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**THE SELF-AWARENESS EXPERIENCE
AND PERCEPTION OF INTERNAL STATES:
A COMPARATIVE ANALYSIS**

By

Ann M. Isenberg

A DISSERTATION

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

DOCTOR OF PHILOSOPHY

Department of Psychology

1990

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ABSTRACT

THE SELF-AWARENESS EXPERIENCE AND PERCEPTION OF INTERNAL STATES: A COMPARATIVE ANALYSIS

By

Ann M. Isenberg

Theory and previous research efforts suggest that not all sources of heightened self-awareness should be considered identical in their effects. Stimuli such as mirrors tend to produce a heightened internal focus, while stimuli such as audience presence or audio/videotape recording tend to pull an individual's attention toward concerns of social presentation and evaluation. Five experimental conditions were constructed with different stimuli designed to produce differential experiences of heightened self-awareness. One hundred sixty-six female volunteers were recruited from introductory psychology classes and assigned randomly to one of the five experimental conditions. Each subject completed measures of dispositional self-consciousness, body and self-image concerns, and psychopathology. Prior to and following the self-awareness manipulation, subjects indicated their current perception of three internal states: autonomic, mood, and cognitive. It was hypothesized that subjects' perceptions of these internal states would differ by virtue of the means by which self-awareness was heightened. Hypotheses were tested using "change" scores (post-scores minus pre-scores) and directly comparing pre-to-post change

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between groups or combinations of groups. Additional analyses were conducted to explore the relationship between dispositional tendencies in self-consciousness and subject response and the effects of dividing the subject population by pre-to-post change on an individual difference variable (autonomic perception). Results indicated that the hypotheses of differing results based on differential production of heightened self-awareness were not supported, nor were the hypotheses supported concerning dispositional self-consciousness. Possible interpretations for these results are discussed, with concerns regarding the statistical analyses being the most prominent. Suggestions for replication and future research are outlined.

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ACKNOWLEDGEMENTS

I would like to thank the members of my committee, Dr. Norman Abeles, Chairperson; Dr. Dozier Thornton; Dr. Deborah Feltz; and Dr. Ralph Levine for their valuable guidance and suggestions concerning this work.

Data collection in this study necessitated the use of undergraduate experimenters. My thanks to Leslie Cohen, Ellyn Blumenthal, Lisa James, Terry Compeau, Andrea Oliver, Anita Khushalani, and Sharon Shea for their time, enthusiasm, and perseverance in learning the experimental procedure and collecting the data over a period of three and a half months.

To Dr. Michael J. Mahoney of the University of North Texas, my thanks for his suggestions and insights, including the sharing of his own research experience in the topic of "self-awareness."

Dr. Michael Kuskowski of the VA Medical Center, Minneapolis, Minnesota, also contributed valuable feedback and suggestions and the use of his computer.

To my typist, Krista Labie, Crystal, Minnesota, many thanks for all of her time and endurance (those hours of tables, especially).

The following
contributions to
tremendous support
Margaret McManus
Jane Rinehart; a
Resource Center,
(special thanks
Jeff Larson, Sta
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And most special
mother, Edna Ise
Minnesota. I thank
encouragement and

The following individuals made many valuable contributions to the completion of this work, most of all, tremendous support: Kevin Jones; Beth Patenaude-Jones; Margaret McManus; Kris Jensen; Sue Johnston; John Sineps; Jane Rinehart; and my colleagues at the Vietnam Veterans Resource Center, St. Paul, Minnesota: Mark Mulvihill (special thanks for this year), Ernie Boswell, Eric Egli, Jeff Larson, Stan Olson, Harlan Whipple, James Rinke, Mark Manolis, and Paul Hawley.

And most special thanks to my family, especially to my mother, Edna Isenberg, and to the Housker family of Mabel, Minnesota. I truly could not have done it without your encouragement and enduring support.

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Chapter 1

Introduction

"Personal growth has been viewed as a series of endless self-confrontations." (Carkhuff & Berenson, 1967, in Sanborn, Pyke, & Sanborn, 1975, p. 179)

The term "confrontation" may be thought of as a "challenge," the bringing together for the purpose of "examination and comparison," "to come up against" (*Random House Dictionary*, 1967; *The American Heritage Dictionary*, 2nd College Ed., 1985). When applied to the "self," the term "self-confrontation" suggests a process by which an individual, often within a therapeutic setting, may be challenged to become more aware of self, of behavior, effects on others, of thoughts and feelings. Self-confrontation presents the individual with the opportunity to know more about him or herself--and to ultimately make desired changes, often difficult, even painful work.

The term "objective self-awareness" is a particular type or ingredient of self-confrontation in which an individual becomes more aware of him or herself as an object in the world. The term "subjective self-awareness" refers to a pull of attention outward, toward the environment and others. Both types of self-awareness are, by definition, a part of psychotherapy. The client's "job" in therapy is to

focus on various aspects of the self, including those which may be difficult and painful to confront. Individuals focus attention on their roles in various events, experiences, and relationships. They identify and clarify associated thoughts and feelings with a therapist who facilitates this process of inner exploration. The presence of a therapist theoretically produces a subjective self-awareness, creating an environment within the therapy session in which an individual's attention could then conceivably be divided between internal focus and concerns related to the presence of the therapist.

Principles associated with the concept of self-awareness may also play a role in the development and maintenance of clinical disorders. For example, one theory regarding agoraphobia (Foa, Steketee, & Young, 1984) suggests that individuals with this disorder pay considerable attention to internal physiological cues which are then interpreted by the individual as "anxiety" or "panic," imminent death, or emotional loss of control. Certain studies of the effects of heightened objective self-awareness (Scheier & Carver, 1977; Scheier, Carver, & Gibbons, 1981) indicate that, when individuals are reminded of themselves as objects in the world, they become more internally focused; and internal states may be reported--or conceivably interpreted--as intensified.

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Studies utilizing the concepts of both objective and subjective self-awareness have historically come from two sources: social psychology, which defined and named the phenomena of objective and subjective self-awareness in the early 1970s, and clinical and counseling psychology, which produced studies with clinical populations in the 1960s and early to mid-1970s, investigating patients' responses to video and audio-tape feedback of therapy sessions or of certain behaviors. However, until recently, clinical studies rarely utilized what became the "manipulation of choice" to produce heightened objective self-awareness in most studies from social psychology--a mirror.

During the past decade, increasing attention has been given to the question of the nature of self-awareness--whether all stimuli which tend to heighten self-awareness have essentially the same effects on individuals or whether effects may depend on the particular manner in which self-awareness is heightened. The concepts of public and private aspects of the self were expanded to public and private applicability to external manipulations. "Public" and "private" self-awareness were conceptualized to refer to the direction of focus during the state of heightened self-awareness. "Public" self-awareness suggested attention divided between self and the external world, especially other individuals who could potentially evaluate performance, while "private" self-awareness suggested a more

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purely internal focus. As will be outlined in the remainder of the introduction, these two types of foci were found to result from different types of stimuli used to heighten self-awareness. Video and audio recorders, cameras, and audiences were seen as likely to produce a public self-awareness, while photographs of the individual and, especially, mirrors were theorized to produce a private--or internal--focus. Theory further suggested that under conditions of private self-awareness, individuals would note an increased awareness of internal states of all kinds. However, essentially missing from previous research are studies which produced data directly comparing differential effects of these different types of stimuli.

This study has focused on the differential production and effects of heightened self-awareness and has utilized principles and concepts from social psychological research to suggest far-reaching applicability to clinical work.

Individual differences certainly play a role in mediating responses to the world. Particularly related to research on public and private self-awareness is the concept of self-consciousness. While self-awareness is generally thought of as a "state" of being, self-consciousness more closely describes a "trait" or an individual "disposition" to process information in a certain way. Self-consciousness has also been divided into "public" and "private" aspects. "Public" self-consciousness is used to refer to the extent

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to which a particular individual is prone to be concerned about self-presentation, how one appears to others--again, an external focus. "Private" self-consciousness describes an individual's tendency to focus internally. Individuals scoring high in private self-consciousness tend to produce very similar results in many situations to persons whose private self-awareness is heightened. This study also attempted to find support for results of other studies investigating this concept by examining what effect this dispositional self-consciousness may have had in mediating the responses of subjects. Other dependent measures in this study were used to investigate the differential effects of the self-awareness experience on perception of three internal states often explored within a clinical context: autonomic perception, mood, and cognition. The remainder of this introduction will more extensively detail the concepts of self-awareness, self-consciousness, autonomic perception (awareness of certain physiological states), mood, and cognition and will cite previous work in these areas.

Self-Awareness

In 1972, Duval and Wicklund proposed a theory of self-awareness. They viewed conscious attention as dichotomous, directed either toward the self or toward the environment. This direction of attention is guided by events that force attention inward, such as reflections of the self, and events that pull attention outward, such as external

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distracting stimuli. The latter type of self-awareness was termed "subjective," and that characterized by an inward focus, "objective" self-awareness. The 1972 statement of the theory allowed that attention could oscillate between self and non-self, thereby resulting in an "increased" or "decreased" objective self-awareness (Wicklund, 1975, p. 234).

Objective self-awareness was conceived to be the state in which persons take themselves to be objects in the world. According to the original 1972 theory, it was assumed that in the process of such self-focus or self-reflection, an individual would typically find shortcomings in him or herself. Attention would then be focused on these intra-self discrepancies, resulting in negative affect "in proportion to the size of the discrepancy" (Wicklund, 1975, p. 233).

This theory is essentially a drive theory. Discrepancies created by self-focus in turn create an aversive drive state, a drive which is specific to the discrepancy under scrutiny and which, in turn, serves to motivate behavior (Carver & Scheier, 1981). The authors note that one way to decrease drive would be to alter behavior in the direction of the desired standard. By reducing the discrepancy, the aversiveness is also reduced (p. 145).

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The self-attention model (Miller et al., 1960 in Carver & Scheier, 1981) provides an alternative to the drive hypothesis to explain the shift in the direction of a standard. The self-attention model states that when a behavioral standard is salient, self-attention leads to a comparison between the standard and one's present behavior. This comparison, in turn, leads to a tendency to in some way alter behavior to conform more closely to the standard.

Although the original theory of objective self-awareness stressed the negative nature of the resulting affect, later revisions called this point into question. Wicklund (1975) stated that evidence has shown "recent and potent success experience" is sufficient for transforming objective self-awareness into a "desirable state" (p. 237). Carver and Scheier (1978, in Carver, 1979, p. 1268) were unable to find any evidence that self-attention leads to negative affect, a conclusion similar to that of Davis and Brock (1975, in Carver, 1979) and Hull and Levy (1979). Steenbargan and Aderman (in press, in Carver, 1979) found an increase in negative affect only when self-focus was combined with a "non-reducible discrepancy." When the discrepancy was "flexible," the opposite tendency occurred.

Another refinement of the original objective self-awareness theory was the discovery that varying levels of evaluation introduced into an experiment produced variation in task performance. The introduction of a high evaluative

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set tended to result in diminished performance in prose-copying task (Liebling & Shaver, 1973). In conditions of a low evaluative nature, subjects' performance levels increased when self-focused in the presence of a mirror (p. 302). The issue of evaluativeness or evaluation apprehension as related to its interaction with the state of self-awareness is a crucial one for consideration of effects resulting from exposure to audiences, experimenter presence, or even the act of audio or videotape recording.

A final consideration for this study is the question of self-report validity within the self-focus state. Pryor, Gibbons, Wicklund, Fazio, and Hood (1977) reported that the self-focused individual is motivated to reconcile self-reports with prior behaviors, at least to the extent that actual behaviors (past or future) can be seen reflected in the questionnaire. Thus, if face validity of the test is high, a subject will be motivated to be consistent and bring the elements of behavior and self-report into a consistent relation (p. 525). Pryor et al. demonstrated that the self-reports made by an individual in states of self-focused attention were more likely to achieve a consistent relationship with actual behavior than reports made under non-self-focus conditions. Later studies also suggested a greater accuracy of reports of self-perceptions under conditions of high self-focus (Carver, 1979, p. 1259). Although the accuracy hypothesis has come under question by

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some researchers (e.g., Lanzetta, Biernat, & Kleck, 1982; Levine & McDonald, 1981), it must be noted that this study is not concerned with the accuracy of subject perceptions per se but with the perceptions themselves. A more detailed account of certain specific aspects of this controversy will appear later in this section.

Public Versus Private Self-Awareness

More recently, a view of the self as a multifaceted entity has emerged in the collaborative work of Carver and Scheier (1981; 1983). These researchers believe it likely that different facets of the self are evoked at different times and in different contexts.

Scheier and Carver (1983) trace the conceptualization of the self and behavior back to Freud, Cooley, and Mead. Freud placed emphasis on the assumption that individuals are motivated largely by internal, "implicitly private" concerns (p. 124). However, others, including Cooley in 1902 and Mead in 1934, proposed that the self is merely a reflected image of society and that individuals choose and guide actions by a process of considering how they will be viewed by the surrounding social environment. Both conceptualized the self as a social product, developing over time as individuals take the perspective of others and view themselves from that vantage point. In other words, the focus becomes one of the self as a social entity.

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Goffman (1959; 1967, in Scheier & Carver, 1983, p. 125), Crowne and Marlowe (1964, in Scheier & Carver, 1983), and Tedeschi and colleagues (1980, in Scheier & Carver, 1983) have also stressed the role of the belief that encounters between people are essentially "theatrical performance," with each person attempting to create a particular image of him or herself in the minds of other "performers" and observers. The context of the interaction is supposedly the deciding factor from which image is chosen for portrayal, the choosing of actions to gain social approval and social rewards, and impression management (p. 125). Along with Schlenker (1980, in Scheier & Carver, 1983, p. 125), Tedeschi has expressed the belief that individuals choose their actions for the purpose of portraying the self as "rational and consistent or whatever else the situation calls for."

Scheier and Carver (1983) have adopted the position that "reality" appears to lie somewhere in between the two extremes. The authors suggested the utility of a position combining and integrating the extremes, thus concluding that more attention is needed to the possibility that different self facets may each contribute to behavior "in different ways, at different times, and different contexts" (p. 125).

The dichotomy of private and public aspects of self was originally proposed by Fenigstein, Scheier, and Buss (1975). The private self involves an individual's own personally

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held feelings and attitudes, covert thoughts, and other self aspects hidden from the view of others. The public self is the "socially apparent" self and involves overt behavior, mannerisms, stylistic quirks and expressions, elements of the self most relevant to motives of self-presentation and self-portrayal.

The public-private distinction has been shown applicable to experimental manipulations. Scheier and Carver (1983, p. 142) reported a study by Froming, Walker, and Lopyan (Exp. 1, 1982) testing the hypothesis that the presence of a mirror makes one selectively aware of the private self, while audience presence produces a selective awareness of the public self. Froming et al. also replicated these findings conceptually. Once again, a mirror and an evaluative audience drove behavior in opposing directions. Earlier work by Scheier and Carver (1980, Exp. 1 in Scheier & Carver, 1983, p. 143) found that mirror presence presumably caused subjects to be aware of private self-aspects, making their attitudes more salient, with the result that the attitudes became more resistant to change and attitude change diminished. In a second "dissonance" study, subjects exposed to a mirror tended ("non-significant") to reduce dissonance by distorting perceptions of their behavior, not by changing their attitudes, while subjects exposed to a camera did the opposite.

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Even more recently, Kimble and Zehr (1982, in Kimble, Hirt, & Arnold, 1985) found that public self-awareness (also called state self-consciousness in an earlier work) could be manipulated by varying the setting in which people are introduced. A usual face-to-face introduction induced more self-awareness than did one in which the subject was separated from those who introduced themselves by a one-way mirror. In Kimble and Zehr's first 1982 experiment, effects of trait self-consciousness (to be discussed later in this section) and public and private self-awareness on memory for others' names and characteristics were assessed. A mirror was used to manipulate private self-awareness, while public self-awareness was manipulated by whether the subject would be seen by assistants during the interaction. Results indicated that public self-awareness occurring in a nominal introduction situation produced a decrease in likelihood of remembering names, while private self-awareness did not affect memory scores (p. 64).

Self-Consciousness

Dispositional or "trait" self-awareness is known as self-consciousness. This disposition to be self-attentive, to habitually tend to oneself, has been studied for more than a decade. Self-consciousness may be measured by the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975) and is also divided into public and private dimensions as well as including a subscale measuring social anxiety.

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The scale is a 23-item Likert-type scale (0 = extremely uncharacteristic to 4 = extremely characteristic) consisting of the three just mentioned factors). The first, Private Self-Consciousness (10 items), includes such statements as the following:

I'm always trying to figure myself out.

I reflect about myself a lot.

I'm alert to changes in my mood.

The second, Public Self-Consciousness (7 items), is composed of statements such as:

I'm self-conscious about the way I look.

I'm concerned about what other people think of me.

I'm concerned about the way I present myself.

Social Anxiety (6 items) includes statements such as the following:

I get embarrassed very easily.

Large groups make me nervous.

I feel anxious when I speak in front of a group.

Test-retest correlations reported by Fenigstein, Scheier, and Buss (1973) were as follows:

Public Self-Consciousness = .84

Private Self-Consciousness = .79

Social Anxiety = .73

Total Score = .80

Public and private self-consciousness can be viewed as relatively independent dimensions (Carver & Scheier, 1981),

not opposite poles of a single dimension. Thus, it is possible for both components of the self to have an impact on specific behaviors (p. 310), "quite independent of each other" (although in some situations, both self aspects may also exert comparable influences).

Extensive research utilizing dispositional public/private self-consciousness (chiefly with college students) has revealed certain descriptive patterns of each. Individuals tending to be high in public self-consciousness are more sensitive to rejection and more attuned to social reference than those scoring low in such a disposition (Cheek & Briggs, 1982). Public self-consciousness is related to social identity and correlates significantly more strongly with social than with personal aspects of identity (social identity referring to an individual's social roles and relationships). In addition, persons scoring high in public self-consciousness report themselves to be concerned with physical appearance and high public self-consciousness has, in turn, been shown to be positively correlated to judged physical attractiveness (Turner & Gilliland, 1981). In essence, individuals high in public self-consciousness tend to be habitually aware of themselves as social objects (p. 188) and, thus, probably exhibit a great level of self-presentation concerns.

A high level of private self-consciousness has been correlated significantly more strongly with personal

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identity (i.e., one's private conception of self and feelings of continuity and uniqueness) than with social aspects of identity (Cheek & Briggs, 1981). Other findings concerning high levels of private self-consciousness include the following: the tendency to react more intensely to transient affective states (Scheier, 1976; Scheier & Carver, 1977); greater accuracy in self-reports (Scheier, Buss, & Buss, 1978; Turner et al., 1978; Underwood & Moore, 1981, all in Scheier & Carver, 1983), suggesting that such individuals are more quickly and easily able to access their knowledge about what they are like, their general behavior tendencies or "trait characteristics" (p. 130). Cheek and Briggs (1982) also noted that persons high in private self-consciousness tend to write longer self-descriptions than low scorers and emphasize individual aspects of identity.

Dispositional or "trait self-awareness" has also been used to conceptually replicate experiments in which mirrors and audiences, for example, have been utilized as manipulations of "private" and "public" self-awareness. As will be noted, high levels of private self-consciousness, especially, have tended to consistently produce the same results as the mirror manipulation in a variety of studies (e.g., Greenberg & Musham, 1981, in Franzoi & Brewer, 1984; Scheier & Carver, 1977; Scheier, Carver, & Gibbons, 1979; Scheier, Carver, & Gibbons, 1981; Scheier & Carver, Exp. 3, 1980, in Scheier & Carver, 1983; Hass, 1984).

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Manipulations of Self-Awareness

Early research in objective self-awareness tended to argue that any stimulus reminding individuals of themselves should "intuitively" appear to serve to heighten self-focus and thus be suitable as a self-awareness manipulation. Such situational manipulations would include cameras, videotapes, mirrors, tape recordings of subjects' voices, a "salient audience," etc. Subsequent research evidence indicated that such manipulations do increase self-attention (e.g., Geller & Shaver, 1976; Davis & Brock, 1975; Carver & Scheier, 1978). However, these various manipulations were initially used almost interchangeably with little consideration of the possibility of differential effects. Scheier and Carver (1983) stated that it was merely assumed that an individual's attention would gravitate toward whatever self-aspect was made salient by the behavioral context (p. 126).

Over time, the mirror became the most frequently used manipulation of self-awareness--it was relatively inexpensive and easy to set up and transport. However, the concept of a mirror as a method for studying the self long pre-dates the self-awareness research begun in the early 1970s. Sayons and Brown (1953) described an apparatus which was developed for "the investigation of the self" and "especially for the study of autistic factors at work in the perception of the self" (p. 86). This mirror was devised with the objective of obtaining a reflection which could be

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distorted at the will of the subject to produce changes in "self-portrait." The authors concluded that "such distortions would need to be firmly localized and achieved in such a way . . . to be measurable and recordable" (p. 86). Unfortunately, there is no evidence that such a device was used for further research (at least not in the published literature).

