affect assessment with projective drawings. A higher power assessor may well elicit greater compliance with instructions; that is, a client may be more careful to complete the task as directed. A higher power assessor may also promote social facilitation: improving client performance on simple or familiar tasks, and impairing performance on complex or novel tasks. Yet, the actual execution of the task may be more hurried. By contrast, a lower power assessor who avoids a close monitoring procedure may elicit the greatest time investment from clients on same gender figures. Although this requires further testing, one

would assume that a greater time investment on the part of a client would result in a drawing richer in clinical data.

Returning to the hypotheses of this study, the expected interaction between monitoring condition and experimenter personal power materialized only on the time variable, and then complicated by an interaction with stimulus object. The most obvious conclusion one can draw from this lack of results is that close monitoring and high experimenter personal power do not interact in the ways proposed. Apparently, closely monitored subjects do not experience greater objective self-awareness and thus engage in more self-presentational behaviors with the higher power experimenter as described in the introduction.

It has already been proposed that for most people completing a drawing task in the presence of an experimenter could by itself induce objective self-awareness. Perhaps the addition of EDA monitoring to the drawing task does not sufficiently increase objective self-awareness to distinguish it from the experience of the drawing condition alone. Thus, subjects in the two conditions would not react differently to their high or low personal power experimenters. Some support for this explanation could be gathered from the differences in procedures in the current and 1985 studies. The earlier subjects completed more projective tasks, including devising stories and wishes for each of their drawings. As has been discussed earlier, the absence of the additional interactions required by these

extra tasks could account for the lack of results for the interpersonal dependent variables. Perhaps this verbal component has an additional effect of interacting with EDA monitoring to produce objective self-awareness in a way that drawing alone does not.

A second possible explanation for this study's nonproduction of monitoring condition and experimenter personal power interactions may be found in the experimenter personal power variable. Although the video-tape raters and the subjects themselves clearly distinguished two levels of personal power, perhaps the high -- low contrast was not strong enough. In this case, subjects may well have differed in degree of objective self-awareness according to their monitoring condition, but the experimenter personal power manipulation was not sufficiently robust to evoke distinct responses on the variables measured. Both of these alternate explanations require much further investigation.

A few comments on the *Personal Power Function Profile* seem appropriate at this time. The usefulness of the profile may be enhanced by the development of separate male and female versions. For example, the attribute of stature would seem to hold different value for males and females. In this study, the stature item functioned directly opposite to the other items which distinguished experimenters. The LP experimenters were rated higher on stature than the HP experimenters. Stature may be a more complicated attribute applied to female body shape and size than applied to male

[illegible]

[illegible]

[illegible] total effect [illegible]

[illegible]

[illegible]ing alone does not.

A second possible explanation for this study's [illegible]

[illegible]ulation of monitor[illegible] and [illegible] [illegible]

power interaction was not found in the experiment [illegible]

power [illegible] with [illegible]

subjects themselves [illegible] questionnaire [illegible]

personal power, [illegible] the [illegible]

strong enough. [illegible]

differed in degree of [illegible] self-awareness [illegible]

their monitoring condition, but the experiment[illegible]

power manipulation was not sufficiently robust [illegible]

distinct responses on the [illegible]

alternate explanations require much further investigation.

A few comments on the [illegible] Power [illegible]

seem appropriate at this time. The usefulness [illegible]

profile may be enhanced by the development of separate male

and female versions. For example, the attribute of [illegible]

would seem to hold different value for males and females.

In this study, the stature item functioned directly opposite

to the other items which distinguished experimenters. [illegible]

LP experimenters were rated higher on stature than [illegible]

experimenters. Stature [illegible]

[illegible] to female [illegible]

body shape and size. Some clarification of the definition of stature for females, as well as of the relationship between stature and personal power would be helpful. Another item that could benefit from revision for females is the height item. Although the experimenters differed in height, the height scale was too broad to reflect these differences. Further study may suggest additional modifications.

Stimulus Objects

The three stimulus objects produced a main effect or were involved in an interaction for each of the dependent variables measured in this study. A summary of these findings as they pertain to each of the stimulus objects is given below.

Subjects overall spent more time on their female drawings, and closely monitored subjects included less detail on their female drawings than on their male drawings. Male drawings displayed more discontinuous lines than the auto drawings (as measured by the expanded scale). Fewer omissions were found on both the male and female drawings done by subjects with the HP experimenters than those done by subjects with the LP experimenters; and both human drawings were more vertically imbalanced than the automobile drawing (as measured by the expanded scale). Finally, more essential body parts were omitted in closely monitored subjects' auto drawings than in implicitly monitored subjects' auto drawings.

done by subjects with the IV experimenters, and both human
drawings were more vertically impedanced than the computer
drawing (as measured by the encoded scale). Finally, no
essential body parts were omitted in closely monitored
subjects' auto drawings than in implicitly monitored
computer auto drawings.

Before discussing the implications of these findings, a comment should be made on the usefulness of the expanded scale for rating the graphic indices of line discontinuity and vertical imbalance. As Roach had proposed, the expanded scales proved more sensitive than the original scales. For both graphic indices, the expanded scale revealed differences between stimulus objects which the original scale did not. This strongly recommends the use of the expanded scale in future research.

An important perspective on the stimulus object results seems to be afforded by the outcome of the drawing difficulty ratings. The motivation for obtaining these ratings from subjects was to justify the use of the auto as a comparison figure for the human figures. The female subjects in this study verified that the auto is no more difficult to draw than the male or female figures. However, they rated their same gender figure -- the female -- as more difficult to draw than the opposite gender figure. This female figure was also the one on which subjects spent the most time overall; and when closely monitored, detailed the least; and with the HP experimenter, were most anxious to complete. Is all this a reflection of the projection process at work with a same gender stimulus? If so, what behavioral and cognitive processes are involved in the completion of this task? Creative research may shed light on this, and also clarify <u>what</u> about the same gender figure drawing task subjects found difficult.

ioners; and with the MP experimenter, were most anxious to complete. Is .It this a reflection of the projection process at work with a some sender stimulus? If so, what behavioral and cognitive processes are involved in the completion of this task? Creative research may shed , it on their and its entirety when find the were a were few responses found delivered.

Another important area for future investigation is, given a difference (at least for female subjects) in difficulty for the human figures, what are the differences in clinical data elicited by each of the human figure drawings? A further issue that remains unclear is what meaning the auto drawing has for female subjects. Now that the difficulty question applied to the auto stimulus has been resolved, it seems important to determine whether the auto stimulus is equally meaningful (or neutral) for subjects of both sexes.

Research focused on these questions would benefit not only the enthusiastic psychological investigator, but the practicing clinician. The evaluation of a series of drawings produced by a client would be refined and enhanced by familiarity with the effect the testing situation and interpersonal context can have on performance, as well as by greater clarity about the kind of information elicited by the different drawing stimuli.

APPENDICES

APPENDIX A

APPENDIX A

PERSONAL POWER FUNCTIONS PROFILE

Reyher (1979) originally defined 16 personal power functions. Six of these, however, could not be reasonably manipulated in this study and were therefore excluded. The excluded fuctions are: Education (all experimenters were college students), Authority-Occupation (all experimenters held the same "occupation" of experimenter), Personal Fame and Family Fame (within this experiment's setting, the experimenters had no cause to reveal information pertinent to these functions), Knowledge/Ability/Talent Germane to Interaction, and Expression of Ideas (it would be potentially detrimental to the quality of the research project if one experimenter were low on either of these functions).

PLEASE CONSIDER EACH OF THE FOLLOWING DIMENSIONS AS THEY APPLY TO YOUR EXPERIMENTER. RATE YOUR EXPERIMENTER ON EACH DIMENSION BY CHECKING THE NUMBER WHICH CORRESPONDS TO THE MOST ACCURATE DESCRIPTION OF YOUR EXPERIMENTER. BE SURE TO CHECK YOUR CHOICE FOR EACH OF THE 10 DIMENSIONS.