Because of the increasing use of the mirror as the favored device for manipulating self-awareness, the question of validity soon arose. Wicklund (1975) originally believed that manipulation checks for self-focused attention were "probably worthless in objective self-awareness paradigms" (p. 267). He stated that an ideal manipulation check should give evidence of subject attention moving to a salient dimension of self. Therefore, after the primary dependent measure was completed, subjects could then be asked their degree of self-consciousness with respect to that dimension. However, theory would also predict that any direct question of that kind would bring attention directly to bear on that dimension with the result being "a washing-out" of the prior manipulation. The subject might simply be using the experimental manipulations, themselves, as cues for the appropriate answer (pp. 267-268).

Other researchers have made attempts to devise manipulation checks for the mirror. Geller and Shaver (1976) used a version of the Stroop Color-Word Test, finding

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that color-naming latencies for self-relevant words were increased by the manipulation but latencies for other words were not. Davis and Brock (1975) and Carver and Scheier (1978) determined that self-awareness manipulations resulted in an increased tendency to use self-related language. The manipulation check developed by Davis and Brock (1975) and later refined by Wagner and Guiliano (1981, in Stephenson & Wicklund, 1983) assumed that self-focused attention would be reflected in the number of first-person, singular pronouns (e.g., I, me, my) selected by the subject. The Stephenson and Wicklund study revealed that subjects in the self-awareness condition selected proportionally more self-pronouns than group pronouns in contrast to control subjects (p. 66). Carver and Scheier (1978) demonstrated that similar findings using Exner's (1973) Self-Focus Sentence Completion blank (SFSC) for both mirror and audience manipulations (Davis & Brock, 1975) had obtained similar results with a camera, as well as a mirror.

The use of an audience--or audience presence--as the self-awareness manipulation has been more infrequent than that of mirror or camera. To this writer's knowledge, no work to date has attempted to investigate the effects of the presence of only one additional person as compared to the effects produced by other methods of inducing a heightened self-awareness. However, there is evidence that experimenter presence may be a non-manipulated source of

self-awareness due to the experimenter-subject relationship as one in which the experimenter controls much of the situation, behavior implying that the subject is "an object in the world." An evaluative quality--the possibility that the experimenter will be (or is) evaluating the subject--would provide an additional source of such self-awareness (Duval & Wicklund, 1973). This study will utilize such findings, as well as those of audience effects, to purposely construct a setting in which the experimenter-subject relationship becomes the source of heightened self-awareness for that particular experimental condition.

As mentioned, early self-awareness research suggested that any manipulation reminding individuals of themselves would serve almost interchangeably in such studies. During the past eight or nine years, researchers have begun to question this original belief. Paulus, Annis, & Risner (1978) investigated task performance and palmar sweating in response to mirror presence or audience presence, combined with varying degrees of evaluation apprehension. Results indicated that audience presence increased palmar sweating while mirror presence resulted in a decrease in that physiological measure. These results suggest that "potentially different psychological processes may underlie the effects" of audience and mirror. Paulus et al. speculated that the reaction to the audience may indicate an increased vigilance to a stressful environment, while

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response to mirror presence may suggest decreased attention to the environment and increased attention to self, "consistent with the findings of Innes and Young" (in Paulus et al., 1978).

Buss (1980, in Kimble, Hirt, & Arnold, 1985) contended that mirror presence produces a "private self-awareness" (an introspective state analogous to private self-consciousness), while the presence of an audience induces a "public self-awareness."

Carver and Scheier (1981) stated that both a mirror and the presence of an observer can increase self-focus, and these two stimuli may under some circumstances exert similar influence over overt behavior (p. 300). Yet, mirror and observer should not be treated as identical for a number of reasons:

- (1) One clearly "feels" different when alone before a mirror than when in the presence of another individual.
- (2) The evidence from the Paulus et al. (1978) study indicated different physiological reactions when in the presence of each stimulus.
- (3) The evidence that the two stimuli at times exert different behavioral effects, as well, has been discovered by a number of researchers (e.g., Innes & Young, 1975, in Carver & Scheier, 1981).

Scheier and Carver (1983) stated that it now appears that manipulation mirrors "placed frontally" heighten

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awareness of private self-aspects, while cameras and audiences serve to heighten awareness of public aspects of self. Hass (1984) investigated subjects' perspective in drawing "E"'s on their foreheads. Under self-awareness conditions produced by a video camera or an audiotape (where subjects believed that their responses would be taped), the "E" was drawn toward the perspective of outside observers. Additionally, when situationally-induced high focus was low, those high in public self-consciousness were more likely to draw the "E" from an external perspective. No manipulation was used which would theoretically induce a "private" self-awareness.

Evidence of a mirror inducing a "private" self-attention can be found in the work of Carver, 1975; Diener and Wellborn, 1976; and Pryor et al., 1977, all in Scheier & Carver, 1983) in which individuals exposed to a mirror were more likely to adhere to their internally-held attitudes and beliefs (p. 144). Studies by Scheier and Carver (1977) and Scheier, Carver, and Gibbons (1979) and indicated that the presence of a mirror increased the awareness of subjects of their affective and sensory experiences.

As suggested in the Hass (1984) study, dispositional self-consciousness has conceptually replicated the public versus private self-awareness effects. Scheier and Carver (1983) suggested that cameras (as well as presumably audiotapes and audience/observer presence) seem most

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comparable to the combination of high public self-consciousness and low private self-consciousness, while a mirror would seem comparable to high private and low public self-consciousness. Data from Scheier and Carver, 1980, Experiment 3 (in Scheier & Carver, 1983) supported both hypotheses.

In summary, in intuitive and conceptual, as well as empirical terms, self-awareness manipulations appear to produce somewhat different effects in many circumstances. The literature supporting this statement seems almost unanimous in its treatment of the mirror as a type of stimulus quite distinct from stimuli such as audiotapes, cameras, and audiences and observers.

Self-Awareness in Clinical Settings

The clinical setting is one which would appear to heighten self-awareness virtually by definition. In a traditional therapeutic setting, self-awareness might be conceived of as of the product of two interacting sources: (1) the presence of a clinician (2) asking a client questions of a highly personal nature; making comments, observations, and interpretations of the client's behavior, feelings, and thoughts (generally encouraging self-exploration). Thus, the presence of a potentially evaluative other, the self-exploratory focus, and the nature of the questions, observations, and interpretations all produce in the client a heightened self-attention. It also

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appears reasonable to suggest that these sources of self-awareness are not identical and produce somewhat different effects (although the interactional nature of the two must be kept in mind). Clearly, the presence of another person, a figure of authority, introduces the question of social/interpersonal concerns, which the content of the questions, etc., might not produce in the same fashion were the client merely reading them in a self-help book, for instance.

This study will include one condition in which the experimenter will ask direct, "personal" questions of the subject. While not structured as a therapy analogue per se, similarities, especially concerning the sources of self-awareness, seem obvious; for example, in the use of the experimenter in the room, as a figure of authority, asking such questions of a subject.

Investigations of self-awareness heightened by audio and videotape playback have been reported in clinical settings pre-dating the initial work of Duval and Wicklund. However, there appears to be a distinct lack of empirical and theoretical work published in the last 15-20 years despite the just-mentioned aspects of the therapeutic setting and process. Additionally, therapeutic strategies such as "focusing" (Gendlin) encourage individuals to focus at the moment on their emotions, the way their body is

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The use of audiotape and/or videotape playback techniques is sometimes a standard part of therapy for purposes of clinical training and as a source of feedback to the client or patient concerning aspects of behavior and other factors involved in self-presentation. Thus, such stimuli may be regarded as sources of self-awareness or self-confrontation in both therapist and client. Sanborn, Pyke, and Sanborn (1975) reviewed the literature pertaining to audio/videotape playback, often with clinical populations in inpatient and outpatient settings, in both individual and group treatment. In 1948, Freed (in Sanborn, Pyke, & Sanborn, 1975, p. 179) reported the experience of playing back for two patients audio recordings of therapy sessions. One patient was described as gaining in "self-objectivity" while, in the other case, Freed believed that a greater level of anxiety had been produced. Epstein (1955, in Sanborn, Pyke, & Sanborn, 1975, p. 179) investigated unconscious self-evaluation using voice recordings with both a normal and a schizophrenic population. He found that self-judgements were generally more favorable judgments made by others, irrespective of the presence of severe psychopathology. In 1965, Moore et al. (in Sanborn, Pyke, & Sanborn, 1975, p. 179) advocated the use of television and videotape as a therapeutic tool, noting that a therapy group

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which had viewed their taped weekly sessions showed "very striking improvement" as opposed to the group who had never viewed their sessions. Revich and Geertsma (1968, in Storms, 1973, p. 173) reported increased accuracy in patients' knowledge of their own behavior after videotaped self-observation. Danet (1968) noted that for some patients "a visual image carries more weight than innumerable verbal confrontations" and reported an experiment in which there was a significant interaction between self-viewing and "improvement." In a private psychiatric setting, patients viewing themselves on television showed a greater level of improvement than other groups who did not view themselves (p. 247). Danet cautioned that self-observation experiences might be "potentially anxiety producing" (p. 249), an observation previously noted. Parades et al. (1969, in Sanborn, Pyke, & Sanborn, 1975, p. 179) gave audio/visual feedback to a group of alcoholics, giving them feedback concerning their behavior while under the influence of alcohol. Feinstein and Tamerin (1972, in Sanborn, Pyke, & Sanborn, 1975, p. 181) used videotape feedback with alcoholic patients, although these authors found that improvement "deteriorated" after the end of the experimental sessions.

Bailey and Sowder (1970) also described the utilization of audio/videotape stimuli as adjunctive techniques to facilitate the therapy process, the most important factor

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appearing to be client self-confrontation. The authors stressed the significance of presenting to clients feedback about themselves. This process was felt to be an aid in "overcoming resistance and lifting repressions . . . promoting insight, self-awareness, and a realistic confrontation with self-contradictions" (p. 133). Alderfer and Lodahl (1971, in Storms, 1973, p. 173) found that videotape playback in T-groups increased subjects' "openness" ("willingness to explore the internal meaning of and to accept personal responsibility for an attitude or behavior"). Some "negative consequences" of self-confrontation were again noted. In the case of patients experiencing temporary setbacks, Storms found that depression increased in individuals already depressed and that there was "some increase of symptoms characteristic of their disorder" in "neurotics" (p. 173). Additionally, Storms cautioned that when utilizing this type of feedback, the therapist must take care to help the patient gain "an accurate sense of real and viable situational explanations for their behavior," as well as psychodynamic interpretations.

A study by Damsteegt and Christoffersen (1982) sought to demonstrate that clients became more self-focused (i.e., attentive to self) in the initial stages of counseling and that increased self-focus led to (1) temporarily lowered, but then increased self-esteem in conjunction with (2)

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greater behavior change, and (3) increased internality of attributed causation for the problem. Both "trait" self-consciousness and "state" self-awareness were utilized with three types of counseling conditions varying the amount of state self-awareness [i.e., the extent to which self-focus was promoted within the counseling paradigm, or in the control condition (no counseling received)]. Results indicated an interaction between trait and state dimensions such that subjects high in trait self-awareness (private self-consciousness) were most affected by the interview which sought to enhance state self-awareness, although subjects low in private self-consciousness were the only ones exhibiting changes over time in behavior and self-satisfaction (all subjects had previously identified themselves as having "serious" or "very serious" problems with procrastination). Unfortunately, the limited number of sessions (two) involved raises concerns about the concept of "changes over time" as applied to this study. Yet, the authors are among the few researchers currently attempting to explore the self-awareness experience within a more clinically oriented paradigm. In addition to individual and group therapy modalities, the use of audio/videotape feedback has been utilized in marital and family therapy and with children (Sanborn, Pyke, & Sanborn, 1975), although these cases have been less well documented.

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The mirror is much less obviously an integral facet of the clinical setting. This stimulus has for centuries, however, fascinated individuals. Roheim (in Elkisch, 1957) mentioned the custom that children, especially infants, should not be allowed to look into a mirror, stating that these superstitions and taboos "betray man's unconscious awareness of the insidious dangers of a narcissistic fixation and an attempt at protection against it." The mirror has played a great role in animistic religion, folklore, fairy tale, and myth. Many writers have used the mirror symbolically or allegorically in various "meaningful" ways which convey the feeling that in dealing with the mirror phenomenon, "we are dealing with something enigmatic, uncanny, with a thing that has been made the screen for man's projections of the mysterious and the uncanny" (p. 238). Roheim also contended that in psychiatric patients, the fear of loss of self (or "soul") plus attempts to retrieve this loss make the mirror fascinating to such individuals (p. 243). The mirror has played a role seeming to be related to the "narcissistic character of their illness" (i.e., psychotic and borderline). Roheim noted that in one case of a "borderline schizophrenic" male, "mirroring activities always occurred at the time of increased panic, when he was acutely afraid of losing his maleness, his self-identity." The patient seemed "meaningfully to combine auditory and kinesthetic reactions

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Sanborn, Pyke, & Sanborn (1975) described a 1960 study by Cornelison and Arsenian investigating responses of psychotic patients to their photographic self-images. These patients were found to pay considerably more attention to the photographs of themselves than to other objects, people, or events. Additionally, after viewing their own pictures and discussing the experience with the authors, "some patients showed dramatic improvement in psychotic organization" (p. 179).

Goldberg (1985) described the work of L. H. Schwarz and S. P. Fjeld (1968, in Goldberg, 1985, p. 244) in which both clinical ("neurotic, psychotic, sociopathic") and "normal" populations were used (groups of 16 each, 8 males and 8 females). Subjects were asked to concentrate on their image in a mirror in a dimly lit room and to "report freely what they saw, felt, or thought during a 30-minute session" (p. 244). All remarks were recorded. Results suggested that most subjects experienced gross distortions of their perceived reflections in a multitude of strange ways

. . . with . . . [i]n general, the abnormal groups experiencing the most universal perceptual distortions including experiences of fear, unusual physical symptoms, projected feelings of aggression, and erotic fantasy (p. 245).

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The authors felt that such work with a mirror involved "elements of hypnotic induction", thus a high rate of fantasy formation seen (p. 245).

Frenkel (1980) described a "Mirror Image Projective Technique" (MIPT) to be used as a "diagnostic therapeutic instrument" which is "within easy reach of any psychotherapist." The patients or clients are asked to focus on their mirror image. When they become "inducted into a mirror trance," they are asked to free associate to their image. Frenkel believed that in this manner "defenses are unblocked" and the unconscious mind "is permitted to flow, bringing forth vital feelings and thoughts of recent and past experiences" (p. 380). As clients focus and unfocus intermittently upon their image, they will "venture from reality to the unconscious and back." The individual becomes a "participant observer" while using the mirror. Frenkel also mentioned the use of a "multicolored" mirror to decipher the "emotional meaning of the color for the individual" (based on the assumption that emotion is directly related to color).

Frenkel (1980) has also claimed that the mirror is an "anti-depressive instrument" and may even help to "control hallucinations" and "decrease anxiety" (p. 383). In depression, the mirror "may provoke the patient to cry, decreasing depression in symptomatic relief." With anxiety states, responses may "gush out" with the result of anxiety

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decrease or disappearance. Finally, Frenkel expressed the belief that the mirror experience

. . . causes the unconscious mind to release both the structural ("black" and "white" mirror experience) and the emotional ("color" experience) reactions "from the brain via the process of videotape recall" (p. 383).

Although Frenkel did not offer either details of his observations or data from empirical investigation, he did suggest that the mirror is potentially an extremely powerful stimulus within a clinical setting. He also appears to be among the first (with Elkisch, 1957) to speculate on the process involved when individuals explore their own reflected image.

The use of a mirror in therapeutic endeavors was described by Beck and Emery (1985). Therapists were urged to use mirrors in their offices "to help patients become aware of their thinking" (p. 191). The authors explained that an individual, while looking in a mirror, may be able "to identify anxiety-producing thoughts" of which they were previously unaware. The individual could then be asked to "rapidly free-associate" to thoughts coming to his or her mind while looking in the mirror (p. 191).

During the past four years, Mahoney and his colleagues have completed three projects utilizing the concept of "mirror time" (Mahoney, M. J., Personal Communication, March 19, 1990). The first by Blanco, Guidano, Mahoney, and Reda

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in 1985 was a collaborative study (the first of three) which investigated the use of "mirror time" in developmental cognitive therapy. Data were collected from clinical groups (phobic, unipolar depression, obsessive-compulsive, eating disorder) and one non-clinical group. After a 5-minute resting baseline time, subjects spent 15 minutes looking into a mirror and responding to questions about their feelings and perceptions. Responses were recorded. Four measures of physiological activity were obtained (heart rate, GSR, muscle tension, peripheral skin temperature). Results suggested that clients of different diagnostic groupings seemed to show different patterns of physiological organization and to also exhibit different physiological patterns of reaction to the "mirror time" procedure. Non-clinical subjects also exhibited a pattern of temporary physiological de-synchronization for a brief period following the introduction of the mirror. Within the clinical groupings, differential response was noted. Data were analyzed in terms of level of correlation between measures of physiological activity.

A second study by Mahoney, Gabriel, and Craine in 1987 (Mahoney, M. J., Personal Communication, March 19, 1990) was conducted in the laboratory, utilizing volunteer subjects who were randomly assigned to one of three groups: "positive self-focus," "negative self-focus," or "other self-focus." Again, a resting baseline period in which

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physiological data were collected was followed by the presentation of a mirror. Subjects were asked to reflect on their image and respond to four standardized questions. The "positive self-focus" questions began: "What do you like about _____?" and the "negative self-focus" questions began: "What do you dislike about _____?" The "other focus" group viewed slides of human faces and were instructed to make a mental note of a liking or a disliking of each face. A recognition test was given incorporating a quarter of the original 80 faces. Responses in all groups were recorded. In addition to physiological measures, measures of mood state and self-esteem were also used. Results indicated a degree of variability in all groups great enough that it did not allow for any significant differences to be found.

A third study was completed by Gabriel in 1990 (Mahoney, M.J., Personal Communication, March 19, 1990) using the same format as the Mahoney, Gabriel, and Craine work with the exception of the introduction of two conditions (consumption of alcoholic or non-alcoholic beer) which resulted in a 2 x 3 factorial design. All subjects had been told that the beverage was alcohol and those in the "alcoholic beer" group ultimately achieved blood alcohol levels of .0425. Subjects had been assigned to the same conditions described in study #2. Dependent measures consisted of physiological data, a measure of self-esteem,

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and a "personal experience report." Data were analyzed using analysis of covariance. Only one main effect and interaction were noted to be significant with the remainder of the variance sizable, especially in the "control" group. Mahoney hypothesized that individual differences in response may have been sufficiently great enough to make group-based generalizations extremely difficult.

Self-Perception and Self-Awareness

This study will be concerned with the self-perception of internal states resulting from heightened self-awareness. In a very real sense, this is an exploratory investigation attempting to compare directly the experiences produced by varying types of self-awareness stimuli along three dimensions: perception of autonomic arousal; of mood; and its intensity, and of current cognitive experience. As will be noted, the hypothesis that an increase in self-directed attention results in an increased awareness of internal states is not unanimously supported. Yet a large body of evidence has pointed in this direction, and this study will further explore its ramifications.

Autonomic State. Evidence concerning physiological reaction to self-awareness states appears complex. Holzman et al. (1966, in Sanborn, Pyke, & Sanborn, 1975, p. 179) reported that when placed in a self-confrontation (listening to own voice) situation, "most people" experienced a psychophysiological reaction, "even when their voices were mixed

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with other voices and the subject did not recognize his or her own voice." Holzman also argued in favor of including instruments in future research to measure perception of physiological change. Sackheim and Gur (1978) stated that a good deal of evidence from other studies, as well as Holzman et al., involving auditory feedback of subjects' own voices (e.g., Holzman, Rousey, & Synder, 1966; Olivos, 1967; Gur & Sackheim, 1976, in Sackheim & Gur, 1978) suggested that a self-confrontation experience leads to increased autonomic arousal (p. 152). And, as mentioned, Paulus, Annis, and Risner (1976) found that palmar sweat decreased in the presence of a mirror but increased in audience presence. Carver (1979) pointed out that autonomic arousal is not considered a unitary phenomenon, that some physical indices may be more usefully construed as providing information concerning attentional and information processing phenomena than providing information about arousal. Thus, a decrease in palmar sweat may reflect an inward focus of attention and "the simultaneous suppression of environmental input" (p. 1271).

Other researchers (e.g., Wegner & Guiliano, 1980) have even suggested that the relationship between arousal and self-focus has not been viewed in the proper sequence--the Wegner and Guiliano hypothesis stated that arousal may cause self-focus, and their work provided support for this sequence.

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The present study will not be concerned with the actual presence or absence of physiological arousal or differentiation of measurement but rather with the perception of autonomic states prior to and immediately following an experience of heightened self-awareness.

"Autonomic" refers to a part of the nervous system which involves the cardiovascular, digestive, reproductive, and respiratory organs and operates outside of consciousness, controlling life-sustaining functions that include heart rate, digestion, and breathing. Perception of current autonomic state in this study will refer to the individual's awareness and report of certain physiological changes such as breathing becoming rapid or a lump in the throat, which may take place related to the autonomic nervous system.

Reports by Mandler and his associates (Mandler, Mandler, & Uviller, 1958) in the late 1950s indicated the existence of a self-report measure of perceived autonomic functioning and "provided initial evidence of the potential utility as a 'bridge' between physiological activity and self-reports of anxiety" (Borkovec, 1976, p. 290). Borkovec and his colleagues used the original Autonomic Perception Questionnaire (APQ) items with both college and clinical samples, males and females, although item scales were now rated by circling the appropriate number, 0-9, reflecting the rater's experience of that reaction. The APQ has often been used in studies of "anxiety" in its "trait" version, in

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work selecting subjects for self-report of high levels of autonomic perception (e.g., Borkovec, 1976; Borkovec & O'Brien, 1977). It may also be modified to a "state" version, measuring the extent to which individuals are currently noticing various autonomic cues in a given situation. This study will use the "state" version of the measure.

Representative items on the APQ include the following statements:

- (1) Face becoming hot
- (2) Muscles becoming tense
- (3) Changes in breathing
- (4) Difficulty in talking

Subjects then used a 0-9 rating scale to indicate the extent to which such autonomic reactions were perceived.

Cognition. To term something "cognitive" is to refer to the mental process of comprehension, judgment, memory, and reasoning. "Cognitive" would then be contrasted with "emotional" and "volitional" processes.

To this writer's knowledge, little investigation has been conducted concerning the more cognitive reactions to self-awareness. Kimble, Hirt, and Arnold (1985) reported a study involving self-consciousness, self-awareness, and memory in a social setting in which a pattern emerged "suggesting that factors dividing one's attention in a situation" (primarily through causing one to focus on

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him/herself) "are what make remembering people's names and characteristics difficult" (p. 68). Zehr (1982, in Kimble et al., 1985, p. 68) found that subjects with high "trait public self-consciousness had the greatest difficulty [of all subjects] remembering others' characteristics." Thus, it appears that, in a self-confrontation or self-focus situation, "something" may happen of a more cognitive nature, although likely mediated by physiological and affective changes. As previously mentioned in the work using a counseling setting (Damsteegt & Christoffersen, 1982), there is also a suggestion that a self-awareness experience may result initially in a lowered self-esteem. Yet this hypothesis would seem highly situation-bound. Ickes, Wicklund, & Ferris (1973, in Brehm, 1976, p. 206) found that when positive feedback was added to the experience of a heightened self-awareness, self-esteem was enhanced in the presence of a mirror. Feedback seems to be an intensifying factor, driving self-regard in the direction of the feedback (positive or negative).

When exploring reactions to the self-awareness experience, how individuals perceive themselves before and after such an experience, it would appear necessary to sample as wide a variety of internal states as possible. Thus, in addition to mood and autonomic reactions, a sampling of changes in cognition seems vital to this process.



The Current Cognitions Questionnaire (CCQ) is an exploratory measure developed by this writer for this study (Isenberg, 1985). Items focus on areas of cognitive activity such as cognitive anxiety, worry, control, cognitive interference, self-efficacy, and self-esteem. Representative items include the following:

- (1) I am distracted by thoughts.
- (2) I am worried.
- (3) I believe that I have control over my actions.
- (4) I wonder what others think of me.
- (5) I believe I can achieve my goals.

Subjects rated their current state on a Likert Scale (0-9) similar to that of the APQ.

Affect. The term "affect" refers to the outward manifestation of feelings, tone, or mood. The term "mood" may be defined as a pervasive and sustained emotion which, if extreme, can significantly color an individual's perception of the world.

Perhaps the topic of affect has been the most recently and thoroughly pursued of the self-awareness responses. For the most part, researchers have been in agreement on the statement that self-focused attention increases an individual's awareness of affective reactions. Wicklund (1980, in Gibbons, 1983, p. 531) suggested that the self-dimensions which are more dynamic, such as emotions or affect, are most likely to capture the attention of self-

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focused individuals. These dimensions are then more likely to have an effect on behavior than are "more static and less salient dimensions such as values or attitudes." Two studies by Gibbons, Smith, Ingram, Pearce, & Brehm (1983, in Gibbons, 1983, pp. 532-536) with alcoholics and depressives in a VA hospital indicated that self-focused attention appeared to exacerbate negative mood states. Greenberg and Musham (1981, in Franzoi & Brewer, 1984, p 537) found that subjects scoring low in private self-consciousness avoided self-focused attention (i.e., mirror-gazing) following an unpleasant experience but engaged in self-focus following a pleasant experience. Wolff (1943, in Sanborn, Pyke, & Sanborn, 1975, p. 179) studied individuals' impressions and recognition of their own voices, gaits, profiles, hands, and handwriting. Individuals' judgement of their self-productions was found to be "more intense" than their judgements of the same products by others. And Danet (1968), speaking of the power of the self-awareness experience (p. 250), noted a 1967 study by Boyd and Sisney which suggested that "the impact of even brief self-image confrontation is sufficiently great to be measurable even on a relatively crude research instrument having questionable validity."

A number of more recent studies have been conducted for the purpose of directly assessing change in specified affect as a result of heightened self-awareness. Scheier (1976)

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investigated "angry aggression." Angered persons made self-aware aggressed more intensely than did such individuals not made self-aware. Self-awareness also tended to increase the aggression level of all angered persons, regardless of whether or not they believed that provocation justified aggression.

Scheier and Carver (1977) expanded this research to explore four different affective states: attraction, repulsion, elation, and depression. In each study, self-focused attention increased subject responsiveness to the transient affective state. In addition, experiments 2 and 4 replicated the self-awareness effects using persons scoring high in private self-consciousness versus those scoring in the lower range. In a drug placebo study, Gibbons et al. (1979) found that self-focused attention could enhance both the presence and the absence of affect, depending on whether the person was affectively aroused. Neither "mirror" nor "no mirror" subjects reported feeling target symptoms when correctly informed of the effects of the drug and self-aware subjects who were misinformed actually reported a lower incidence of symptoms. A second suggestibility study (dealing with bodily states) conducted by Scheier, Carver, and Gibbons (1979) indicated that self-aware subjects appeared less susceptible to bogus information, a finding replicated using the dispositional private self-consciousness. Results suggested that as persons focused

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inward (or as persons more strongly exhibited the trait of habitually focusing inward), they seemed to become more aware of the actual stimulus quality and reported this rather than the anticipated (suggested) quality.

Two self-awareness studies have focused on fear as the emotion under investigation. Carver, Blaney, and Scheier (1979) found that heightened self-focus led to an overall increase in the awareness of anxiety-based behavior and in momentary sensations of fearfulness and inadequacy. It was further discovered that for subjects with a moderate fear of snakes, expectancy for success (in approaching the snakes) became the refocus of attention to the behavior goal comparison, resulting in a lack of behavioral deficit. Scheier, Carver, and Gibbons (1981) also used fear of snakes to divide a subject population. Both a mirror and dispositional private self-consciousness were utilized. In the latter, the specific variable became the fear of an anticipated electric shock, the dependent measure being whether subjects volunteered to continue the research. General results of both experiments indicated that the presence of affect overrode the tendency of self-focused attention to increase behavioral conformity to an experimentally established standard. The authors concluded that "presumably, self-focused attention increases a person's awareness of existing affect, whether positive or negative" (p. 14).

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While most research has suggested that self-awareness or self-directed attention tends to cause an increase in awareness of internal states (including affect) and then reduce suggestibility effects (in the mentioned studies), there have been instances of failure to support these findings, as well as alternative hypotheses proposed. Gillis and Carver's (1980) study of subjects' estimates of their own heart rates after exercise failed to support the hypothesis of an increased awareness of emotional states and greater accuracy of perception under conditions of self-awareness. However, the authors do suggest that perhaps "heart rate" was not a good "channel" for individuals to monitor because of the possible greater difficulty in gaining subjective access to this sort of information as opposed to muscle tension, etc. (p. 120).

Levine and McDonald (1981) provided a direct challenge to the suggestibility studies of Gibbons et al. (1979) and Scheier et al. (1979). The authors criticized these studies for accentuating external demands, rather than the placebo effect, per se. Levine and McDonald's study attempted to minimize demand effects and tested the original hypothesis of greater accuracy of self-report under conditions of self-focus (on bodily state). Results indicated that when the external demands were minimized, self-aware subjects did not appear to rely on internal cues any more than did non-self-aware individuals, nor were self-aware individuals more

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accurate regarding their bodily states. Levine and McDonald concluded that self-aware individuals may be less susceptible to external demand rather than being more veridical concerning internal states. Only when a conflict of some sort was present (i.e., a discrepancy between the actual situation and the experimenter's prior statement) did there appear to be support for the hypothesis of enhanced awareness of internal states due to self-focus (p. 659). Scheier (Personal Communication, November 4, 1985) responded to the Levine and McDonald work by indicating concern regarding certain aspects of the study procedure, wondering if it had been possible to assess subjects' internal states "accurately."

Lanzetta, Biernat, and Kleck (1982) suggested that a facial feedback mechanism may be responsible for reports of greater awareness and perception of more intense affect when in the presence of a mirror. In other words, subjects may use their facial cues, rather than perceiving their internal state, as indications of feelings of arousal and emotion. The authors' study found that the presence of a mirror attenuated self-reports of affective arousal for both negative and positive stimuli. Facial expressions were recorded and a "facial inhibition" evidenced, leading Lanzetta et al. to conclude that there were fewer facial cues, thus less perception of affect and its intensity (p. 57). Carver and Scheier (1981) suggested that subjects'

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awareness of being videotaped might have been the source of these self-reports because people tend to suppress public expressions of feelings. If subjects felt that their display of emotion might be public, they may have suppressed their facial movements, leading, in turn, to less reported affect. Scheier and Carver also emphasized the findings of other studies in which target symptoms (i.e., heart rate, sweaty palms, chest constriction) were such that subjects were unlikely to gain relevant information by studying the face and where dispositional self-attention (private self-consciousness) was used to conceptually replicate mirror effects (p. 115). However, Scheier (Personal Communication, November 4, 1985) observed that the report was unclear regarding whether an increase in private or public self-attention was induced.

Finally, Gibbons (1983) has noted that "self-aware people by definition are internally, not externally, focused." Therefore, while they may be more in touch with "what is happening inside," they are "just as likely not to notice the external stimuli causing those internal reactions . . . [T]hey are well aware of how they feel, but they may not always be as clear on why they feel that way" (p. 526).

This study utilized a measure of current mood defined previously. Russell (1979) developed a mood checklist based on the hypothesis that "affective space is bipolar" (p. 345). Individuals can feel both happy and unhappy or

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aroused and sleepy at the same time. Russell's sample of moods was chosen to assess primarily opposite ends of pleasure-displeasure, arousal-sleepiness, and dominance-submissiveness, "since these dimensions have been suggested by a variety of sources as basic dimensions of affect" (p. 347). Eleven sets of adjectives (total of 58 items) comprise the checklist with instructions to the subject to use the list of words and phrases to describe "your feelings today." Russell recommended the use of the Meddis (1972) Format for response, believing it to provide the best distribution of response (p. 345):

XX	X	V	VV
(definitely do not feel)	(do not feel)	(slightly feel)	(definitely feel)

Russell calculated measures of internal consistency reliability for eleven scales (sets of adjectives). Three scales showed moderate reliability: high activation (.59 to .69), dominance (.68 to .73), and submissiveness (.68 to .73). All other scales are reported to show "adequate" (p. 349) reliability (.70 to .95).

Mayer and Bremer (1985) reported the use of this mood adjective checklist (with the Meddis Response Format) in a study of mood change and change in performance in cognitive and psychomotor tests. These authors wished to use a

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measure sensitive to the bipolar nature of affective space because a number of their memory tasks hypothesized to indicate pleasantness of mood were combined with psychomotor tasks hypothesized to reflect arousal.

Purpose of the Study

The purpose of this study was the investigation of differences in perception of internal states resulting from the differential structure of the self-awareness experience.

Five experimental conditions were established to create paradigms in which there were at least three non-manipulated sources of self-awareness (please refer to Table 1 for a summary table of sources of heightened self-awareness for each condition in this study): (1) participation in an experiment, (2) receiving instructions from the experimenter, and (3) completing study measures.

Additionally, conditions were structured to include the differential production of heightened self-awareness: (1) mirror and listening to "personal" questions, (2) experimenter in room presenting "personal" questions to subjects who then responded, (3) mirror and recording of subject responses, (4) subject listening to "personal" questions, and (5) subject listening to "neutral" questions. The "personal" or "neutral" questions were designed to require the subject to focus on her responses and to think about or to visualize these responses. In two conditions, subjects were required to also verbalize the responses.

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Table 1

Sources of Heightened Self-Awareness by Condition

Source	Condition				
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Participation in an experiment*	X	X	X	X	X
Completing instruments*	X	X	X	X	X
Instructions from experimenter*	X	X	X	X	X
"Personal" questions	X	X	X	X	
Mirror present	X		X		
Experimenter in room		X			
Tape recorder for Ss to respond			X		
"Neutral" questions					X

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By obtaining information concerning any changes in the perception of internal states, such material can be quite valuable for the clinical setting in terms of identifying what specific types of self-knowledge might be gained from which setting and under what circumstances. As previously mentioned, the clinical setting by definition, carries with it a variety of sources of self-awareness. This study contributed to a new body of knowledge concerning some of the reactions individuals have to such a state.

This study expanded upon some of the earlier social psychological work in focusing on affect and self-awareness. It differed from this research in terms of (1) not inducing affect or in suggesting that the subjects be looking for a specific type of reaction and (2) utilizing specific self-report measures chosen in this study to reflect subjects' self-perceptions. Furthermore, this study expanded upon earlier work concerned with affect and arousal to include the investigation of perceived cognitive change as well. Data obtained from the Self-Consciousness Scale (a dispositional measure which has, as mentioned, often been used in self-awareness research) was then correlated with an increased amount and variety of states collected from affective, physiological, and cognitive spheres.

This study also differed significantly from present and previous clinically oriented work. While including two conditions which utilize a mirror, this stimulus was not the

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focus of this study [as has been the work of Frenkel (1980) and currently Mahoney and his colleagues (1986; 1987; 1990)], nor was the focus only the self-awareness experience produced in the interpersonal setting (Damsteegt & Christoffersen, 1982). Both of these paradigms comprised part of this work, and a slight variation of the Mahoney, Guidano, Reda, Amoni, Caridi, and Blanco (1985) procedure questions were used for the "personal" questions. And as an important point of note, in addition to different data being collected (from different dependent measures), these paradigms were directly compared to each other. At least one study previously mentioned (Schwarz & Fjeld, 1968, in Goldberg, 1985, p. 245) had utilized both a mirror and recording of subject responses, but the audiotape recording was not treated in the analysis and interpretation as an additional source of self-awareness. In 1985, Scheier (Personal Communication, November 4, 1985) suggested that future research involving affect and "manipulated self-attention" use different types of stimuli to directly compare the direction of affective responses, with theory suggesting, for example, that mirrors and cameras should drive affective responses in different directions.

This study has provided data for the exploration of the previously mentioned concepts of "public" and "private" self-awareness and the hypothesis that "private" sources of self-awareness tend to produce a greater (or increased)

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focus on one's internal states. It was hoped that this work would provide an empirical establishment of the various self-awareness paradigms as significantly different experiences.

Outline of Study Groupings

Subjects were divided into five experimental groups, each structured to induce a different self-awareness experience. The following list of conditions outlines the specific details of each setting. Instructions given to the subjects in each condition can be found in the Procedure section of this work. Measures administered will be identical for all groups.

A procedural diagram of the study is presented in Table 2, and the hypotheses appear in the following section.

The questions labeled "personal" in the descriptions of each group consisted of the following:

- (1) What is most important to you now?
- (2) What do you hope?
- (3) What would you like to change?
- (4) What are you aware of feeling now?
- (5) How would you describe this experience?
- (6) How do you feel about your responses to these

questions?

The questions labeled "neutral" dealt with aspects of higher education and consisted of the following:

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Table 2

Procedural Diagram of the Study, Pilot Work Through Experimental Phase

1 ----->	2 ----->	3 ----->
<p>Each experimenter ran two or three pilot subjects to gain practice in running the study and to obtain feedback concerning length of time, understandability of directions, etc. Recruited female volunteers from Introductory Psychology classes. Subjects called and scheduled for specific time for participation. Subjects given location of experiment and told that experimenter would call night before scheduled as reminder and to see if subject had additional questions. Experimenter arrived prior to subject and prepared room appropriately for condition to which subject was assigned.</p>	<p>After arriving for experiment, subject given rationale and consent form while still in hallway. Given instructions for completion of initial measures prior to entering room. Experimenter told subject that she would leave for several minutes and return when subject was finished.</p>	<p>Subject completed initial measures :[*]</p> <ol style="list-style-type: none"> (1) Offer Self-Image Questionnaire (2) Self-Consciousness Scale (3) Autonomic Perception Questionnaire (4) Current Cognitions Questionnaire (5) Russell Mood Adjective Checklist <p>alone at a desk outside door to room. Waited for experimenter to return. Experimenter saw subject finished, came back to subject, gave appropriate instructions for condition subject was assigned.</p>
4 ----->	5 ----->	6
<p>Subject entered room and began to follow instructions (also in printed form on desktop). In Condition 2, the experimenter followed subject into room, sat in second chair, and proceeded with instructions and experimental questions.</p>	<p>After completing final question, subject began completing packet of post-task measures as instructed. In Condition 2, experimenter gave subject instructions for completing the packet, then left room. When measures completed, subject left room as instructed.</p>	<p>Experimenter gave final instructions for completion of "open-ended" questions placed on desk. Left subject for several minutes. Experimenter returned; asked subject if she had any questions, comments; gave verbal, then a written copy of debriefing; signed credit card; and obtained names and addresses from any subjects interested in receiving copy of final study abstract.</p>

* Note: During the experiment, measures 3, 4, and 5 were administered in counterbalanced order for all subjects.

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- (1) How important do you feel receiving a college education is to a secure future?
- (2) What major do you think is the most desirable for finding a good job after graduation?
- (3) How necessary do you think is it to go to graduate school?
- (4) What do you feel are some of the advantages of going to college at a large university?
- (5) What do you think are some of the educational disadvantages?
- (6) Would you vote for a candidate largely on the basis of his or her position on student aid?

The "personal" questions were originally developed by Mahoney et al. (1985) as part of an "intermediate mirror experience."

Condition 1. Mirror only/"personal," pre-recorded questions. In this condition, subjects were seated at a desk, facing a large mirror which was leaning against the wall on top of the desk. They were instructed to listen to a series of questions on tape (refer to list of questions) and to simply THINK ABOUT what their responses might be. Subjects controlled the time taken by pressing the "PLAY" button to hear the question and the "STOP" button to allow for time to think about the response, then the "PLAY" button when ready to move on to the next question. All instructions were also in printed form on a sheet on top of

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the desk to make it unnecessary for the subjects to have to remember exactly verbal instructions given outside the room. Printed instructions also appeared in Conditions 2, 3, 4, and 5.

Condition 2. Experimenter only/"personal" questions asked directly. The experimenter entered the room with the subject, and both took seats in chairs beside the desk. The experimenter then gave the instructions to the subject and began to ask the same "personal" questions as in Condition 1. The subject had some control over the timing once again by virtue of deciding at what point to end her response. The experimenter moved to the next question only after the subject completed each response. Printed instructions for completing the second packet of questionnaires had been placed on the desk.

Condition 3. Mirror and audio-tapes (2)/"personal" questions on tape. In this condition, subjects once again faced the mirror on top of the desk. Tape recorders were placed on top of the desk within easy reach. Recorders were marked #1 and #2. Recorder #1 contained the pre-recorded questions as in Condition 1. Recorder #2 contained a blank tape for recording subject responses. Subjects were instructed to first press "PLAY" and "RECORD" buttons on recorder #2 and to leave the tape running throughout the time they were in the room, pressing "STOP" only after they

completed their last response. Otherwise, procedure followed as in Condition 1.

Condition 4. No mirror/no experimenter/"personal" questions on tape. In this condition, the single source of manipulated self-awareness came from the pre-recorded "personal" questions. Procedure followed as in Condition 1 with the subject still seated at the desk and controlling the timing by pressing "PLAY" and "STOP" buttons.

Condition 5. No mirror/no experimenter/"neutral" questions on tape. Same setting as Condition 4, except that the nature of the questions (concerning "higher education") was impersonal.

As previously mentioned, for each condition it must also be recognized that by virtue of participating in an experiment, having received instructions, and having completed a series of pre-experiment questionnaires concerning perception of internal states, a certain degree of self-awareness was already induced. However, because measures were identical for all subjects, these non-manipulated sources of heightened self-awareness were considered to merely provide a slightly higher baseline from which to measure change. Additionally, the "personal" questions asked of four of the five conditions were also a source of self-awareness. However, because questions of this nature have importance for application to clinical

settings, as a model for self-exploration, they were thus seen as a vital component of this study.

Hypotheses

For the reader's convenience in understanding the hypotheses, the list of experimental conditions and measures are again presented:

Condition 1: Mirror only/"personal" questions
(pre-recorded).

No response recording.

Condition 2: Experimenter only/"personal" questions asked
directly of subject.

No response recording, although subject
responded directly to experimenter.