1. Physical Attractiveness
   - ___ 1. ugly
   - ___ 2. ...
   - ___ 3. plain
   - ___ 4. ...
   - ___ 5. beautiful/very handsome

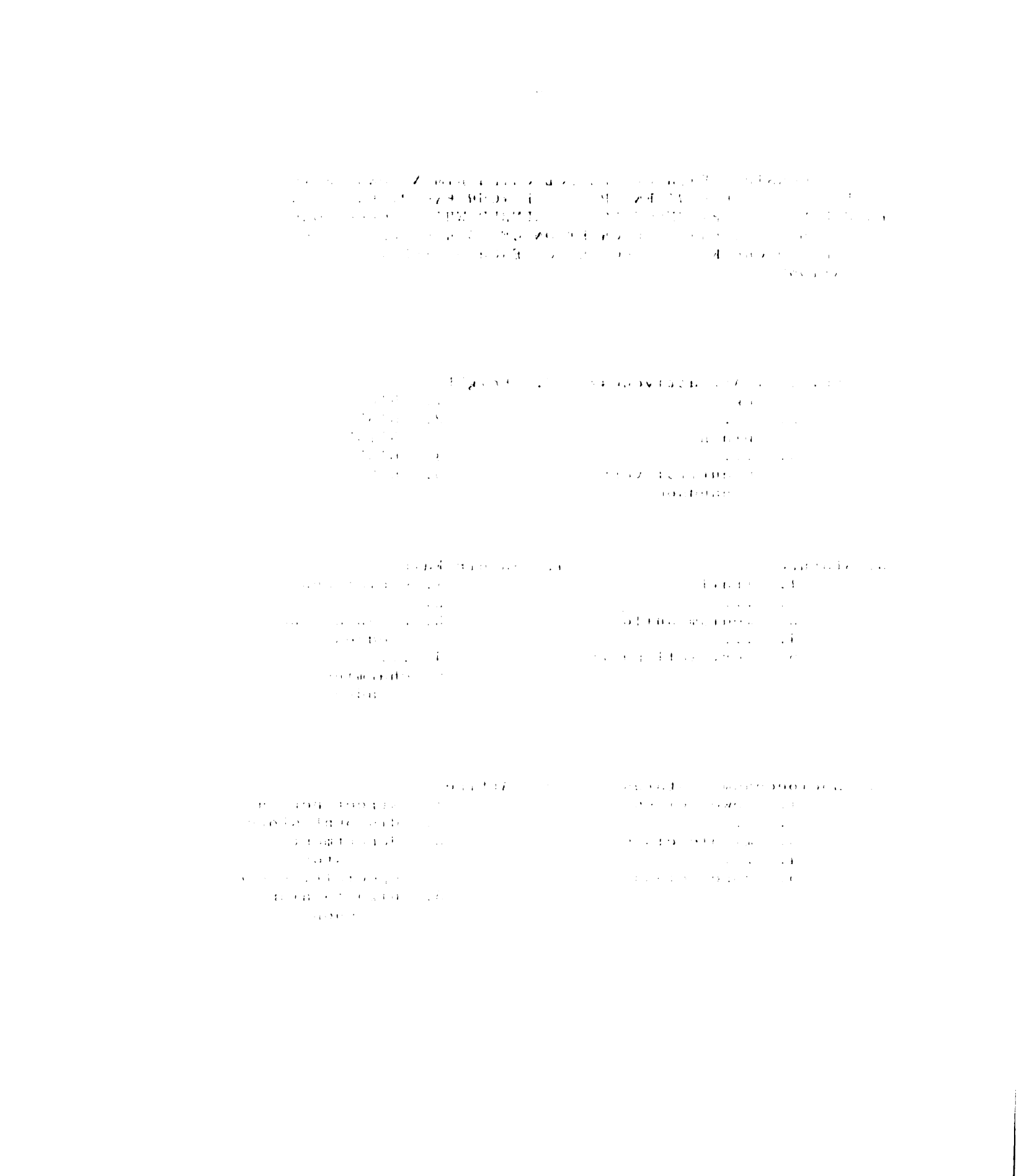
2. Height
   - ___ 1. 5'0"
   - ___ 2. 5'5"
   - ___ 3. 5'10"
   - ___ 4. 6'3"
   - ___ 5. 6'8"