Condition 3: Mirror and two audiotapes/"personal" questions
(pre-recorded).

Responses recorded.

Condition 4: No mirror/no experimenter/"personal" questions
(pre-recorded).

No response recording.

Condition 5: No mirror/no experimenter/"neutral" questions
(pre-recorded).

No response recording.

Measures.

Pre-Task	Self-	Post-Task
1. Self-Consciousness Scale	Awareness	1. Autonomic Perception Questionnaire (APQ)
2. Two subscales from Offer SIQ	Condition	2. Current Cognitions Questionnaire (CCQ)
3. Autonomic Perception Questionnaire (APQ)		3. Mood Adjective Checklist (MAC)
4. Current Cognitions Questionnaire (CCQ)		4. Open-Ended Questions exploring subject perceptions of study and recent life events
5. Mood Adjective Checklist (MAC)		

Hypothesis 1. Subjects in Groups 1 and 4 will evidence greater change (before to after) scores on the dependent measures APQ, CCQ, and MAC than those subjects in other groups. **Theoretical basis:** "Private" self-awareness should be heightened in Groups 1 and 4 without direct competition for attention from social presentation concerns. Because a greater awareness of internal states is suggested as "private" self-awareness increases, these two groups should differ in pre- to post-scores from the other groups.

Hypothesis 2. Subjects in Group 1 will evidence greater change scores (same measures as Hypothesis 1) than subjects in Group 2. **Theoretical basis:** A fairly direct comparison of "private" versus "public" self-awareness, since responding verbally with/to another person should wash out the more inner-focused "personal" questions and social presentation concerns should become predominant.

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Hypothesis 3. Subjects in Groups 1, 2, 3, and 4 ("personal" questions) will evidence greater such change scores than those subjects in Group 5 ("neutral" questions). (Same measures as Hypothesis 1). **Theoretical basis:** Group 5 is seen as more of a "control" condition with listening to "neutral" questions the only manipulated source of heightened self-awareness. "Neutral" questions are theorized to produce far less increase in heightened self-awareness than "personal" questions. Therefore, Groups 1-4 should differ from Group 5 as additional sources of heightened self-awareness are added.

Hypothesis 4. Subjects in Groups 1, 2, and 3 will differ from subjects in Group 4 on change scores of all dependent measures mentioned in Hypothesis 1. **Theoretical basis:** "Personal" questions plus other sources of self-awareness should result in pre- to post-scores that are different from merely hearing the "personal" questions with no additional sources of increase of heightened self-awareness.

Hypothesis 5. Subjects in Group 3 will differ from subjects in Groups 1 and 2 on change scores of all dependent measures mentioned in Hypothesis 1. **Theoretical basis:** Condition #1 taps into "private self-awareness" while Condition #2 taps into "public self-awareness." Condition #3 combines "private self-awareness" (mirror) and "public self-awareness" (recorder). The competition between the



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two, this division of attention, should produce results--pre to post--differing from the more purely "public" or "private" conditions.

Hypothesis 6. Subjects scoring in the "high" [top third of the distribution (Buss & Scheier, 1976)] range in Private Self-Consciousness and participating in experimental Conditions 1 or 4 will evidence different change scores than subjects in these groups scoring "low" (bottom third of the distribution) in such self-consciousness (same measures as Hypothesis 1). **Theoretical basis:** The tendency toward a "private self-consciousness" disposition should be similar to the result of manipulated "private" self awareness and, thus, pre to post should differ between "high" and "low."

Hypothesis 7. Subjects scoring in the "high" [top third of the distribution (Buss & Scheier, 1976)] range of Public Self-Consciousness and participating in Condition 2 will evidence different change scores than those in this experimental group who score "low" (bottom third of the distribution) in such self-consciousness (same measures as Hypothesis 1). **Theoretical basis:** Condition #2 taps into public self-awareness; thus, subjects with a greater disposition to be publicly self-conscious should differ pre to post from subjects with less of such tendency.

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Chapter 2

Method

Subjects

One hundred and sixty-six female undergraduates were recruited from three sections of Introductory Psychology courses at a large midwestern university during the Winter and Spring terms of the academic year. All students participated in this study for extra credit as outlined in the university's "subject pool" regulations. A table of random numbers was used to assign subjects to one of five experimental conditions. By the end of the Spring term, each group was composed of at least 30 subjects who had completed participation. The data collection phase of the study was then terminated with a total $N = 166$.

Room

The experiment took place just outside of and within a small, windowless room (8'6" x 12'). The room was located along a small corridor which was leading out of a main hallway. A desk was placed just outside the door. Here each subject completed pre-task questionnaires and post-task open-ended questions.

Materials

Mirror. In two of the five experimental conditions, subjects completed the assigned tasks in the room seated at a desk in front of a large mirror (35½" x 47½"). One side of the mirror was the usual reflective surface and the other side a non-reflecting plywood back. In the two conditions utilizing the mirror, it was placed on top of the desk, leaning against the wall at an angle of approximately 70°.

Desk and Chair. In addition to the desk placed just outside the door, two straight-back chairs were placed inside of the room. In four of the five conditions, one chair was placed at the desk and the other several feet away. In the remaining condition, the two chairs provided seating for the subject and the experimenter.

Bookcase. A low, empty bookcase had been placed in the room along one side wall. It was not removed from the room because it belonged to another experimenter.

Audiotape Recorder (2). Two standard audiotape cassette recorders were used in the experiment. The two recorders were placed on top of the desk within easy reach of the subject. In four of the five conditions, one recorder was present, containing a cassette of pre-recorded questions. In the remaining condition, both recorders were used: one containing pre-recorded questions and the other a blank cassette tape to record subject responses.

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Instructions. Written instructions were placed on top of the desk for the appropriate condition to which the subject was assigned.

Post-Task Questionnaires. A packet of questionnaires was placed on top of the desk for the subject to complete following the experimental task.

Dictionary. A dictionary was placed at one corner of the desk for reference during the completion of the post-task questionnaires.

Pencils. Pencils were placed both on the hallway desk just outside the room and on the desk inside the room.

Instruments

With the exception of the Self-Consciousness Scale and the Offer Self-Image Questionnaire, the measures used in this study do not appear to have been extensively utilized to date. Thus, information concerning reliability and validity is sketchy or non-existent. However, these measures were ones thought to be highly relevant to the purpose of this study. All reliabilities from this study are reported in the Results chapter.

The Offer Self-Image Questionnaire for Adolescents (OSIQ). The Offer Self-Image Questionnaire for Adolescents was originally constructed in 1961-1962 (Offer, Ostrov, & Howard, 1981). During the past 20 years of testing, more than 15,000 adolescents have been included in a wide variety of studies with populations ranging from normal, delinquent,

physically ill, older (16-18), younger (13-15), females, and males to urban, rural, suburban (all were middle class, however).

The purpose of the instrument is the self-report assessment of self-esteem and adjustment in adolescents between 13 and 19 (Offer, Ostrov, & Howard, 1982). The OSIQ is based on two assumptions: (1) the desirability of evaluating the adolescent's functioning in multiple areas and (2) the utility of the self-report method with the adolescent population.

A total of 11 content areas are assessed, representing different aspects of the self. Two were used in this study: (1) Body and Self-Image (10 items) and (2) Psychopathology (12 items from the scale designated for females). The Body and Self-Image Subscale (part of the area designated the Psychological Self) measures the extent to which the adolescent has adjusted to or feels awkward about her body. The Psychopathology subscale (part of the Coping Self area) "should" identify any overt or severe psychopathology (Offer, Ostrov, & Howard, 1981, p. 141).

The OSIQ has been found to possess moderate to high correlations with the Minnesota Multiphase Personality Inventory (MMPI) and the Tennessee Self-Image Test (Offer, Ostrov, & Howard, 1981, p. 143). The long-term stability of the OSIQ scale scores has also been investigated (OSIQ Newsletter, March 1984), utilizing test-retest correlations

(18 months apart). Results indicated correlations of .71 (older females, 16-19) for the Body and Self-Image Scale and .72 (older females, 16-19) for the Psychopathology Scale.

Measures of internal consistency for the two scales to be used in this study are the following: Body and Self Image = .56; Psychopathology = .68, both resulting from samples of older females (16-19).

The *Offer Self-Image Questionnaire for Adolescents* (1982) was administered (prior to the subject's entering the room) to investigate the two mentioned specific subscale areas: Body and Self-Image and Psychopathology. Data for both subscales were used for the purpose of screening for perception of body image (felt to be an important source of additional information for the conditions utilizing a mirror) and for level of current psychological distress reported by the subject. Data were used during statistical analysis to provide additional information concerning individual differences of subjects. This scale was developed for use with adolescents. Because this study recruited from introductory level classes, it was thought probable that the majority of subjects would be in the 18-20 age range and thus qualify for inclusion within this group. Subjects were asked to give their age for purposes of possible later comparison of the 19-and-under group with those over 20 or 21 to investigate any differences of

significance. Items belonging to each subscale are indicated on the copy of the OSIQ in Appendix B.

The Self-Consciousness Scale. The Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975) was also administered prior to the subject's entering the room. This instrument is a measure of dispositional self-consciousness (public and private) and social anxiety. Data were used during the statistical analysis to investigate any differences between high and low levels of each disposition and results of other dependent measures.

The following three measures all investigated subjects' perceptions of internal states and were presented both prior to and following the subjects' participation in one of the experimental conditions. Each subject received the same measures, and these three were presented in counter-balanced order throughout the subject sample. Before-after data (change scores) were analyzed for evidence of change in perception of each internal state, as previously outlined in Hypotheses 1 to 7.

The Autonomic Perception Questionnaire (APQ). The Mandler, Mandler, and Uviller (1958) *Autonomic Perception Questionnaire* was administered to assess subjects' perception of their current autonomic state. The measure included the Borkovec (1976) modification of the Likert Scale to include scale points 0-9. In addition, the anchor terms were modified for Items 2, 6, 8, 9, 12, 17, 19, and 20

Weeks	Male (% of total body weight in bone)	Female (% of total body weight in bone)
0	4.5	4.5
2	5.5	5.5
4	6.5	6.5
6	7.5	7.5
8	8.0	7.8
10	8.2	7.8
12	8.5	8.0

to more accurately reflect the state nature of the instrument's use in this study.

Mood Adjective Checklist (MAC). The Russell Mood Adjective Checklist (1979) was used to assess both subjects' perceptions of which emotional states pertained to them at the moment, rating 58 separate moods, and the level of intensity experienced of the applicable moods. The Meddis (1972) response format was modified by the addition of three selection points between each anchor item to allow for greater response variety and thus, hopefully, more sensitivity to any intensity change due to the experimental procedure. In addition, instructions were modified slightly to read: ". . . your reaction AT THIS MOMENT" to impress upon subjects the "state" nature of this instrument.

Current Cognitions Questionnaire (CCQ). The Current Cognitions Questionnaire is an exploratory measure developed by the author (Isenberg, 1985) to assess subjects' perceptions of their current cognitive state. This instrument was also administered to subjects before and after the experimental procedure.

Open-Ended Questions. A final four questions were asked of each subject just prior to debriefing. First, to obtain information concerning subjects' perception of the purpose of the experiment and what each subject felt was taking place in her specific experimental condition, an open-ended question was asked to this effect. Second, each

subject was asked if there had been any event(s) occurring over the past 24 hours which had made "an impact" on her (once again, an open-ended question). Third, the subject was asked to state her age. Fourth, the subject was asked whether she had had any psychological counseling lasting more than three sessions during the past year. These questions all provided data for potential later use in analysis.

Procedure

A procedural diagram of the study was presented in Table 2.

The experiment was conducted by a total of seven persons over the two academic terms, all female undergraduates enrolled for Independent Study credit through the Psychology Department. One student left the study at the end of Winter term and was replaced for Spring term, leaving a total of six students running the experiment each term. All of the student experimenters were given training in the study procedure and all ran two or three pilot subjects prior to the start of data collection. The use of the undergraduates was felt to be essential in this study because of the large numbers of subjects to be included and to address the issue of experimenter bias. Although the students had a very general knowledge of the topic of self-awareness, they were unaware of the chief hypotheses of the study. However, the students did have knowledge of the

conditions to which each of their subjects were assigned in order to adequately prepare the room and to give appropriate instructions. Each student experimenter gained familiarity during the study with each experimental condition. It had been originally hoped that a single individual could act as the experimenter in Condition 2 (face-to-face in room) to give this condition as much consistency as possible. However, the randomization process of the subjects and the scheduling needs of the experimenters did not make such consistency possible. A single individual did tape all of the questions used in each condition. Additionally, experimenters were asked to dress similarly (skirt, slacks, blouse or sweater) and were trained similarly in the manner of delivering questions for Condition 2.

Prior to the start of data collection, approximately 12 pilot subjects were run by the six student experimenters. As a result of feedback obtained from the pilot work, the number of questions asked of each subject via tape or by the experimenter was cut from 14 to 6. As a result, the entire experiment could be completed within an hour, the time originally planned. The six questions were considered adequate for producing a heightened self-awareness during each experimented phase.

Volunteers who had agreed to participate in the study for credit were scheduled by phone and given directions to the experiment's location. The evening before a subject was

scheduled, the experimenter responsible for that time period contacted the subject by phone, introduced herself, reminded the subject of the date and time scheduled, and inquired about any need to go over location directions. Each subject was told that the experimenter would meet her in the main hallway of the designated building. Each experimenter had a list of scheduled subjects and times and was instructed to greet the subject by name. Prior to the arrival of each subject, the experimenter prepared the room appropriately for the specific condition to which that subject was assigned.

As each subject arrived, the experimenter asked her to sign the consent form, first giving her the following rationale and then initial instructions:

This is a study on self-reflection. We are interested in seeing how individuals' perceptions of themselves change as a result of experiences with different settings and situations. First, I would like you to read and sign this consent form. Please let me know if you have any questions.

Following the signing of the consent form (refer to Appendix E for copy), these instructions were given:

We will be working in one of the rooms just off this little hallway (gestured to hall). Before you enter the room to begin the experiment, we want you to fill out several short questionnaires concerning your

current experience. You will find these in a packet on top of the desk just to the left of the door. Please fill out the questionnaires in the order they are presented to you. The side of the envelope marked "BEGIN" will give you the order to start. Open the packet and begin with the questionnaire on top. After you have completed the last questionnaire, place them all back in the envelope. I will be back in a few minutes to tell you about the next phase of the experiment.

The experimenter kept a covert eye on the subject from the main hall and returned to the subject when she noticed that the subject was finished. To decrease experimenter presence and as additional source of self-awareness, the subject was always left alone to complete the study measures.

The set of initial measures included the *Offer Self-Image Questionnaire*, the *Self-Consciousness Scale*, the *Autonomic Perception Questionnaire*, the *Current Cognitions Questionnaire* and the *Mood Adjective Checklist*. Written general instructions had been attached to the first measure within each packet and read as follows:

Please begin with the top questionnaire and proceed in order from top to bottom. Read and follow the instructions carefully and complete each questionnaire before going on to the next. When you

have completed the final questionnaire, please place all measures back in the manila envelope and continue to follow the instructions just given by the experimenter.

Following completion of the first set of measures, the experimenter gave one of the following sets of instructions corresponding to the condition to which the subject was assigned. The subject was also told that the instructions in written form had been placed on the desk in the room for reference during the experimental phase.

Instructions Given to Subjects in Each Condition:

Condition 1. (Mirror only/"personal," pre-recorded questions/not recorded.)

When you enter the room, you will see a desk and a chair to your left. Please sit down and read the printed instructions on the desk. As they will tell you, the tape recorder has some pre-recorded questions on it. Whenever you feel ready, all you do is push the "PLAY" button. The tape has been pre-set for you to the proper starting point. After you have heard the first question on tape, press the "STOP" button. All we would like you to do is think about how you would respond. You do not have to respond out loud. Your responses will in no way be recorded, and you will not be observed in any way without your knowledge.

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When you are ready to go on to Question 2, press the "PLAY" button; listen to the question; press "STOP"; and, again, just think about your response for as long as you wish. Keep repeating this procedure until you have heard the voice say: "This is the end of the questions." You may then press the "STOP" button.

(Taped questions were spaced about 10 second apart.)

After you complete the last question, you will notice another packet on the desk marked #2. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN," and complete all questionnaires. Please place them all back in the envelope as you finish. Once all questionnaires are completed, you may then leave the room. You are free to stop at any point. You will lose no credit.

Condition 2. (Experimenter only/"personal" questions asked of subject; subject responded. The experimenter had made sure beforehand that the room was set up with two chairs.) After the experimenter returned following the subject's completion of the initial questionnaires, she opened the door and gestured, saying the following:

In this next part of the experiment, I will be sitting with you for a short time and asking you some questions about your experience at this time. You are

free to stop at any point, just by stating so; you will lose no credit. Your responses will in no way be recorded. We would like you to respond however you wish, as lengthy a response as you like, or you may choose not to respond at all. The choice is entirely yours.

The experimenter gestured to one chair and sat in the other, then began to ask the following questions at appropriate intervals to allow the subject freedom in response:

- (1) What is most important to you now?
- (2) What do you hope?
- (3) What would you like to change?
- (4) What are you aware of feeling now?
- (5) How would you describe this experience?
- (6) How do you feel about your responses to these questions?

This is the end of this phase of the experiment. You will notice another packet on the desk. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN" and complete all questionnaires. As you finish, please put the questionnaires back in the envelope. Once you have completed all of the questionnaires, you may leave the room. In order to not distract or disrupt your thinking, I will be

leaving you alone now and will wait out in the main hallway where I met you. If you have any questions or wish to end your participation, you can find me there.

Condition 3. (Mirror and audiotape recorders/"personal" pre-recorded questions/responses recorded.)

When you enter the room, you will see a desk and chair to your left. Please sit down and read the sheet of instructions on the desk. As they will tell you, there are two tape recorders on the desk, one marked #1, with a series of pre-recorded questions, and the other, #2, with a blank tape.

Whenever you are ready, please begin by pressing the "RECORD" and "PLAY" buttons on recorder #2. You may leave this tape running throughout the experiment--it will be recording your responses to the questions on the other tape. When you are ready to begin listening to the questions, press "PLAY" on recorder #1. The tape has been pre-set to the proper starting point. After you have heard the first question on the tape, press the "STOP" button. You may respond to the question in any way you wish--or you may choose not to respond at all. The choice is entirely yours.

When you are ready to go on to Question 2, press the "PLAY" button. Once you have heard the question, press "STOP" and, again, respond in any way you like or

not at all. Proceed through each question in this manner until you hear the voice say: "This is the end of the questions." Once you hear this, press the "STOP" buttons on BOTH recorders.

After you complete the last question, you will notice another packet on the desk marked #2. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN," and complete all questionnaires. Please place them all back in the envelope as you finish. Once all questionnaires are completed, you may then leave the room. You are free to end your participation at any time. You will lose no credit.

Condition 4. ("Personal" pre-recorded questions/not recorded.)

When you enter the room, you will see a desk and chair to your left. Please sit down and read the printed instructions on the desk. As they will tell you, the tape recorder has some pre-recorded questions on it. Whenever you feel ready, all you do is push the "PLAY" button. The tape has been pre-set for you to the proper starting point. After you have heard the first question on the tape, press the "STOP" button. All we would like you to do is think about how you would respond. You do not have to respond out loud.

Your responses will in no way be recorded, and you will not be observed in any way without your knowledge.

When you are ready to go on to Question 2, press the "PLAY" button; listen to the question; press "STOP"; and, again, just think about your response for as long as you wish. Keep repeating this procedure until you have heard the voice say: "This is the end of the questions." You may then press the "STOP" button.

After you complete the last question, you will notice another packet on the desk marked #2. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN," and complete all questionnaires. Please place them all back in the envelope as you finish. Once all questionnaires are completed, you may then leave the room. You are free to end your participation at any time. You will lose no credit.

Condition 5. ("Neutral" pre-recorded questions/not recorded.)

When you enter the room, you will see a desk and chair to your left. Please sit down and read the printed instructions on the desk. As they will tell you, the tape recorder has some pre-recorded questions on it. Whenever you feel ready, all you do is push the "PLAY" button. The tape has been pre-set for you to

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the proper starting point. After you have heard the first question on tape, press the "STOP" button. All we would like you to do is think about how you would respond. You do not have to respond out loud. Your responses will in no way be recorded, and you will not be observed in any way without your knowledge.

When you are ready to go on to Question 2, press the "PLAY" button; listen to the question; press "STOP"; and, again, just think about your response for as long as you wish. Keep repeating this procedure until you have heard the voice say: "This is the end of the questions." You may then press the "STOP" button.

After you complete the last question, you will notice another packet on the desk marked #2. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN," and complete all questionnaires. Please place them all back in the envelope as you finish. Once all questionnaires are completed, you may then leave the room. You are free to end your participation at any time. You will lose no credit.

The written instructions placed on the desk for subject reference during the experimental phase and the completion of the second packet of questionnaires can be found in Appendix D.

After the subject completed the second packet of questionnaires and had left the room, she was given the two pages of "open-ended" questions. The experimenter again left the hallway for several minutes. Following her return, she asked if the subject had any questions or comments, then provided each subject with a verbal de-briefing:

This experiment was about "self-awareness." Some people call this "self-focus" or even "self-confrontation"--literally a focus on yourself. This state can be produced in a variety of ways: seeing yourself in a mirror, speaking in front of a group, having your picture taken, recording or listening to a recording of your own voice. We have reason to believe, though, that the specific ways in which self-awareness is produced will lead, in turn, to different types of experiences. You participated in the setting in which _____ (describes subject's setting). What we want to do is compare your experience and those in the rest of your group with the experience of other groups.

The questionnaires you filled out asked you about your current feelings, thoughts, and physical reactions. Altogether, this gives us an idea of your individual experience. We are exploring changes as a result of the self-awareness experience. This was why we had you complete two sets of questionnaires: one

before and one after you participated in the self-awareness exercise.

Please do not discuss this experiment with other students. Thank you for your participation.

Each subject was also given a written debriefing as mandated by University Subject Pool regulations. A copy can be found in Appendix C. The written copy included the name, address, and phone numbers of the author.

Finally, each subject was also asked to leave her name and permanent address (usually home) if she wished to receive a copy of the abstract from the completed study.

Chapter 3

Results

Initial frequency data were obtained for all variables prior to the statistical analyses. Total sample size was $n = 166$. The number of subjects by group was as follows:

Group	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
n	34	34	34	32	32

Due to missing values on some variables, the total number of subjects may be less for some comparisons. In the report of results, the n for each group involved in any given comparison will be listed.

The mean age of the sample was 19 years ($n = 164$; for unknown reasons two subjects did not give their age).

<u>Group</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
\bar{x}	18.50	19.15	18.76	19.56	19.19
SD	5.53	4.00	1.02	2.77	1.69
Age range	18-23	18-28	18-21	18-30	18-27

Ten subjects were over 21 years old. Group distribution of the subjects over 21 was as follows:

Group	1	2	3	4	5
Number over 21	1	6	0	2	1

One hundred and nineteen subjects were 19 years or younger.

Twelve subjects reported that they had participated in more than three sessions of personal counseling during the previous year ($n = 165$; one subject did not respond). These 12 subjects were fairly evenly distributed over the five experimental conditions. Group distribution of subjects participating in personal counseling during the past year was as follows:

Group	1	2	3	4	5
Counseling	4	2	1	4	1

Because of the small numbers in each group for both age-over-21 and participation in counseling, no statistical analyses were conducted on these variables.

Following completion of their participation, subjects were asked to speculate on the purpose of the experiment. Responding subjects who addressed their opinions on the study's purpose, only, totaled 64% (total $n = 148$); 30% gave responses that contained personal reactions to the experience or a combination of personal reaction and intellectual speculation of purpose. Subjects were also

asked to list any event(s) which had occurred over the previous 24 hours which they felt had been "significant."

The number of events listed for the entire sample (N = 166) ranged from zero (listed "none" or did not respond at all) to five for any given individual. One hundred and forty-six subjects responded by listing at least one event. Seventy-four of those subjects did not list a second event. Events were considered in the order in which they were listed by each subject. For a first event, 21% gave a response related to school, with 4.8% of this total expressing concern about doing poorly. General academic concerns, a mention of test(s) taken, totaled 6% of the 21%. Arguments with boyfriends, roommates, families were listed as a first event by 19% of the 146 subjects. Thirteen percent of the 146 list personal injury, illness, lack of sleep, or other health concerns. For those 72 subjects who listed at least one additional event, 14 % reported general academic concerns, test(s) taken, or other assignments completed. Of the 72 subjects, 11% listed personal illness, injury, or general health concerns. Another 9% reported a "good time" spent or anticipated with friends or family. One hundred and twenty-four of the total 146 subjects did not list a third event. For the remaining 22 subjects, 12% reported health concerns.

Reliabilities were obtained for each measure used in this study and appear in Table 3. Portions of the Offer

Table 3

Scale Reliabilities

Measure	Alpha
Self-Consciousness Scale	
Private Self-Consciousness	.48
Public Self-Consciousness	.77
Social Anxiety	.42
Offer Self-Image Questionnaire	
Psychopathology	.74
Body/Self Image	.71
Mood Adjective Checklist	
Pre-Scores	
General Activation	.93
High Activation	.67
General Deactivation	.66
Deactivation-Sleep	.90
Pleasure	.89
Displeasure	.87
Arousal	.70
Sleepiness	.66
Dominance	.62
Submissiveness	.43
Depression	.86
Post-Scores	
General Activation	.94
High Activation	.69
General Deactivation	.73
Deactivation-Sleep	.89
Pleasure	.88
Displeasure	.91
Arousal	.77
Sleepiness	.74
Dominance	.76
Submissiveness	.68
Depression	.90
Current Cognitions Questionnaire	
Pre-Score	.64
Post-Score	.70
Autonomic Perception Questionnaire	
Pre-Score	.90
Post-Score	.94

Self-Image Questionnaire (OSIQ), Self-Consciousness Scale (SCS), and Mood Adjective Checklist (MAC) were utilized in this study. Two subscales were used from the OSIQ (Body/Self-Image and Psychopathology). The Self-Consciousness Scale was broken down into its three previously noted subscales (private self-consciousness, public self-consciousness, and social anxiety). Eleven sets of adjectives were formed from the 58 items of the Mood Adjective Checklist (MAC). The first four sets were listed by Thayer (1967, in Russell, 1979) as factors of activation, and the remaining sets constructed a priori to measure the moods named in the remaining seven sets (Russell, 1979). These 11 adjective sets became the dependent variables of mood used in this study. Table 4 lists each set, its name, and the adjective items creating that set.

Reliabilities were obtained for each scale or subscale. If the scale or subscale had a "pre"-self-awareness experience score and a "post"-experience score, reliabilities were obtained for each separately. Reliabilities ranged from .94 (general activation 2 with $N = 166$) to .42 (social anxiety with $N = 166$).

Table 5 lists the variables with reliabilities over .80. Because of the great variation in reliabilities among the measures, particular attention will be paid to the measures with $\alpha > .80$ in the reporting of the data analyses addressing each hypothesis.

Table 4

Adjective Sets Formed from the Mood Adjective Checklist

SET NAME	ITEMS FORMING SET
<hr/>	
General Activation	Lively, active, full of pep, energetic, peppy, vigorous, activated
High Activation	Clutched up, jittery, stirred up, fearful, intense
General Deactivation	At rest, still, leisurely, quiescent, quiet, calm, placid
Deactivation-Sleep	Sleepy, tired, drowsy
Pleasure	Contented, happy, satisfied, pleased, joyful
Displeasure	Discontented, unhappy, dissatisfied, displeased, joyless
Arousal	Wide awake, aroused, aflame, impassioned, alert, roused
Sleepiness	Inactive, half asleep, slow, un-aroused
Dominance	Dominant, controlling, influential, important, autonomous
Submissiveness	Submissive, controlled, influenced, awed, guided
Depression	Depressed, discouraged, gloomy, sad, blue, sluggish

Table 5

Reliabilities Over .80 (high to low)

Measure	Alpha
General Activation 2	.94
Autonomic Perception Questionnaire "PO"	.94
General Activation 1	.93
Displeasure 2	.91
Autonomic Perception Questionnaire "PR"	.90
Deactivation-Sleep 1	.90
Depression 2	.90
Pleasure 1	.89
Deactivation-Sleep 2	.89
Pleasure 2	.88
Displeasure 1	.87
Depression 1	.86

A test-retest correlation matrix reflecting pre- versus post-scores was obtained for all measures and appears in Table 6.

Relationships among measures were also obtained in the form of a correlation matrix, reflecting pre-scores ("1" or "PR" suffix), and a matrix consisting of post-scores ("2" or "PO" suffix) for the entire subject sample. These matrices appear in Appendix A (Tables A-1 and A-2).

Means and standard deviations were obtained within each group for each variable which had "pre" and "post" test scores. Also included are the means and standard deviations for "change" scores [listed as Difference 1-Difference 13 (after-before scores)] used in the data analyses to address each hypothesis. These tables can be found in Appendix A.

Before conducting the a priori contrasts used to test hypotheses one through five in this study, a series of analyses of variance were conducted for all "change" or "difference" scores (Jacobson, Follette, & Revenstorff, 1984) that had been obtained by subtracting pre-scores from post-scores for measures listed in Table 6. Means and standard deviations, along with F-scores and probability values, can be found in Appendix A (Table A-8).

Hypotheses will be addressed initially in order of reliability value for those measures with $\alpha > .80$.

Hypothesis 1 predicted that subjects in groups 1 and 4 would evidence greater change (change scores) on the

Table 6

Correlations Between Pre- and Post-Scores

Variable	Pre-Post Correlation
<hr/>	
General Activation	.87
High Activation	.67
General Deactivation	.63
Deactivation-Sleep	.83
Pleasure	.81
Displeasure	.83
Arousal	.75
Sleepiness	.76
Dominance	.80
Submissiveness	.69
Depression	.85
Current Cognitions Questionnaire	.73
Autonomic Perception Questionnaire	.74

dependent measures than subjects in the other groups (2, 3, 5). The hypothesis was tested by using an a priori contrast, comparing the combined data from groups 1 and 4 with the combined data from groups 2, 3, and 5. Difference scores for the combined groups 1 and 4 were significantly different from difference scores for combined groups 2, 3, and 5 for the following variables: General Activation [$t(152) = -2.8404$, $p \leq .005$]; Autonomic Perception Questionnaire [$t(161) = -2.6809$, $p < .001$]; and Deactivation-Sleep [$t(139) = 2.8431$, $p = .005$]. No comparisons for any other variables were found to be significant for Hypothesis 1. Results of contrasts for all variables for Hypothesis 1 appear in Table 7.

Hypothesis 2 stated that subjects in group 1 would evidence greater change on the dependent measures than subjects in group 2. The a priori contrast used to address this hypothesis was a direct comparison of group 1 versus 2.

For the measure General Activation, this contrast was near borderline significance [$t(152) = -1.8988$, $p = .059$]. For the measure Autonomic Perception Questionnaire [$t(161) = -.6212$, n.s.], the contrast of group 1 versus group 2 was not significant. Nor was this contrast significant for the following measures also with reliabilities $> .80$: Displeasure, Depression, Deactivation-Sleep, or Pleasure. Data from measures with reliabilities $< .80$ also did not yield any significant results for

Table 7

Summary of Contrast Results for Hypothesis 1

Hypothesis 1: Subjects in Groups 1 and 4 will evidence greater pre-to-post change than subjects in Groups 2, 3, and 5.

Variable	Result
General Activation	$t(152) = -.8404, p < .005^*$
High Activation	$t(143) = -1.6652, n.s.$
General Deactivation	$t(152) = 1.3713, n.s.$
Deactivation-Sleep	$t(139) = 2.8431, p < .005^*$
Pleasure	$t(144) = -.8005, n.s.$
Displeasure	$t(135) = -.1380, n.s.$
Arousal	$t(149) = -1.0262, n.s.$
Sleepiness	$t(140) = 1.6146, n.s.$
Dominance	$t(144) = .4637, n.s.$
Submissiveness	$t(133) = .0518, n.s.$
Depression	$t(143) = -.5150, n.s.$
Current Cognitions Questionnaire	$t(161) = .8316, n.s.$
Autonomic Perception Questionnaire	$t(161) = -2.6809, p < .01^*$

*Denotes statistical significance

n.s. = not significant

Hypothesis 2. Results of Hypothesis 2 contrasts for all variables appear in Table 8.

Hypothesis 3 predicted that subjects in groups 1, 2, 3, 4 would evidence greater change than subjects in group 5. This hypothesis was addressed with a contrast comparing groups 1 and 4 versus group 5. No results were statistically significant. Results of contrasts addressing Hypothesis 3 may be found in Table 9.

Hypothesis 4 stated that subjects in groups 1, 2, and 3 would differ from subjects in group 4 on all dependent measures previously mentioned. This hypothesis was addressed with a contrast comparing groups 1, 2, and 3 versus group 4. Significant results were obtained for variables General Activation [$t(152) = 3.1667, p < .005$] and the Autonomic Perception Questionnaire [$t(161) = 3.0060, p < .005$]. Results were not significant for any other variables. All contrast results addressing Hypothesis 4 may be found in Table 10.

Hypothesis 5 stated that subjects in group 3 would differ from subjects in groups 1 and 2 on all previously mentioned dependent measures. This contrast, then, directly compared groups 1 and 2 versus group 3. Results were significant for the variable Deactivation-Sleep [$t(139) = 2.1671, p < .05$] but not for any other measures with a reliability $> .80$. Results of this contrast were

Table 8

Summary of Contrast Results for Hypothesis 2

Hypothesis 2: Subjects in Group 1 will evidence greater
pre-to-post change than subjects in Group 2.

Variable	Result
General Activation	$t(152) = -1.8988, p < .059^*$ (border)
High Activation	$t(143) = - .7223, n.s.$
General Deactivation	$t(152) = .3730, n.s.$
Deactivation-Sleep	$t(139) = 1.2323, n.s.$
Pleasure	$t(144) = - .9839, n.s.$
Displeasure	$t(135) = .5106, n.s.$
Arousal	$t(149) = - .8107, n.s.$
Sleepiness	$t(140) = 1.5027, n.s.$
Dominance	$t(144) = - .8329, n.s.$
Submissiveness	$t(133) = 1.5615, n.s.$
Depression	$t(143) = 1.0073, n.s.$
Current Cognitions Questionnaire	$t(161) = .6180, n.s.$
Autonomic Perception Questionnaire	$t(161) = - .6212, n.s.$

*Denotes statistical significance

n.s. = not significant

Table 9

Summary of Contrast Results for Hypothesis 3

Hypothesis 3: Subjects in Groups 1, 2, 3, and 4 will
evidence greater pre-to-post change than
subjects in Group 5.

Variable	Result
General Activation	$t(152) = - .8879, n.s.$
High Activation	$t(143) = -1.2693, n.s.$
General Deactivation	$t(152) = 1.6773, n.s.$
Deactivation-Sleep	$t(139) = .8476, n.s.$
Pleasure	$t(144) = .3632, n.s.$
Displeasure	$t(135) = - .8846, n.s.$
Arousal	$t(149) = .6384, n.s.$
Sleepiness	$t(140) = - .3060, n.s.$
Dominance	$t(144) = .9254, n.s.$
Submissiveness	$t(133) = - .0064, n.s.$
Depression	$t(143) = -1.4087, n.s.$
Current Cognitions Questionnaire	$t(161) = .0544, n.s.$
Autonomic Perception Questionnaire	$t(161) = - .3227, n.s.$

n.s. = not significant

Table 10

Summary of Contrast Results for Hypothesis 4

Hypothesis 4: Subjects in Groups 1, 2, and 3 will differ from subjects in Group 4 on pre-to-post change.

Variable	Result
General Activation	$t(152) = 3.1667, p < .005^*$
High Activation	$t(143) = 1.4624, n.s.$
General Deactivation	$t(152) = -.993, n.s.$
Deactivation-Sleep	$t(139) = -1.7578, n.s.$
Pleasure	$t(144) = 1.4550, n.s.$
Displeasure	$t(135) = -.6077, n.s.$
Arousal	$t(149) = .7322, n.s.$
Sleepiness	$t(140) = -1.3333, n.s.$
Dominance	$t(144) = -.2483, n.s.$
Submissiveness	$t(133) = .2269, n.s.$
Depression	$t(143) = .7390, n.s.$
Current Cognitions Questionnaire	$t(161) = -.5810, n.s.$
Autonomic Perception Questionnaire	$t(161) = 3.0060, p < .005^*$

*Denotes statistical significance

n.s. = not significant

also statistically significant for the variables: High Activation [$t(143) = -2.2607, p < .05$] and Submissiveness [$t(133) = -2.2844, p < .05$]. No other results were significant for this contrast. All results for contrasts addressing Hypothesis 5 may be found in Table 11.

Hypothesis 6 and 7 were analyzed by t-tests, directly comparing groups created from the top third and bottom third of the score distribution on the measures Private Self-Consciousness and Public Self-Consciousness.

Hypothesis 6 predicted that subjects scoring "high" (the highest one-third of the distribution in Private Self-Consciousness) and participating in groups 1 or 4 would evidence different "change" scores than those subjects in groups 1 or 4 scoring in the lower third of the Private Self-Consciousness distribution. Means and standard deviations for each variable and results of each t-test are found in Table 12. Only one variable's data yielded a statistically significant result: Current Cognitions Questionnaire [$t(39) = 2.58, p < .05$].

Hypothesis 7 stated that subjects scoring in the "high" range (top third of distribution) of the Public Self-Consciousness distribution and participating in group 2 would evidence different "change" scores than those subjects in group 2 scoring in the "low" (bottom third) range of the distribution. Means, standard deviations, t-values, and probabilities can be found in Table 13. No statistically

Table 11

Summary of Contrast Results for Hypothesis 5

Hypothesis 5: Subjects in Group 3 will differ from subjects
in Groups 1 and 2 on pre-to-post change.

Variable	Result
General Activation	$t(152) = - .7820, n.s.$
High Activation	$t(143) = -2.2607, p<.05^*$
General Deactivation	$t(152) = 1.0738, n.s.$
Deactivation-Sleep	$t(139) = 2.1671, p<.05^*$
Pleasure	$t(144) = 1.3010, n.s.$
Displeasure	$t(135) = -1.1528, n.s.$
Arousal	$t(149) = -1.0378, n.s.$
Sleepiness	$t(140) = .1705, n.s.$
Dominance	$t(144) = 1.3290, n.s.$
Submissiveness	$t(133) = -2.2844, p<.05^*$
Depression	$t(143) = - .4325, n.s.$
Current Cognitions Questionnaire	$t(161) = .2893, n.s.$
Autonomic Perception Questionnaire	$t(161) = -1.5099, n.s.$

*Denotes statistical significance

n.s. = not significant

Table 12

Summary of Results--Hypothesis 6 (using "change" scores)

General Activation

Group*	1	2
n**	18	18
Mean	-6.1111	-4.5000
Standard deviation	7.722	9.513
t(34) = -.56, n.s.		

High Activation

Group	1	2
n	19	19
Mean	-9.474	-2.3684
Standard deviation	9.687	8.234
t(36) = .49, n.s.		

General Deactivation

Group	1	2
n	19	19
Mean	.8421	-1.0526
Standard deviation	11.720	10.855
t(36) = .52, n.s.		

Deactivation-Sleep

Group	1	2
n	16	13
Mean	.0000	1.9321
Standard deviation	5.514	5.693
t(27) = -.92, n.s.		

Pleasure

Group	1	2
n	16	17
Mean	-2.9375	-3.4706
Standard deviation	8.473	7.186
t(31) = .20, n.s.		

(table continues)

Table 12 (cont'd.).

Displeasure

Group	1	2
n	19	19
Mean	-2.105	1.6316
Standard deviation	10.773	6.483
t(36) = -.64, n.s.		

Arousal

Group	1	2
n	19	20
Mean	-3.3158	1.2500
Standard deviation	6.430	9.346
t(37) = -1.77, n.s.		

Sleepiness

Group	1	2
n	18	19
Mean	2.333	.5789
Standard deviation	6.059	5.305
t(35) = .94, n.s.		

Dominance

Group	1	2
n	17	19
Mean	-2.0588	-1.9474
Standard deviation	6.408	5.148
t(34) = -.06, n.s.		

Submissiveness

Group	1	2
n	19	16
Mean	1.4737	.6250
Standard deviation	7.633	8.740
t(33) = .31, n.s.		

(table continues)

Table 12 (cont'd.).

Depression

Group	1	2
n	19	19
Mean	-3.9474	-1.5789
Standard deviation	11.895	7.260
t(36) = -.74, n.s.		

Current Cognitions Questionnaire

Group	1	2
n	20	21
Mean	11.5000	-6.8571
Standard deviation	15.115	28.118
t(39) = 2.58, p<.05***		

Autonomic Perception Questionnaire

Group	1	2
n	20	21
Mean	3.3500	3.000
Standard deviation	11.591	15.773
t(39) = .08, n.s.		

*Group 1 = "high" third of distribution; Group 2 = "low" third of distribution.

**Groups 1 and 4 combined.

***Denotes statistical significance

n.s. = not significant

Table 13

Summary of Results--Hypothesis 7 (using "change" scores)

General Activation

Group*	HIGH	LOW
n**	8	10
Mean	3.0000	2.6000
Standard deviation	10.757	10.885
t(16) = .08, n.s.		

High Activation

Group	HIGH	LOW
n	6	9
Mean	-1.333	-1.0000
Standard deviation	9.158	8.261
t(13) = -.07, n.s.		

General Deactivation

Group	HIGH	LOW
n	7	11
Mean	-3.8571	1.0909
Standard deviation	4.353	5.839
t(16) = -1.39, n.s.		

Deactivation-Sleep

Group	HIGH	LOW
n	7	11
Mean	.1429	-3.6364
Standard deviation	6.149	5.767
t(16) = 1.32, n.s.		

Pleasure

Group	HIGH	LOW
n	7	11
Mean	-1.4286	.3636
Standard deviation	6.241	4.925
t(16) = -.68, n.s.		

(table continues)

1

Table 13 (cont'd.).