3. Stature
   - ___ 1. frail
   - ___ 2. ...
   - ___ 3. medium build
   - ___ 4. ...
   - ___ 5. very well built

4. Savoir Faire
   - ___ 1. social dunce
   - ___ 2. ...
   - ___ 3. rough at the edges
   - ___ 4. ...
   - ___ 5. charmingly adroit

5. Socioeconomic Status
   - ___ 1. lower class
   - ___ 2. ...
   - ___ 3. middle class
   - ___ 4. ...
   - ___ 5. upper class

6. Attire
   - ___ 1. street person
   - ___ 2. discount store
   - ___ 3. department store
   - ___ 4. specialty store
   - ___ 5. high fashion shop



7. Speech

___ 1. stutter

___ 2. stammer

___ 3. halting, hesitant

___ 4. fluid

___ 5. eloquent

8. Carriage

___ 1. slumped, head bowed

___ 2. head bowed

___ 3. slouches some, eyes downcast

___ 4. erect body but head not high

___ 5. body erect and head high (poised)

9. Eye Contact

___ 1. 0%

___ 2. 25%

___ 3. 50%

___ 4. 75%

___ 5. 100%

10. Voice

___ 1. high, diminutive

___ 2. ...

___ 3. moderate

___ 5. full, overtones, color adroit

APPENDIX B

APPENDIX B

SCORING PROCEDURES FOR GRAPHIC INDICES OF ANXIETY

This appendix delineates the scoring criteria for the four graphic indices of anxiety by which the drawings were rated in this study. The foundation for these scoring procedures is Handler's (1967) scoring manual for human figures, and Roach's (1981) scoring criteria for the automobile drawings. Handler's manual includes twenty distinct indices of anxiety; Roach's manual contains twelve indices. Three of the four particular indices to be used in this study were chosen because past work (Roach, 1984; Handler and Reyher, 1966) has shown them to be direct and uncomplicated indicators of anxiety. These three are: omissions, vertical imbalance, and loss of detail. The fourth index, line discontinuity, was included because it significantly distinguished experimenters in the Hamernik (1985) study.

The scoring procedures used in this study differ in some respects from Handler and Roach's manuals. The purpose of the modifications was to enhance the degree of correspondence between the scoring procedures for the human figure and the auto.

HUMAN BODY PARTS

Handler	Present Study
1. head (including facial features)	1. head (including facial features)
2. neck	2. neck
3. one or both hands	3. one or both hands
4. one or both feet	4. one or both feet
5. one or both legs	5. one or both legs
6. one or both arms	6. one or both arms
7. trunk	7. chest (breasts if adult female)
	8. pelvic area
	9. buttocks
	10. shoulders

As can be seen from the above comparison, the part that Handler referred to as the "trunk" was differentiated into four separate body areas. Below is a comparison of the areas of the automobile as defined by Roach and by the present study.

AUTOMOBILE BODY PARTS

Roach	Present Study
1. the area forward of a vertical line drawn tangentially to the front edge of the front tire	1. door(s)
	2. front window
	3. back window
	4. side window(s)

2. the area backward of a vertical line draw tangentially to the back edge of the back tire
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
4. one or both tires
5. the remainder of the car

5. tires
6. hood
7. trunk
8. door handle(s)
9. front bumper
10. back bumper
11. headlight(s)
12. taillight(s)
13. roof (except convertible)

Roach's five automobile areas are divided for this study into separate pieces of equipment. It is proposed that these separate pieces correspond more directly to the "piece by piece" breakdown of the human body.

Described below are the scoring criterion for each of the four graphic indices of anxiety. Changes or additions to the original procedures as outlined by Handler or Roach are highlighted by italics. Further, a second scoring scale is presented for the indices of line discontinuity and vertical imbalance. These second scales are based on the recommendations in Roach (1984, pp. 47, 49) that an expanded scoring scale would enhance index sensitivity.

I. OMISSION

Score if there is an omission of any essential body *part* or when the figure is placed so that one or more essential body *parts* have been cut off by the edge of the paper (paper chopping).