Displeasure

Group	HIGH	LOW
n	5	9
Mean	.6000	-2.6667
Standard deviation	5.413	7.450
t(12) = .86, n.s.		

Arousal

Group	HIGH	LOW
n	8	11
Mean	2.2500	2.8182
Standard deviation	5.285	14.105
t(17) = -.11, n.s.		

Sleepiness

Group	HIGH	LOW
n	6	8
Mean	-2.333	-3.3750
Standard deviation	5.125	6.046
t(12) = .34, n.s.		

Dominance

Group	HIGH	LOW
n	7	11
Mean	2.8571	-1.1818
Standard deviation	8.153	5.528
t(16) = 1.28, n.s.		

Submissiveness

Group	HIGH	LOW
n	5	9
Mean	-3.0000	-4.6667
Standard deviation	8.515	9.500
t(12) = .33, n.s.		

(table continues)

Table 13 (cont'd.).

Depression

Group	HIGH	LOW
n	7	10
Mean	-1.2857	-1.7000
Standard deviation	6.422	7.704
t(15) = .12, n.s.		

Current Cognitions Questionnaire

Group	HIGH	LOW
n	8	11
Mean	6.1250	-.6364
Standard deviation	18.612	9.993
t(17) = 1.03, n.s.		

Autonomic Perception Questionnaire

Group	HIGH	LOW
n	8	11
Mean	12.2500	11.3636
Standard deviation	22.964	18.354
t(17) = .09, n.s.		

*"HIGH" = subjects in top third of distribution; "LOW" = subjects in bottom third of distribution.

**Subjects from Group 2, only.

***Denotes statistical significance

n.s. = not significant

significant results were obtained on any variable for this hypothesis.

Other Analyses

In addition to the analyses conducted to address hypothesis 1-7, a series of additional analyses was performed to investigate the effect of several variables other than those addressed to this point. In the first such analysis, subjects in group 2 (subject-experimenter together in room) were divided into those scoring in the "high" range of the distribution on Social Anxiety and those scoring in the "low" range. This division was obtained by using a median split and groups were compared using t-tests. Results for all dependent variables (previously mentioned) can be found in Appendix A (Table A-9). No statistically significant results were obtained for this analysis.

In a second analysis, subjects participating in groups 1 and 3 ("mirror" conditions) were divided into subgroups scoring in the "high" range of the distribution on the Body/Self Image Subscale of the Offer Self Image Questionnaire (OSIQ) and those scoring in the "low" range. "High" and "low" groups were obtained by using a median split and compared on all dependent variables by using t-tests. Means, standard deviations, t-values, and probabilities may be found in Appendix A (Table A-10). There were no statistically significant results for any dependent variable.

A third analysis divided subjects in groups 1-4 ("personal" questions) into those scoring in the "high" range of the distribution on the Psychopathology Subscale of the OSIQ and those scoring in the "low" range. This division was obtained by using a median split and these subgroups were compared by t-tests. Means, standard deviations, t-values, and probabilities for all variables may be found in Appendix A (Table A-11). No statistically significant results were obtained, although the Autonomic Perception Questionnaire yielded a result of borderline significance [$t(132) = -1.92, p = .057$].

A final analysis in this initial series of analyses involved an investigation of the variable "EVENTS." An analysis of variance ("SCHOOL" X GROUP) and a priori contrasts were conducted with particular attention paid to subjects in group 5 whose "neutral" questions concerned the subject of "higher education." As previously mentioned, 21% of the subject sample had listed some aspect of "school" as an event of importance occurring during the previous 24 hours. While the "n" for each group (made up of those listing "school" as a first or second listed event) is not large, such an analysis was felt to be a potentially valuable source of additional information concerning the sample. Contrasts directly compared groups in several ways, isolating group 5 because of the nature of their "neutral" questions. For each dependent variable, group size, means,

standard deviations, omnibus F results, and contrast results can be found in Appendix A (Table A-12). The results were statistically significant for the following variables:

- (1) High Activation [$F(4,38) = 4.917, p < .005$]
- (2) General Deactivation [$F(4,39) = 3.645, p < .05$]

Contrast 1 (groups 1-4 versus 5) was significant for the following variables:

- (1) High Activation [$t(38) = 2.6614, p < .05$]
- (2) General Deactivation [$t(39) = -2.5582, p < .05$]
- (3) Pleasure [$t(35) = -2.3808, p < .05$]
- (4) Displeasure (with a reliability $> .80$)
[$t(34) = 2.4511, p < .05$]

Contrast 2 (group 4 versus group 5) for this analysis resulted in the following significant variables:

- (1) High Activation [$t(38) = -3.6028, p < .005$]
- (2) Autonomic Perception Questionnaire
[$t(42) = -2.1312, p < .05$]

Other significant contrasts resulting from the analysis of "EVENTS" included the following:

- (1) General Deactivation:
 - (a) groups 1 versus 5 [$t(39) = 3.3052, p < .01$]
 - (b) groups 1 and 3 versus 5 [$t(39) = 2.4820, p < .05$]
- (2) Pleasure (reliability $> .80$) group 1 versus 5
[$t(35) = 2.4482, p < .05$]

Analysis of Covariance

An assumption in the use of "change" scores is that the correlation between the pre-score and the change score should be as near to zero as possible. A significant correlation would indicate that change was dependent on the initial pre-score. Such a dependency would invalidate the use of change scores in a data analysis.

Prior to the performance of the analyses just reported, an additional correlation matrix was obtained, correlating "pre"-scores with "change" (difference) scores on all appropriate measures (measures given both pre and post). Because multiple tests were being conducted, a Bonferroni correction was used to obtain a new significance value which would help to protect the test at the .05 level. Without such protection, in the case of multiple tests, the probability of results being significant by chance would increase. A new significance value was thus created at about .005. The following pre-change correlations were found to be significant:

Group 1: (1) General Deactivation
 $r(33) = -.46, p < .05$

Group 2: (1) High Activation
 $r(22) = -.51, p < .05$

(2) Submissiveness
 $r(26) = -.53, p < .05$

Group 3: (1) General Deactivation

$$r(31) = -.50, p < .05$$

(2) Deactivation-Sleep

$$r(31) = -.53, p < .05$$

(3) Pleasure

$$r(31) = -.57, p < .05$$

Group 4: No statistically significant correlations.

Group 5: (1) General Activation

$$r(31) = -.58, p < .05$$

(2) High Activation

$$r(27) = -.55, p < .05$$

(3) General Deactivation

$$r(31) = -.65, p < .05$$

(4) Deactivation-Sleep

$$r(29) = -.55, p < .05$$

(5) Pleasure

$$r(32) = -.57, p < .05$$

(6) Displeasure

$$r(27) = -.63, p < .05$$

(7) Arousal

$$r(30) = -.47, p < .05$$

(8) Depression

$$r(27) = -.53, p < .05$$

The significant findings among the pre-change correlations suggest that because a pre-score/change-score relationship already existed, it would be prudent to use a form of analysis which would take this relationship into account and

attempt to control for pre-score. Therefore, analyses of covariance were conducted, comparing groups on post-score measures using the pre-scores on the same measure as the covariate. These analyses were conducted for all previously mentioned variables considered now as the adjusted scores on the "post" test based on "pre" test scores. Results of each analysis can be found in Appendix A (Table A-13).

Significant results were obtained for the following measures with reliabilities $> .80$:

- (1) General Activation [main effect for Group = $F(4,155) = 3.81, p < .01$; Group X Pre-score Interaction = $F(4,155) = 3.07, p < .05$]
- (2) Autonomic Perception Questionnaire [main effect for Group = $F(4,160) = 2.93, p < .05$]
- (3) Displeasure [Group x Pre-score Interaction = $F(4,153) = 3.53, p < .01$]
- (4) Pleasure [Group x Pre-score Interaction = $F(4,155) = 2.62, p < .05$].

Other significant results were as follows:

- (1) High Activation [Main Effect for Group = $F(4,153) = 2.45, p < .05$]
- (2) General Deactivation [Group X Pre-score Interaction = $F(4,155) = 2.44, p < .05$]
- (3) Submissiveness [Main Effect for Group = $F(4,152) = 2.48, p < .05$]

Comparing variables in which both ANOVA and ANCOVA results were statistically significant, only in the case of the variable Submissiveness were the ANCOVA results significant (Group effect, $p < .05$) and the ANOVA not significant. Otherwise, all variables yielded results for the ANCOVA group effect consistent with ANOVA results.

As previously mentioned, reliabilities for the measures used in this study represent a wide range of values. A measure such as the Autonomic Perception Questionnaire, with high "pre" and "post" reliabilities, has also been a variable to yield significant findings in a number of analyses, including analysis of variance; three different contrasts addressing specific hypotheses or additional analyses; one t-test; and the analysis of covariance group effect (see Appendix A, Table A-14). And the Autonomic Perception Questionnaire was found not to be significantly correlated on the pre-score/change-score correlation. Additionally, an examination of group and individual means and group standard deviations for each variable (refer to Means and Standard Deviations tables in Appendix A) suggested that scores on the Autonomic Perception Questionnaire frequently exhibited fairly large "pre" to "post" differences, but in both directions (increase and decrease). Standard deviations for the Autonomic Perception Questionnaire were often the largest among all "pre" and "post" variables. Because the possibility of considerable

individual variation existed in a variable with high reliability and no pre-score/change-score significant correlation, a final series of analyses were conducted, dividing the subjects in each group based upon a "pre"-to-"post" increase or decrease on the Autonomic Perception Questionnaire scale. Thus, the purpose of this last series of analyses was the investigation of whether this particular individual difference variable (direction of change in perception of autonomic arousal) had any effect on "post" scores and "change" on other variables.

Subgroups were created by dividing subjects into one group if they evidenced an increase ("pre-to-"post") on the Autonomic Perception Questionnaire and into another group if there was no change "pre"-to-"post" or if the subject's score decreased.

The first series of analyses investigated the effect of direction of change on the Autonomic Perception Questionnaire on the "change" scores of the other dependent variables in the study. For purposes of these analyses, groups 1 and 4 were combined to form a single group representing a "private" self-awareness focus. Mean scores on each "change" variable and the numbers and proportion of subjects increasing or staying the same or decreasing "pre"-to-"post" on the Autonomic Perception Questionnaire can be found in Appendix A (Table A-15).

First, analyses of variance were conducted to investigate the presence or absence of differences on the "change" variables (1) by group and (2) by direction of change on the Autonomic Perception Questionnaire. Results of those analyses of variance with significant main effects (Group and/or Autonomic Perception Questionnaire change) and/or significant interaction effects (Group X APQ change) may be found in Appendix A (Table A-16).

Second, a series of t-tests were performed which compared subjects whose scores had increased on the Autonomic Perception Questionnaire with subjects who did not change or decreased in score. These comparisons were made within each group (as well as for the combination of groups 1 and 4) for each "change" score variable. A summary of results of those t-tests which produced statistically significant results appear in Appendix A (Table A-17).

Third, a series of analyses using "post" scores were conducted comparing subjects divided on the Autonomic Perception Questionnaire. T-tests were performed as in the previously mentioned results, comparing subjects within each group plus a combination of groups 1 and 4; and statistically significant results may be found in Appendix A (Table A-18).

The fourth and final series of analyses in this study involved analyses of variance investigating the presence of differences on "post"-score variables. Both main effects

(Group and APQ change) and Group X APQ change interaction effects were noted. Statistically significant results appear in Appendix A (Table A-19).

Results Summary

In summary, the stated hypotheses in this study were addressed through the use of contrasts or t-tests allowing the direct comparison of groups or combinations of groups of interest theoretically and potentially in support of previous research. The hypotheses predicted differential change (pre to post) based on the differential production of heightened self-awareness. Tests of the hypotheses yielded few results of statistical significance.

The use of dispositional self-consciousness designed to replicate results of manipulated (state) self-awareness failed to produce findings in support of previous work. Additional analyses involved comparisons (t-tests, as in Hypotheses 6 and 7) designed to investigate the presence of other variables (social anxiety, body/self-image, and psychopathology) which might confound results. Tests for these three variables produced no results of significance.

An analyses of the variable: EVENTS did yield a pattern of significant findings when focusing on Group 5, which had listened to questions involving "higher education."

Certain pre-score/change score correlations had been discovered statistically significant, indicating that change in these cases was dependent on the level of the pre-score.

These findings called into question the appropriateness of using change scores in the analyses of this data. As a result, a series of analyses were conducted using ANCOVA, which compensated for the significant correlations by making the pre-score the covariate. Results tended to follow the pattern noted in the original contrasts.

The final analyses of this study involved the creation of new groups on an individual difference variable: the Autonomic Perception Questionnaire (APQ). Within each condition, one group was composed of individuals who increased their score pre to post and another group of those who had not changed or had decreased in score. Analyses utilized both change scores and "post-scores" and involved the comparison of groups and subgroups within each condition. A series of t-tests and analyses of variance were conducted. Some results of significance were discovered, including both main effects such as: GROUP and interaction effects (GROUP x APQ Change).

Chapter 4

Discussion

The absence of a clear cut pattern of results in this study suggests the need for closer scrutiny of study results, subject sample, measures utilized, study design and methodology, environmental conditions during the data collection process, and theory, both as separate considerations and as this study's unique mix of the above mentioned variables.

The purpose of this study was the investigation of the differential effects of producing a heightened self-awareness in individuals by using stimuli, linked, theoretically and in previous research, to a state of (1) private or (2) public self-awareness.

Five experimental conditions were designed to produce different types of self-awareness experiences, both private and public, and--in one condition--both simultaneously. Previous research had tended to focus on one single type of experience or the other without attempting a direct comparison of the private and public experiences or exploring the nature of what takes place when both types of self-awareness are heightened at the same time.

Theory predicts that, when confronted with stimuli such as a mirror, which remind an individual of his or her status as an object in the world, a greater private or inner focus is produced, in turn leading to an increased awareness of internal states. When an individual encounters stimuli such as an audience, audio or videotape recorder, or camera, theory predicts that the individual's attention will be drawn outward to public or social presentation concerns. In such a setting, at least a competition between inward focus and public concerns will exist.

By definition, this study also involved several sources of non-manipulated increase in self-awareness. Participation in an experiment, receiving instructions from an experimenter, and completing initial instruments were experiences that all subjects had in common, across all five experimental conditions. However, the results of such "baseline" heightened self-awareness may alter the interpretation of certain results and may be different for different individuals. The issue of non-manipulated sources of heightened self-awareness will be addressed in more detail later in this chapter.

Results

Hypotheses 1 through 5 involved a series of direct comparisons between groups or combinations of groups that represented comparisons of private, public, and private-public self-awareness experiences. Change or difference

scores (post-scores minus pre-scores) were used as the dependent measures for the original statistical analyses.

Hypothesis 1 attempted to isolate all subjects exposed to stimuli which heightened private self-awareness, only, and to compare them with subjects confronted with public, public-and-private, and more "neutral" experiences. Out of the 13 dependent variables investigated, only three were statistically significant (General Activation, Autonomic Perception Questionnaire, Deactivation-Sleep). These measures do not represent a consistent pattern of results because other variables, which "should be" related theoretically and intuitively and "should have" produced the same results, were not significant.

Perhaps Hypothesis 2 represented the most direct comparison of pure theory: mirror-induced private self-awareness versus presence-of-another-induced public self-awareness. Theory would predict an internal versus external (or competition between the two) comparison. Because Condition 2 involved another individual present, asking the subject "personal" questions, the circumstances of this experience contained features also common to the therapeutic setting. The results of Hypothesis 2 included significance for only one of the 13 dependent variables (General Activation). Again, this appears to be a random finding, given the lack of significance of other variables which

"should have" shown patterns very similar to the lone variable of significance.

Hypotheses 3, 4, and 5 evidenced a continuation of a more random pattern of results with zero, two (General Activation and Autonomic Perception Questionnaire), and three (Deactivation-Sleep, High Activation, and Submissiveness) variables significant for these hypotheses, respectively. For those hypotheses, other combinations of groups were compared exploring differential effects of self-awareness experiences which focused on "personal" versus "neutral" questions, the effects of adding more sources of heightened self-awareness to the experience versus listening to "personal questions" only, and public or private self-awareness versus the combination.

Hypotheses 6 and 7 attempted to support findings of previous research suggesting that the more dispositional private (Hypothesis 6) and public (Hypothesis 7) self-consciousness could produce, by themselves, the same results as a manipulated private or public self-awareness (a "state"). Only one variable yielded significant results (Current Cognitions Questionnaire, Hypothesis 6) again suggesting a basically random finding.

Overall, results of Hypotheses 1-7 do not seem amenable to interpretation based on self-awareness theory or previous research findings, either from social psychological or clinically oriented work. Generally, results of this study

do not support the prediction that subjects whose private self-awareness is heightened will differ significantly in their perceptions of their internal states from those subjects made more publicly self-aware. Neither do results of this study support previous findings that a disposition toward private or public self-consciousness will tend to produce a pattern of results similar to those found in the distinction between private and public self-awareness.

**Additional Analyses--Social Anxiety,
Body/Self-Image, and Psychopathology**

Three additional analyses were conducted focusing on the following variables: social anxiety, body/self-image, and psychopathology. The findings pertaining to social anxiety did not support the theoretical prediction that individuals scoring in the "high" range of that variable and participating in a condition of increased public self-awareness would differ significantly from individuals not as socially anxious by disposition.

Investigation of the variables body/self-image and psychopathology yielded similar results to analyses mentioned previously, with only one variable (Autonomic Perception Questionnaire) coming close to a "borderline" significance on one comparison (psychopathology). Although there appears to be no readily available theoretical interpretation for these results, a limited and tentative hypothesis may be drawn that individuals admitting to a

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higher level of psychopathology appeared to respond to the state of heightened self-awareness by becoming more aware of "uncomfortable" autonomic arousal cues than subjects scoring lower in the distribution on the psychopathology variable. The purpose of investigating the variable body/self-image was to address the possibility that individuals scoring in the "high" range of concern about their bodies might respond differently in the mirror-present conditions by virtue of that concern. Results indicate that this was not the case in this subject sample.

Correlations

Correlation matrices were produced which indicated considerable significant interrelatedness between pre-score variables, particularly among the adjective subsets of the Mood Adjective Checklist. Because all of these subsets measure mood, a certain amount of correlation should exist naturally. Nevertheless, a high degree of correlation--and in some cases, the relatively few number of items in the set--must be considered problematic for interpretation of results for any given adjective subset serving as a dependent measure.

In the case of a number of variables in this study, significant pre-score/change-score correlations existed, suggesting that for those variables, individual change was dependent in some way on the pre-score. This calls into question the appropriateness of using change scores in the

data analyses, since the use of such scores requires that no such dependence exist.

Analysis of Covariance

Analyses of covariance were conducted in an attempt to compensate for that relationship between pre-score and change score. However, again, statistically significant results tended to involve the same variables as in the initial analyses of Hypotheses 1-7, with the same random pattern of results thus seen. Further, group comparisons in the analyses of covariance depend upon the absence of group X pre-score (covariate) interaction. That is, it is assumed that the groups "change" in the same way (parallel slopes). This assumption was occasionally violated in these analyses, casting further doubt on the efficacy of group comparisons within this field of investigation. The results of the analyses of covariance, then, did not really add any new information to that already gained in the initial sets of contrast and t-test comparisons.

Reliability

An examination of the reliabilities of all measures (including measures "pre" and "post" where appropriate) suggests that less than half of the measures used as dependent variables in this study achieved reliabilities of .80 or greater. And private and public self-consciousness and social anxiety scales--much used measures in previous research--produced reliabilities lower in this study than in

earlier work. Overall, then, the robustness of many of the measures in this study must be questioned and included as a possible factor clouding the interpretation of the findings of this study.

Autonomic Perception Questionnaire

As a result of the study findings to this point and the presence of so many lower levels of reliability, an exploratory analysis was undertaken in which the subject population was divided on the basis of direction of pre to post change on a variable with a high level of reliability, pre and post. The Autonomic Perception Questionnaire (APQ) represented a measure (and a dependent variable) which appeared to be one of the least compromised of all variables in this study. Not only were both pre- and post-reliabilities above .90, this measure did not show any significant pre-score/change score correlation; and examination of group and individual scores suggested that considerable individual variation existed within the sample on this variable. Pre to post change was often considerable, but in both directions within each group, and standard deviations for this variable often sizeable. The set of analyses (analysis of variance and t-tests) with the APQ division of subjects (increase versus no change or decrease), using change scores, yielded no pattern of results readily explainable by theory or previous research findings (although a number of different variables were

found statistically significant). However, when post-scores became the dependent variables, a pattern of significant results emerged from t-tests comparing subjects within certain groups or combinations of groups. For the most part, variables yielding significant analyses were Displeasure, Depression, and Submissiveness. These results suggest that the direction of a subject's pre-to-post change on the APQ was related to the score obtained in the post-self-awareness experience measures for these variables. Displeasure, Depression, and Submissiveness involve adjectives such as unhappy, dissatisfied, controlled, influenced, depressed, discouraged, sad, and sluggish--all moods which might be thought of as "negative," uncomfortable feelings of not being in control. As perception of autonomic change (often uncomfortable for individuals) became greater, perhaps those subjects became more affectively distressed as well. These results must be interpreted with caution, however, because this pattern emerged in only one set of analyses and was not repeated when using change scores as the dependent variables. Nevertheless, the use of the APQ in this manner introduces the possibility of a greater focus on and use of individual difference variables (dispositional or "state") as an avenue of investigation in self-awareness research. These results also suggest the potential for different results when post-

scores become the dependent variables and when measures are used which are more robust.

Baselines

A final statistical concern to be addressed in this study is the existence of a floor or ceiling effect which limits the potential for change on any given variable. And for purposes of interpretation of the results of this study, the concept of "baseline" becomes significant. At the same time a subject may be limited by a ceiling effect in the amount of increase change which may take place pre-to-post, previous research has raised the question of whether a "baseline" of a certain intensity elevation is "necessary" before a significant increase will take place on certain variables--anxiety or depression, for example. In other words, do certain individuals need to begin at some particular level of intensity before the experience of heightened self-awareness will have a significant, measurable impact on that person as seen in the pre-to-post change? Where that level may be, and for whom, and to what extent might this involve, especially, ceiling effects are not known with any degree of certainty at present.

Subject Sample

Related to the issue of "baseline" level of intensity is the issue of composition of the subject sample within self-awareness research. Blanco and his colleagues (1986) found significant correlational results with clinical

populations, while other work by Mahoney and his colleagues in 1987 using volunteer or student samples has not resulted in the same type of findings. Might clinical populations, such as agoraphobics or depressives (or simply a sample scoring in a higher range on a psychopathology scale), have baseline levels of anxiety or depression of a "sufficient" intensity to make them more sensitive in some way to a heightened self-awareness, and thus to a greater awareness of these internal states? And what is a "sufficient" level? And does it vary for each individual? At different times? In different situations? Mahoney (Personal Communication, June 12, 1988), commenting on preliminary results of the 1986 study by Blanco et al., stated that the data seemed to suggest the necessity for "some sort of activation (to be) present" for a mirror to have impact as a manipulation of level of self-awareness. Thus, clinical samples in that study may have differed due to the presence of certain amounts of activation existing by definition of the particular disorder in question. By contrast, in the present study, non-clinical subjects--even those individuals evidencing a large pre-to-post change on any given variable--generally had pre-scores on the lower end of the range possible. Post-scores, then, tended to be mid-range or just higher. Future research efforts in this area might include more use of clinical samples, more attention paid to pre-score baseline levels in both clinical and non-clinical

samples, and utilization of comparison groups made up of subjects achieving varying levels of pre-score intensity on variables of interest. This last possibility will probably necessitate the use of dependent variables without ceiling and floor effect properties to adequately sample a wide variety of baseline levels for groups and still be assured that change is possible to measure.

The issue of sample composition involves considerations beyond that of baseline of intensity of internal states. Much of the self-awareness research in the past 18 years has been done in the laboratory with student or other "normal" volunteer samples, involving specific tasks with a fairly short time frame for task completion. Student volunteers often participate in a study to receive credit--as was the case in this study--or as part of a course requirement. For some students, the circumstances of their participation may mean less interest and investment in the participation and the temptation to complete the task for that credit or requirement as quickly as possible. Particularly when the experimental task involves a relatively short time frame, students may respond to post-task measures by giving responses identical to the ones they remember giving in the pre-task measures. Thus, it becomes difficult, or impossible, to tell whether the response is a genuine indication of the subject's "true" internal state or whether there has been, indeed, no change in perception of that

state. Another potential difficulty in working with a student sample (although not exclusively applicable to a student population) who may feel a need to complete tasks as rapidly as possible, is the resulting danger of subjects not following instructions completely during the time they were not being observed by an experimenter. In this study, there is no way of knowing whether subjects faced the mirror at all times; whether they listened to all of the taped questions, and at the time intervals suggested by the instructions; not to mention whether they actually "thought about" the question at hand. Only in the conditions in which a response was required, to an experimenter or into a tape recorder, was there some greater assurance that these subjects had experienced their assigned experimental condition. On the basis of a post-experiment debriefing and an open-ended question regarding each subject's speculation about the purpose of the study, subjects in this study appeared acutely aware of (1) being in an experiment and (2) needing to produce some sort of output. Experimenters reported that a number of subjects seemed to agonize over the pre-task measures, trying to decide what the experimenter wanted. Because both being in an experiment and completing initial measures are non-manipulated sources of heightened self-awareness, these observations have far reaching ramifications and will be discussed further at a later point in this chapter.

The age of the subjects may also have influenced their overall response to the experimental situation. Most subjects in this study were still in their freshmen year of college, taking their first psychology course at the college level. Some may have found their participation quite anxiety-provoking or may have experienced considerable anticipatory anxiety, which abated after a time and perhaps contributed to the decrease in intensity in certain moods and autonomic perception seen in quite a few subjects' pre-to-post change. The age of these subjects and their relative inexperience with college could also have made them more sensitive to the subject of higher education, generally, and accounted for some of the findings regarding the "not-so-neutral" questions in Condition 5. Because there were only 12 subjects out of 166 who were over 21, it was not possible to do any meaningful comparisons on the basis of age. Future research efforts may find it valuable to include different age groupings.

The use of a student sample also raises the issue of generalizability of results to other populations. Potentially significant differences between clinical and non-clinical populations in this area of research have already been mentioned. Even the use of various clinical populations to be compared with each other should be approached with some caution. To what extent are such populations pure in terms of the included individuals being

alike in various dimensions of personality and behavior? For example, there are indications that in disorders such as agoraphobia and alcoholism, there is most probably not a unitary personality profile. A number of profile patterns utilizing MMPI results have been discovered within these diagnostic groups (Brown et al., 1989; Graham & Strenger, 1988). These findings suggest that while individuals may have many symptoms in common, they may also vary individually in etiology and in the ways in which they experience the disorder. Thus, assumptions related to the use of a given clinical population because of certain assumed baselines may actually fail to acknowledge and respond to the issue of clinical complexity. And, at least anecdotally, there are indications that certain clinical populations may behave, in given situations, in ways which are not consistent with self-awareness theory. For example, Vietnam combat veterans with post-traumatic stress disorder often evidence both anxiety and depression. An occupational therapist, doing art-therapy at an outpatient VA medical center PTSD treatment program reported (Miller, Personal Communication, April 9, 1990) that patients have been able to discuss their projects immediately with staff and other patients they have just met as a way of sharing personal experiences and feelings. According to Ms. Miller, over the three years that this treatment program has been in operation, she has not seen any significant reluctance to

share or any visible signs of evaluation apprehension-- behavior which she had expected and has seen in groups of traumatized adolescents. To what factors the behavior of the Vietnam veterans just mentioned can be attributed is not known with any degree of certainty; but this example, again, highlights the issue of clinical complexity and its impact when utilizing self-awareness theory to predict behavioral response.

Measures

Another consideration in the interpretation of the results of this study must be the measures chosen for this work. The issue of reliability resulting from the study has already been discussed. To a great extent, for the measures used in this work--with the exception of the Offer Self-Image Questionnaire and the Self-Consciousness Scale--relatively few previous reports concerning reliability and validity in other studies appear to exist. Yet, these measures were felt to be the most valuable for the purposes of this study (as outlined in previous sections). Thus, information concerning the usefulness of these measures in previous research has been somewhat limited. Because of the limitations in interpretative options existing due to the previously discussed statistical concerns, it is difficult to suggest to just what extent the considerations may be factors in these results. Nevertheless, the issue of sensitivity of the dependent measures to transitory and,

perhaps, subtle change must be mentioned as well. The instruments used in this study were designed to assess internal states of mood, autonomic arousal, and cognition. Not only may these measures have varied in the extent to which they effectively and accurately assessed these states, these internal states--themselves--may be, to varying degrees, amenable to assessing a more transitory state. Thus, measures may not have been able to pick up subtle, brief change; and, additionally, the particular state being assessed may actually be more dispositional by tendency. For example, the Current Cognitions Questionnaire (CCQ) may have assessed a state which, in fact, is less of a "state" than a more dispositional variable; and transitory change is simply not as much a part of this internal dimension. The Mood Adjective Checklist (MAC) was chosen because of its ability to assess mood along multiple dimensions simultaneously as well as to record a range of intensity. Because of the low reliabilities of many of the subsets, exploration of future alternatives seems appropriate: either choosing a different assessment of mood or doing factor analytic work to redefine and relabel factors present in the MAC. Additionally, this was a lengthy measure (58 items) and, on the basis of pilot subject feedback, necessitated the presence of a dictionary. Both the length and the unfamiliarity with certain words may have caused subjects to respond to this measure in a hurried or less

attentive manner. Because of the significant role that mood or affect has played in previous self-awareness research, and its importance in clinical work, a sensitive, highly reliable measure of mood state is vital to this type of research.

Manipulation Checks

The topics of design and methodology of this study include several issues pertinent to interpretation of the results. The topic of manipulation checks is one which was discussed in the first chapter of this work and is related to a key assumption of this study's design and purpose: (1) that certain stimuli (such as a mirror) do produce an increase in a particular type of self-awareness (private) and (2) that such an increase will have certain predictable results or responses from individuals experiencing these stimuli. The issue of including a manipulation check is one with which previous researchers in this area have struggled. To a great extent, the only information which can really be gained by such a check is the presence of a heightened "private" self-awareness. This phenomenon has been assessed by use of measures such as one involving increases in the use of first person pronouns. In a study in which different types of self-awareness experiences are being designed for purposes of direct comparison, an appropriate first step in future research might be a check to assess for the presence of at least a heightened private self-awareness. However,

even manipulation checks used in previous research do yield potentially ambiguous findings--for example, lack of clarity as to whether the use of first person pronouns reflects purely "the degree of self-focus" or "also the willingness to tolerate self-awareness," because saying "I," in itself, may actually increase a state of private self-awareness (Geller & Shaver, 1975, pp. 100-101). Nevertheless, the issue of what exactly is being produced--basic validity concerns--is one which warrants continued consideration.

Time Frame

Time frame is an issue involved in this study which includes two forms: (1) the time frame of each individual's participation in the experiment and (2) the time period during which all data were collected (nearly two academic terms). The possibility of subjects responding to "post"-measures with answers identical to "pre"-measures due to an interest in completing participation as soon as possible may also involve a time frame in which the self-awareness experience was sufficiently short that subjects were easily able to remember their initial responses. Additionally, a question exists concerning an "ideal" or "minimum time necessary" for the self-awareness experience to have an impact in a manner which will be reflected in "post"-task assessment of any change. And different stimuli (for example, a mirror versus a tape recorder) may have different levels of intensity of impact: both the impact of each

stimulus by itself and the impact related to the amount of time the subject is exposed to that stimulus. When change may be expected to be more subtle, perhaps a lengthier exposure to self-awareness heightening stimuli might maximize chances of a more subtle change being measurable.

The other consideration involving time frame raises the issue of whether the lengthy period of time for data collection resulted in too much variation among subjects based on time of year, time of term, whether participation occurred during mid-term exam week or at the beginning of a term, etc. This study necessitated the running of subjects individually. Even with five or six experimenters, it simply takes time to run 166 subjects for 45-60 minutes each. Thus, this type of time factor seems part of such a study, by definition; although its consideration must be kept in mind when addressing results of the study, perhaps aided by individual information gained from open-ended questions such as significant occurrences in recent days or weeks.

Structure

Perhaps one of the major considerations related to study design is the structure of Condition 5, in which "neutral" questions on tape provided the only manipulated source of self-awareness. Based on a number of significant results from an analysis investigating differences between groups composed of subjects identifying "school" concerns as

dominant during the previous 24 hours, it seems clear that for many subjects, "school" was not a "neutral" topic. Despite questions written to avoid personalizing the subject of higher education, this topic may be one evoking stronger feelings in college students than in most other groups. And as such, levels of arousal may have existed within Group 5 to make original plans for group comparisons involving Condition 5 no longer as meaningful. Some subjects may have become intensely self-aware due to the personal concerns which were expressed in answering an open-ended question following the experiment. A related issue will be discussed later in this chapter: to what extent were the groups, as designed and considering non-manipulated sources of self-awareness, as theoretically pure as the purpose of this study required?

Environmental Distraction

Environmental distraction for subjects during the data collection period is a consideration which must be addressed. Merely participating in an experiment heightens self-awareness. What effect, then, does distraction, environmental "contamination," have when added to the baseline level of self-awareness increase? During the data collection phase of this study, hallway noise and traffic were present nearly every day but to widely varying degrees. At mid-day, such distraction was at its peak; by the time that the last subjects of the day were seen at 6:00 or 7:00

pm, such distraction was often minimal or non-existent. Some noise and traffic was predictable (such as during change of classes); other distraction was not; and, as a result, it was difficult to structure any assessment of distraction into the study procedure. In future research efforts, an open-ended, post-experiment question might be included to assess the degree to which distraction was present and the level to which it disturbed the subject in his or her perception. This information could then become a part of the data analysis to investigate ways in which such distraction may interact with the differential experiences of heightened self-awareness. The ideal, of course, is a distraction-free environment. However, this goal may simply not be a realistic one in many research environments.

The final sections of this chapter will deal with more theoretical concerns related to this study and for future consideration, including the specific variables used in this study, issues of suggestibility and demand characteristics, non-manipulated sources of self-awareness, and the issue of whether increased self-awareness translates into some type(s) of predictable behavior (self-report). A concluding section will summarize the findings of this study and include additional suggestions for replication and future research.

Cognition

The constructs used as dependent variables in this study included cognition, mood, and autonomic perception. The investigation of what occurs cognitively when an individual experiences a heightened self-awareness is an issue which has not been directly addressed in previous research. The development of a measure of current cognitions and its inclusion in the data analysis in this study was designed to be exploratory in nature. A question seems to exist as to whether cognition can be experienced as transitory. That is, can change in cognitive state as represented by items on the CCQ be experienced in a fairly sudden, brief manner? Or is cognition a more dispositional type of construct, with change occurring over much longer periods of time? Future use of the Current Cognitions Questionnaire should begin with a factor analysis to investigate presence of factors such as self-efficacy. Another issue for consideration is the extent to which cognition may be related to affect or arousal in any change process. And do cognitions described as "negative" (for example, feeling a lack of personal control) seem to affect individuals differently in terms of perception and self-report of other internal states than cognitions usually thought of as "positive" (for example, having confidence in one's ability to complete a task or to do well)? The measure used in this study contains items reflecting both

types of cognitions. The intent of this study was the investigation of any change pre-to-post. Replication or future research might involve an exploration of the differential effects of the negative cognitions as opposed to more positive ones. Perception of personal control can represent an individual difference variable, but the reality of how much control an individual actually had in this study varied from group to group. Conditions 4 and 5 involved merely the listening to of tape-recorded questions. The subject had complete control over the time frame for both listening to the questions and thinking about them, as the instructions outlined. Condition 2, however, included the presence of an experimenter in the room interacting with the subject. Thus, the subject had far less control over the rate at which the questions were being asked and the time frame for response as well as experiencing the addition of some level of evaluation apprehension. Condition 2 represented the only case in which more subjects increased pre-to-post on the Autonomic Perception Questionnaire (APQ) than reported no change or a decrease--and the difference was by a fairly large amount (25 increase, 9 decrease or no change). It seems reasonable then to suggest, based on results of this study, that lack of personal control plus evaluation apprehension may result in a significant amount of autonomic arousal, which individuals then reported. Future research might include a more in-depth focus on

cognition, especially related to personal control or even the use of this variable as a measure to divide the subject sample, as was done with the APQ in this study.

Mood and Autonomic Perception

Previous research (Scheier, 1976; Scheier & Carver, 1977; Carver, Blaney, & Scheier, 1979) has suggested [although not unanimously (Levine & McDonald, 1981; Lanzetta, Biernat, & Kleck, 1982)] that an increase in private self-awareness leads to an increase in awareness of internal states and an awareness of an increase in intensity of those states. Much of this earlier research has focused on affect or mood. These findings formed a vital part of the premise and design of this study. It has been previously mentioned that both increases and decreases were seen pre-to-post on the dependent variables, most prominently in the case of the Autonomic Perception Questionnaire. A number of possible explanations may exist for these differences, both from group to group and on an individual basis: (1) some subjects may have become more comfortable by the time the self-awareness experience was over, and a decrease in reported intensity might have reflected this change; and (2) as previously mentioned, some subjects may simply have reported the same level of intensity in an effort to "get it over with," rather than taking additional time to think about it. However, another possible interpretation, may be related to the findings of

Gibbons (1977) and Gibbons, Carver, Scheier, and Hormuth (1979) that heightened self-awareness appeared to make not only the presence of affect more salient but the absence of affect as well. At what point an absence of something is noticeable for any given individual is difficult to assess; but these previous findings suggest that, at least for affect/mood and perhaps for autonomic arousal, two "baselines" may actually exist which help to determine the direction of change pre-to-post.

The subject sample in this study was entirely female. The Autonomic Perception Questionnaire has been utilized in previous research with both female and male subjects, and Borkovec (1976) discussed gender differences in response, with "[f]emales tending to obtain higher total scores than males" (p. 290) in one sample of "normal" subjects. Differences existed between males and females both "in absolute APQ item scores and in patterns of autonomic cue perception." Thus, not only do individuals seem to differ (as the results of this study suggest), but females as a group also appear to differ from males. Both male and female subjects might be included in future research to further investigate these differences.

While the purpose of this study did not include any attempt to measure accuracy of self-report per se, a greater understanding of individuals' responses to the experience of heightened self-awareness might be gained by including the

collection of physiological data such as heart rate, muscle tension, etc. in addition to data from the individuals' reports of their perceptions of autonomic arousal. As mentioned in the first chapter and in the work of Blanco, Mahoney, and their colleagues, the self-awareness experience tended to produce differential and unexpected patterns of physiological responses with different types of stimuli. Collecting data from both physiological state and subject perception and self-report could add to a greater understanding of the nature of the self-awareness experience, particular with regard to self-report behavior.

Personal Experience of Internal States

A related issue to that of internal perception and self-report is the question of whether individuals experience internal states and their intensity at that moment (such as mood, cognitive state, and autonomic arousal) simultaneously. Or might there be some type of ordering of that experience? For example, some individuals may be more sensitive than others to cues of autonomic arousal, thus experiencing this state first and most intensely and perhaps reporting autonomic arousal experiences differently from the report of mood or cognition. At least for some individuals, autonomic arousal may also be a state which is experienced in a more transitory fashion, with change occurring quickly and being more amenable to individual notice than, for example,

cognitive state. Thus, individual differences almost certainly exist but so perhaps do differences in the nature of the constructs themselves (as addressed earlier in this section).

Self-Consciousness

Self-consciousness was a dispositional variable used in this study to investigate the relationship between tendency to be self-conscious in a particular manner and the self-awareness experience. As already mentioned, all three subscales (private and public self-consciousness and social anxiety) in this study yielded lower reliabilities; thus, along with other statistical concerns, making it difficult confidently to draw any conclusions.

The one variable which resulted in significant findings in the three sets of analyses was the Current Cognitions Questionnaire when those subjects in the higher range of private self-consciousness in Conditions 1 and 4 were compared with those in the lower range. This result seems reasonable in terms of the more cognitively-oriented items in the private self-consciousness subscale. Additionally, Fenigstein, Scheier, and Buss (1973) reported that individuals "higher" in private self-awareness seemed more responsive to affective state as well. Therefore, continued use of the Self-Consciousness Scale in self-awareness research seems warranted despite the statistical limitations involved in this study.

Suggestibility and Demand Characteristics

Suggestibility refers to the directing of a subject's attention to certain aspects of the self, for example, affect, bodily responses, etc. Suggestibility has been purposefully included in previous research (Gibbons, 1977; Scheier, Carver, & Gibbons, 1979) by the experimenter's suggestion to the subjects that certain affect or certain physiological states will be experienced as the result of an experimental manipulation (of affect, perhaps, or use of a placebo coupled with the suggestion that subjects will "feel" a certain way after ingesting the placebo). In some cases, subjects in previous studies have been led to expect a different internal state than is actually present (Gibbons, 1977; Gibbons et al., 1979). Previous findings have suggested that self-focus reduces suggestibility because of an increased awareness of the actual internal state. The concept of suggestibility is related to the issue of demand characteristics (which refer to an experimenter's influence on subjects via verbalizations or demeanor) in the sense of something planned or inherent in the experimental setting or procedure which directs or subjects attention in a certain way. This study was planned to be as free of suggestibility and demand characteristics as possible, the experimenter being as unintrusive as possible and the subject merely being asked to report their experience of that moment. There was no purposeful attempt

made to suggest or to divert responses in any given direction. Nevertheless, the fact that subjects were completing measures which already mentioned specific moods, cognitions, and aspects of autonomic arousal--thus focusing the subjects' attention on their level of presence or absence of that specific mood, cognition, or autonomic state--by definition introduces some level of suggestibility. As part of an effort to gain as much information about the self-awareness experience as possible, the use of more general and open-ended questions again might be one way to even further reduce suggestibility.