For the human drawings, the number of essential parts is expanded to include:

11. hair
12. each facial feature:
    a. eyes
    b. nose
    c. mouth
    d. ears, unless covered by hair
    e. eyebrows, *unless covered by hair*

If arms or legs are omitted, hands and feet are also scored as omitted. If legs come to a point, feet are counted as omitted unless toes or shoes are indicated. Eyes do not have to be drawn in detail. A hand is considered omitted unless fingers are indicated. In the case of a clenched fist,lines must show that fingers are present. ***Depending on the perspective or angle from which the figure was drawn (front, side, rear) a body part is not scored as omitted if it would obviously not be seen from that angle.***

Score 0 when there are no omissions.

Score 1 when any one body part is omitted.

Score 2 when any two body parts are omitted.

Score 3 when any three body parts are omitted.

II. LINE DISCONTINUITY

Line discontinuity refers to the frequency of broken lines used in the drawing, and to the spaces left between various body parts. On careful inspection, these body parts appear unconnected. A line discontinuity is scored if it is possible to go from the outside of the body wall to the inside of the body wall without crossing a body line. If the drawing is done with a sketchy line, it is difficult to determine whether line discontinuity should be scored. Line discontinuity should not be scored if, despite the sketchiness, it is impossible to go from the outside of the body wall to the inside without crossing a body line.

Score 0 when there are no more than three line discontinuities in a drawing.

Score 1 when four or five line discontinuities are present.

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

Score 3 when nine or more line discontinuities are present.

Expanded Scoring Scale

Score 0 when there are no line discontinuities.

Score 1 when one line discontinuity is present.

Score 2 when two line discontinuities are present.

Score 3 when three line discontinuities are present.

Score 4 when four line discontinuities are present.

Score 5 when five line discontinuities are present.

Score 6 when six line discontinuities are present.

Score 7 when seven line discontinuities are present.

Score 8 when eight line discontinuities are present.

Score 9 when nine or more line discontinuities are present.

II. VERTICAL IMBALANCE

This index may be scored with a protractor, as the angle the midline of the drawing makes with the bottom edge of the paper. *For the human figures, an acetate sheet with a single straight line is placed over the drawing such that the line follows the vertical axis of the figure. For*

II. [illegible] IN ALASKA

the automobile, an acetate sheet divided into four equal quadrants by a right angle cross is placed over the drawing such that the horizontal line follows the bottom edge of the auto and the vertical line intersects the midpoint between the tires. The edge of the protractor is placed along the bottom edge of the paper; the deviation of the vertical line from the *90°* marking is noted.

Score 0 when the deviation is less than *or equal to 2 degrees.*

Score 1 when the deviation is *greater than 2 degrees, but less than or equal to 8 degrees.*

Score 2 when the deviation is *greater than 8 degrees, but less than or equal to 17 degrees.*

Score 3 when the deviation is greater than 17 degrees.

<u>Expanded Scoring Scale</u>

Score 0 when there is no deviation.

Score 1 when the deviation is greater than 0 degrees, but less than or equal to 1 degree.

Score 2 when the deviation is greater than 1 degree, but less than or equal to 2 degrees.

Score 3 when the deviation is greater than 2

degrees, but less than or equal to 3 degrees.

Score 4 when the deviation is greater than 3 degrees, but less than or equal to 4 degrees.

Score 5 when the deviation is greater than 4 degrees, but less than or equal to 5 degrees.

Score 6 when the deviation is greater than 5 degrees, but less than or equal to 6 degrees.

Score 7 when the deviation is greater than 6 degrees, but less than or equal to 7 degrees.

Score 8 when the deviation is greater than 7 degrees, but less than or equal to 8 degrees.

Score 9 when the deviation is greater than 8 degrees.

V. LOSS OF DETAIL

Detail loss should not be confused with Omission. Detail loss is scored for presence or absence of any item not scored for Omission (e.g., items such as pockets, buttons, fingernails, collar, tie, etc.). Detail loss is best scored when two drawing productions are being compared.

If two drawings are being compared, score as follows:

Score 0 *for both drawings when they* have about the same amount of detail.

Score 1 *when* one drawing has an additional detail; *score the other drawing 0.*

Score 2 *when* one drawing has two additional details; *score the other drawing 0.*

Score 3 *when* one drawing has three or more additional details; *score the other drawing 0.*

APPENDIX C

APPENDIX C

DRAWING DIFFICULTY RATING FORM

FOR EACH OF THE THREE PAIRS LISTED BELOW, PLEASE CIRCLE THE OBJECT THAT YOU FOUND MORE DIFFICULT TO DRAW.

1.	Male	Female
2.	Female	Automobile
3.	Automobile	Male

APPENDIX D

APPENDIX D

INTERPERSONAL RATING FORMS

EXPERIENCE IN TODAY'S SESSION

Indicate your subjective, personal impression of how the experimenter interacted with you today on the following scales. Circle the number which best fits your impression.

THE EXPERIMENTER	very little		moderately		very much
- TREATED ME WITH CONSIDERATION	1	2	3	4	5
- TREATED ME WITH RESPECT	1	2	3	4	5
- WAS FRIENDLY	1	2	3	4	5
- WAS LIKABLE	1	2	3	4	5

FURTHER COMMENTS:

EXPERIENCE IN TODAY'S SESSION

Indicate your <u>subjective, personal impression</u> of how the subject interacted with you today on the following scales. Circle the number which best fits your impression.

THE SUBJECT	very little		moderately		very much
- TREATED ME WITH RESPECT	1	2	3	4	5
- WAS COOPERATIVE	1	2	3	4	5
- WAS FRIENDLY	1	2	3	4	5
- WAS LIKABLE	1	2	3	4	5
- TREATED ME WITH CONSIDERATION	1	2	3	4	5

FURTHER COMMENTS:

APPENDIX E

Table 5

Analysis of Variance
For Drawing Time (Seconds)

Source	SS	MS	F
P	45,818	45,818	1.031
M	276,185	276,185	6.216**
PM	6,792	6,792	.153
S/PM	2,665,700	44,428	
O	150,774	75,387	8.871***
PO	43,312	21,656	2.548
MO	18,000	9,000	1.059
PMO	57,076	28,538	3.358*
O/S/PM	1,019,770	8,498	
Total	4,283,430		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 6

Analysis of Variance
For Omission Scores

Source	SS	MS	F
P	6.380	6.380	3.505
M	.880	.880	.484
PM	.047	.047	.026
S/PM	109.229	1.820	
O	5.292	2.646	3.021
PO	14.292	7.146	8.160***
MO	7.292	3.646	4.163**
PMO	5.375	2.688	3.069
O/S/PM	105.083	.876	
Total	253.870		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 7

Analysis of Variance
For Line Discontinuity Score (original scale)

Source	SS	MS	F
P	10.083	10.083	6.564**
M	3.000	3.000	1.953
PM	1.333	1.333	.868
S/PM	92.167	1.536	
O	2.906	1.453	2.154
PO	.698	.349	.517
MO	2.531	1.266	1.876
PMO	3.573	1.786	2.648
O/S/PM	80.958	.675	
Total	197.250		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 8

Analysis of Variance
For Line Discontinuity Score (expanded scale)

Source	SS	MS	F
P	70.083	70.083	5.185*
M	25.521	25.521	1.888
PM	6.021	6.021	.445
S/PM	810.958	13.516	
O	45.844	22.922	4.655**
PO	4.885	2.443	.496
MO	11.698	5.849	1.188
PMO	17.323	8.661	1.759
O/S/PM	509.917	4.924	
Total	1,583.250		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 9

Analysis of Variance
For Vertical Imbalance Score (original scale)

Source	SS	MS	F
P	.0052	.0052	.011
M	.0469	.0469	.103
PM	.8802	.8802	1.934
S/PM	27.3125	.4552	
O	1.5312	.7656	2.816
PO	.8229	.4115	1.513
MO	.2812	.1406	.517
PMO	.0729	.0365	.134
O/S/PM	32.6250	.2719	
Total	63.5781		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 10

Analysis of Variance
For Vertical Imbalance Score (expanded scale)

Source	SS	MS	F
P	.1875	.1875	.029
M	.5208	.5208	.079
PM	4.6875	4.6875	.714
S/PM	393.9170	6.5653	
O	48.1979	24.0990	7.783***
PO	.7812	.3906	.126
MO	12.8854	6.4427	2.081
PMO	3.2186	1.6094	.520
O/S/PM	371.5830	3.0965	
Total	835.9790		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 11

Analysis of Variance
For Loss of Detail Score

Source	SS	MS	F
P	.0703	.0703	.138
M	.0078	.0078	.015
PM	.0078	.0078	.015
S/PM	30.5938	.5099	
O	4.1328	4.1328	3.525
PO	.0078	.0078	.007
MO	6.5703	6.5703	5.604**
PMO	3.4453	3.4453	2.939
O/S/PM	70.3438	1.1724	
Total	115.1800		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 12

Analysis of Variance
For Experimenter Consideration Score

Source	SS	MS	F
P	.0156	.0156	.075
M	.7656	.7656	3.693
PM	.1406	.1406	.678
S/PM	12.4375	.2073	
Total	13.3594		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 13

Analysis of Variance
For Experimenter Respectfulness Scores

Source	SS	MS	F
P	.2500	.2500	.732
M	0.	0.	0.000
PM	1.0000	1.0000	2.927
S/PM	20.5000	.3417	
Total	21.7500		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 14

Analysis of Variance
For Experimenter Friendliness Scores

Source	SS	MS	F
P	.2500	.2500	.566
M	0.	0.	0.000
PM	1.0000	1.0000	2.264
S/PM	26.5000	.4417	
Total	27.7500		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 15

Analysis of Variance
For Experimenter Likableness Scores

Source	SS	MS	F
P	.0156	.0156	.035
M	.1406	.1406	.313
PM	.7656	.7656	1.705
S/PM	26.9375	.4490	
Total	27.8594		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 16

Analysis of Variance
For Subject Respectfulness Scores

Source	SS	MS	F
P	.2500	.2500	1.765
M	0.	0.	0.000
PM	.2500	.2500	1.765
S/PM	8.5000	.1417	
Total	9.0000		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 17

Analysis of Variance
For Subject Cooperation Scores

Source	SS	MS	F
P	.2500	.2500	1.600
M	.0625	.0625	.400
PM	.0625	.0625	.400
S/PM	9.3750	.1562	
Total	9.7500		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 18

Analysis of Variance
For Subject Friendliness Scores

Source	SS	MS	F
P	.2500	.2500	.857
M	0.	0.	0.000
PM	0.	0.	0.000
S/PM	17.5000	.2917	
Total	17.7500		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 19

Analysis of Variance
For Subject Likableness Scores

Source	SS	MS	F
P	.3906	.3906	.870
M	.3906	.3906	.870
PM	.7656	.7656	1.705
S/PM	26.9375	.4490	
Total	28.4844		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 20

Analysis of Variance
For Subject Consideration Scores

Source	SS	MS	F
P	0.	0.	0.000
M	.0625	.0625	1.034
PM	.0625	.0625	1.034
S/PM	3.625	.0604	
Total	3.7500		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

Table 21

Analysis of Variance
For Personal Power Function Profile Scores

Source	SS	MS	F
P	189.063	189.063	19.300***
M	5.0625	5.0625	.517
PM	3.0625	3.0625	.313
S/PM	587.7500	9.7958	
Total	784.9380		

* Significant at $p \leq .05$
** Significant at $p \leq .025$
***Significant at $p \leq .01$

APPENDIX F

APPENDIX F

THE METHOD OF PAIRED COMPARISON

This procedure, as explained by Nunnally (1978), requires subjects to rank stimuli two at a time in all possible pairs. Then, one determines the percent of subjects that rated each stimulus as being higher on the particular response dimension than each of the other stimuli. The data are then summarized in a square table showing all possible percentages of the paired comparisons. These percentages are summed for each stimulus, and the sums are ranked from highest to lowest.

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