Because the measures of self-report lead, by definition, to increased focus on the self as the subject attempts to rate him or herself along that dimension, these measures then become a source of non-manipulated increase in "private" self-awareness. A key issue in this study must be the extent to which the five experimental conditions can be considered examples of theoretically pure private or public self-awareness, to be directly compared. Even low-level demand characteristics constitute a source of non-manipulated self-awareness in the sense that having an experimenter present in any fashion as a figure of authority introduces potential for heightened evaluation apprehension (public self-awareness). Because non-manipulated sources of self-awareness tend to be both private and public, conditions which attempted to represent "private" or

"public" self-awareness, only, actually included at least a small measure of the other type of self-awareness. Just what difference this may have made by group is not known. Individual difference variables may also play a key role in the extent to which a particular subject responds to a non-manipulated source of self-awareness and the interaction with the particular manipulated sources structured into each condition. For example, did an initial increase in evaluation apprehension "wash out" some of the impact of the mirror or taped "personal" questions? Again, additional, post-experiment, open-ended questions concerning the subject's perception of the impact of the experimenter produced during instructions and initial measures might add to a greater understanding of the impact of these non-manipulated sources.

Self-Awareness Theory

A final theoretical point significant to this study and to the area of self-awareness research, in general, is the issue of whether an increase in objective self-awareness does indeed lead to an increased awareness of internal states, which in turn leads to a self-report of that increased internal awareness (predictable behavior). Might other factors such as an individual need to feel in control or discomfort with letting others know about increased anxiety or depressive feelings (cognitive and emotional factors) cause some individuals to experience an increase in

awareness of these feelings but not report them in a predictable fashion? Or might an increase in self-awareness result in exaggerated self-reports, as has been reported by Gillis and Carver (1980) regarding reports of emotional states? Although, as previously stated, accuracy per se was not a concern of this study, just-mentioned points suggest that self-report behavior may be more complex and influenced by more factors than simply an increase in awareness of internal states. Due to the complexity of the mechanisms which may be operating in an increase of self-awareness, these are questions for which an answer may simply not be available.

Group Versus Individual Focus

Based on the results of this study and the findings of Mahoney and his colleagues in three separate studies, it seems reasonable to raise the question of whether group comparisons are the most valuable means of investigating the effects of increased self-awareness in individuals. These studies have all suggested the presence of considerable variation, both between clinical and non-clinical samples and between individuals within groups, especially groups of "normal" subjects. As suggested by the results with clinical populations and the limited results of dividing subjects on the basis of direction of change on the APQ, perhaps assigning subjects to groups based on individual difference variables, including psychiatric diagnosis, may

be a more profitable means of utilizing group comparisons. Such focus in self-awareness research might also provide more information applicable to clinical work, which deals with a wide range of individual difference variable issues.

Summary and Research Considerations

In summary, results of this study generally failed to support the prediction that the differential production of heightened self-awareness will produce differential response in the perception of internal states. Significant results in the data analyses of the stated hypothesis and additional analyses appeared to be more of a random pattern rather than results which could be solidly connected to theoretical prediction and findings of previous research efforts. The exception to this statement is the limited and still tentative findings of comparing subjects who increased pre-to-post on the Autonomic Perception Questionnaire and those who did not change or decreased.

The most prominent explanation for the failure of this data to support the stated hypothesis appears to rest with the statistical limitations mentioned. First, many of the measures yielded fairly low reliabilities, both "pre" and "post." Second, the presence of significant pre-score/change score correlations suggest that the use of change scores with this data is seriously compromised. And third, the presence of group X pre-score interaction effects also makes the utility of the use of ANCOVA for analysis of

this data problematic. Thus, the "non-statistical" conclusions and interpretations discussed in this final chapter must be considered with caution.

Any replication of this study should focus on the following:

(1) Measures chosen, especially the Mood Adjective Checklist and the Current Cognitions Questionnaire. Factor analytic work and, if necessary, redefining and relabeling the MAC factors may result in increasing the measure's reliability. While the use of this particular instrument allowed subjects considerable freedom in choosing from a large number of mood states, representing several dimensions of mood, other measures of this construct might also be considered, such as the Profile of Mood States (POMS).

(2) A change in any "neutral" questions used in Group 5 is vital. Although it is extremely difficult to predict personal reactions of individuals to any given topic, the use of questions related to higher education clearly was not the best choice for a sample of college students.

(3) If possible, environmental distraction should be limited as much as possible.

(4) Consideration of lengthening the amount of time subjects are exposed to stimuli heightening self-awareness might allow some of the more subtle changes to emerge, especially with measures which may be less sensitive to transitory changes in the perception of internal states.

(5) Dividing subjects on some individual difference variable, including clinical diagnosis, may result in more sensitivity to change in other dependent variables, perhaps related to the concept of "baseline" discussed earlier in this chapter.

Other considerations for future research efforts should involve the following:

(1) Broadening the composition of the subject sample to include males would provide additional information on the experience of a heightened self-awareness, especially in the area of autonomic perception where gender differences using the APQ have been discovered.

(2) Given the presence of considerable individual variation in results of this and of other studies, a shift from focus on group comparisons to collecting more information on individuals may provide results more helpfully applicable to various clinical endeavors. In that way, further information might also be gained on what type of knowledge may result from using certain stimuli as adjunctive techniques within the therapy paradigm. Beck (1985) referred to the use of a mirror in free association exercises. And Wilps (1972, in Goldberg, 1985, p. 248) as well, had argued that because a mirror may not

. . . provide objective test results . . . [given]
its power to call forth profound emotionally laden
attitudes about the self . . . [it] . . . might be

better used like the inkblot test as a projective technique where the subject describes the images [he or she] sees and the associated ideas that come to mind.

Self-awareness, as a form of self-confrontation, should have the potential to increase an individual's knowledge of self-thought, feelings, behaviors. And when used in conjunction with a therapeutic process, it should potentially increase the knowledge of the therapist as well, both knowledge of the client or patient and knowledge concerning the therapist, him or herself (and knowledge derived from their interaction). By definition, the clinical setting includes sources of increased self-awareness of both a public and private nature. Because most therapeutic settings will involve a simultaneous mixture of the two, perhaps it is this aspect of self-awareness which should be investigated in greater depth. As previously discussed, examples exist of groups within a clinical population where theoretical prediction is not supported. Factors such as trust and a client's or patient's ability and willingness to take emotional risks will always impact whatever other changes occur from an experience of heightened self-awareness. Thus, findings of research in this topic area must also be viewed as highly changeable over time. Nevertheless, the ability to discover potentially new and/or different ways of approaching the

acquisition of self-knowledge should be welcomed by
clinicians and clients/patients alike.

APPENDICES

Appendix A
Additional Tables

Table A-1

Correlations Between Measures: "Pre"-Scores (Entire Sample)

	GNRLACT1	HIACTIV1	GNRLDEA1	DEACSLP1	PLEAS1	DISPLS1	AROUS1	SLEEP1	DOM1	SUBMIS1	DEPRESS1	CCQPR	APQPR
GNRLACT1	1.0000 (0) P=*	-.0203 (164) P=.796	.0321 (165) P=.682	-.5510 (166) P=.001	.6830 (166) P=.001	-.3965 (164) P=.001	.78321 (164) P=.001	-.7036 (165) P=.001	.4980 (165) P=.001	-.0277 (164) P=.724	-.5133 (163) P=.001	-.0217 (166) P=.781	-.0698 (166) P=.371
HIACTIV1	-.0203 (164) P=.796	1.0000 (0) P=*	-.4232 (163) P=.001	.1707 (164) P=.029	-.2275 (164) P=.003	.5281 (162) P=.001	.1769 (162) P=.024	.1633 (163) P=.037	-.0820 (163) P=.298	.3342 (163) P=.001	.5280 (161) P=.001	.2943 (164) P=.001	.3641 (164) P=.001
GNRLDEA1	.0321 (165) P=.682	-.4232 (163) P=.001	1.0000 (0) P=*	.0351 (165) P=.654	.2582 (165) P=.001	-.2195 (164) P=.005	-.0264 (164) P=.737	.1169 (165) P=.135	.1234 (164) P=.115	-.0301 (163) P=.703	-.1437 (162) P=.068	-.0872 (165) P=.266	-.1549 (165) P=.047
DEACSLP1	-.5510 (166) P=.001	.1707 (164) P=.629	.0351 (165) P=.654	1.0000 (0) P=*	-.3609 (166) P=.001	.3611 (164) P=.001	-.4869 (164) P=.001	.6437 (165) P=.001	-.0658 (165) P=.401	.1654 (164) P=.034	.4999 (163) P=.001	.1852 (166) P=.017	.1546 (166) P=.047
PLEAS1	.6830 (165) P=.001	-.2275 (164) P=.003	.2582 (165) P=.001	-.3609 (166) P=.001	1.000 (0) P=*	-.6824 (164) P=.001	.5215 (164) P=.001	-.4695 (165) P=.001	.5670 (165) P=.001	-.1680 (164) P=.032	-.6339 (163) P=.001	-.0837 (166) P=.283	-.0649 (166) P=.406
DISPLS1	-.3965 (164) P=.001	.5281 (162) P=.001	.2195 (164) P=.005	.3611 (164) P=.001	-.6824 (164) P=.001	1.000 (0) P=*	-.2173 (163) P=.005	.5199 (164) P=.001	-.2674 (163) P=.001	.3686 (162) P=.001	.8547 (161) P=.001	.2339 (164) P=.003	.2625 (164) P=.001
AROUS1	.7831 (164) P=.001	.1769 (162) P=.024	-.0264 (164) P=.737	-.4869 (164) P=.001	.5215 (164) P=.001	-.6824 (164) P=.001	1.000 (0) P=*	-.5622 (164) P=.001	.4180 (163) P=.001	.0923 (162) P=.243	-.3226 (161) P=.001	.0584 (164) P=.458	.0339 (164) P=.666
SLEEP1	-.7036 (165) P=.001	.1633 (163) P=.037	.1169 (165) P=.135	.1234 (164) P=.115	-.0301 (163) P=.703	-.1437 (162) P=.068	-.0872 (165) P=.266	-.1549 (165) P=.047	-.1549 (165) P=.047	-.1549 (165) P=.047	-.1549 (165) P=.047	-.1549 (165) P=.047	-.1549 (165) P=.047

(table continues)

Table A-1 (cont'd.).

	GNRLACT1	HIACTIV1	GNRLDEA1	DEACSLP1	PLEAS1	DISPLS1	AROUS1	SLEEP1	DOM1	SUBMIS1	DEPRESS1	CCQPR	APQPR
DOM1	.4980 (165) P=.001	-.0820 (163) P=.298	.1234 (164) P=.115	-.0658 (165) P=.401	.5670 (165) P=.001	-.2674 (163) P=.001	.4180 (163) P=.001	-.2187 (164) P=.005	1.0000 (0) P=*	-.1085 (163) P=.168	-.2844 (162) P=.001	.0048 (165) P=.951	.0814 (165) P=.299
SUBMIS1	-.0277 (164) P=.724	.3342 (163) P=.001	-.0301 (163) P=.703	.1654 (164) P=.034	-.1680 (164) P=.032	.3686 (162) P=.001	.0923 (162) P=.234	.2278 (163) P=.003	-.1085 (163) P=.168	1.0000 (0) P=*	.4113 (161) P=.001	.3396 (164) P=.001	.2861 (164) P=.001
DEPRESS1	-.5133 (163) P=.001	.5280 (161) P=.001	-.1437 (162) P=.068	.4999 (163) P=.001	-.6339 (163) P=.001	.8547 (161) P=.001	-.3226 (161) P=.001	.6392 (162) P=.001	-.2844 (162) P=.001	.4113 (161) P=.001	1.0000 (0) P=*	.2734 (163) P=.001	.3027 (163) P=.001
CCQPR	-.0217 (166) P=.781	.2943 (164) P=.001	-.0872 (165) P=.269	.1852 (166) P=.017	-.0837 (166) P=.283	.2339 (164) P=.003	.0584 (164) P=.458	.1678 (165) P=.031	.0048 (165) P=.951	.3396 (164) P=.001	.2734 (163) P=.001	1.0000 (0) P=*	.3344 (166) P=.001
APQPR	-.0698 (166) P=.371	.3641 (164) P=.001	-.1549 (165) P=.047	.1546 (166) P=.047	-.0649 (166) P=.406	.2625 (164) P=.001	.0339 (164) P=.666	.1763 (165) P=.024	.0814 (165) P=.299	.2861 (164) P=.001	.3027 (163) P=.001	.3344 (166) P=.001	1.0000 (0) P=*

Note: GNRLACT = General Activation; HIACTIV = High Activation; GNRLDEA = General Deactivation; DEACSLP = Deactivation-Sleep; PLEAS = Pleasure; DISPLS = Displeasure; AROUS = Arousal; SLEEP = Sleepiness; DOM = Dominance; SUBMIS = Submissiveness; DEPRESS = Depression; CCQ = Current Cognitions Questionnaire; APQ = Autonomic Perception Questionnaire. PR or 1 = "Pre" Score.

Table A-2

Correlations Between Measures: "Post"-Scores (Entire Sample)

	GNRLACT2	HIACTIV2	GNRLDEA2	DEACSLP2	PLEAS2	DISPLS2	AROUS2	SLEEP2	DOM2	SUBMIS2	DEPRESS2	CCQPO	APQPO
GNRLACT2	1.0000 (0) P=*	.1238 (165) P=.113	-.1852 (165) P=.017	-.5625 (165) P=.001	.6078 (165) P=.001	-.4668 (165) P=.001	.7318 (165) P=.001	-.7318 (165) P=.001	-.4824 (165) P=.001	-.0006 (164) P=.994	-.4969 (165) P=.001	-.0425 (165) P=.587	-.0380 (165) P=.628
HIACTIV2	-.1238 (165) P=.113	1.0000 (0) P=*	-.3798 (165) P=.001	.1193 (165) P=.127	-.1874 (165) P=.016	.4069 (165) P=.001	.4223 (165) P=.001	.0269 (165) P=.732	-.0806 (165) P=.303	.4686 (164) P=.001	.4404 (165) P=.001	.4235 (165) P=.001	.5635 (165) P=.001
GNRLDEA2	-.1852 (165) P=.017	-.3798 (165) P=.001	1.0000 (0) P=*	.2123 (166) P=.006	.1260 (165) P=.107	.0175 (165) P=.823	-.2609 (165) P=.001	.3603 (166) P=.001	.0550 (166) P=.481	-.0842 (164) P=.284	-.0439 (166) P=.574	-.2036 (166) P=.009	-.1857 (166) P=.017
DEACSLP2	-.5625 (165) P=.001	-.1193 (165) P=.127	.2123 (166) P=.006	1.0000 (0) P=*	-.3724 (165) P=.001	.4671 (165) P=.001	-.4208 (166) P=.001	.7424 (166) P=.001	-.1099 (166) P=.159	.2477 (164) P=.001	.5009 (166) P=.001	.1607 (166) P=.039	.1252 (166) P=.108
PLEAS2	.6078 (165) P=.001	-.1874 (165) P=.016	.1260 (165) P=.107	-.3724 (165) P=.001	1.0000 (0) P=*	-.6590 (165) P=.001	.3768 (165) P=.001	-.4570 (165) P=.001	.6189 (165) P=.001	-.2687 (164) P=.001	-.5966 (165) P=.001	-.1337 (165) P=.087	-.1766 (165) P=.023
DISPLS2	-.4668 (165) P=.001	.4069 (165) P=.001	.0175 (165) P=.823	.4671 (165) P=.001	-.6590 (165) P=.001	1.0000 (0) P=*	-.1898 (165) P=.015	.5637 (165) P=.001	-.2936 (165) P=.001	.4771 (164) P=.001	.8830 (165) P=.001	.3884 (165) P=.001	.3812 (165) P=.001
AROUS2	.7318 (165) P=.001	.4223 (165) P=.001	-.2609 (165) P=.001	-.4208 (165) P=.001	.3768 (165) P=.001	-.1898 (165) P=.015	1.0000 (0) P=*	-.5676 (165) P=.001	.4361 (165) P=.001	.1379 (164) P=.078	-.2380 (165) P=.002	.0676 (165) P=.388	.0949 (165) P=.225
SLEEP2	-.7497 (165) P=.001	.0269 (165) P=.732	.3603 (166) P=.001	.7424 (166) P=.001	-.4570 (165) P=.001	.5637 (165) P=.001	-.5676 (165) P=.001	1.0000 (0) P=*	-.2560 (166) P=.001	.2289 (164) P=.003	.6135 (166) P=.001	.1587 (166) P=.041	.1146 (166) P=.141

(table continues)

Table A-2 (cont'd.).

	GNRLACT2	HIACTIV2	GNRLDEA2	DEACSLP2	PLEAS2	DISPLS2	AROUS2	SLEEP2	DOM2	SUBMIS2	DEPRESS2	CCQPO	APQPO
DOM2	.4824 (165) P=.001	-.0806 (165) P=.303	.0550 (166) P=.481	-.1099 (166) P=.159	.6189 (165) P=.001	-.2936 (165) P=.001	.4361 (165) P=.001	-.2560 (166) P=.001	1.0000 (0) P=*	-.1520 (164) P=.052	-.2799 (166) P=.001	.0231 (166) P=.768	.0314 (166) P=.688
SUBMIS2	-.0006 (164) P=.994	.4686 (164) P=.001	-.0842 (164) P=.284	.2477 (164) P=.001	-.2687 (164) P=.001	.4771 (164) P=.001	.1379 (164) P=.001	.2289 (164) P=.003	-.1520 (164) P=.052	1.0000 (0) P=*	.4643 (164) P=.001	.4040 (164) P=.001	.4435 (164) P=.001
DEPRESS2	-.4969 (165) P=.001	.4404 (165) P=.001	-.0439 (166) P=.574	.5009 (166) P=.001	-.5966 (165) P=.001	.8830 (165) P=.001	-.2380 (165) P=.002	.6135 (166) P=.001	-.2799 (166) P=.001	.4643 (164) P=.001	1.0000 (0) P=*	.3784 (166) P=.001	.4633 (166) P=.001
CCQPO	-.0425 (165) P=.587	.4235 (165) P=.001	-.2036 (166) P=.009	.1607 (166) P=.039	-.1337 (165) P=.087	.3884 (165) P=.001	.0676 (165) P=.388	.1587 (166) P=.041	.0231 (166) P=.768	-.4040 (164) P=.001	.3784 (166) P=.001	1.0000 (0) P=*	.3561 (166) P=.001
APQPO	-.0380 (165) P=.628	.5635 (165) P=.001	-.1857 (166) P=.017	.1252 (166) P=.108	-.1766 (165) P=.023	.3812 (165) P=.001	.0949 (165) P=.225	.1146 (166) P=.141	-.0314 (166) P=.688	.4435 (164) P=.001	.4633 (166) P=.001	.3561 (166) P=.001	1.0000 (0) P=*

Note: GNRLACT = General Activation; HIACTIV = High Activation; GNRLDEA = General Deactivation; DEACSLP = Deactivation-Sleep; PLEAS = Pleasure; DISPLS = Displeasure; AROUS = Arousal; SLEEP = Sleepiness; DOM = Dominance; SUBMIS = Submissiveness; DEPRESS = Depression; CCQ = Current Cognitions Questionnaire; APQ = Autonomic Perception Questionnaire. PO or 2 = "Post" Score.

Table A-3

Means and Standard Deviations on All Variables--Group 1

Variable	N	Mean	Standard Deviation
General Activation 1	34	47.64	18.89
High Activation 1	33	27.00	10.22
General Deactivation 1	34	52.17	11.01
Deactivation-Sleep 1	34	21.61	8.88
Pleasure 1	34	40.29	10.16
Displeasure 1	34	26.67	12.54
Arousal 1	34	38.44	13.82
Sleepiness 1	34	24.11	9.06
Dominance 1	34	37.97	9.15
Submissiveness 1	34	28.61	6.84
Depression 1	34	30.05	14.07
Current Cognitions Questionnaire 1	34	110.32	19.11
Autonomic Perception Questionnaire 1	34	33.20	32.33
General Activation 2	34	45.05	18.13
High Activation 2	34	27.17	10.43
General Deactivation 2	34	51.58	11.12
Deactivation-Sleep 2	34	21.94	8.90
Pleasure 2	34	38.97	9.46
Displeasure 2	34	26.29	12.73
Arousal 2	34	37.85	15.30
Sleepiness 2	34	25.14	9.66
Dominance 2	34	36.32	8.46
Submissiveness 2	34	29.55	9.14
Depression 2	34	29.61	14.25
Current Cognitions Questionnaire 2	34	113.05	20.09
Autonomic Perception Questionnaire 2	34	39.20	37.75
General Activation 2 - General Activation 1	32	-2.75	9.73
High Activation 2 - High Activation 1	32	-.09	7.41
General Deactivation 2 - General Deactivation 1	33	-.60	10.37
Deactivation-Sleep 2 - Deactivation-Sleep 1	28	.39	4.28
Pleasure 2 - Pleasure 1	29	-1.55	7.58
Displeasure 2 - Displeasure 1	30	-.43	6.43
Arousal 2 - Arousal 1	33	-.60	7.79
Sleepiness 2 - Sleepiness 1	28	1.25	5.06
Dominance 2 - Dominance 1	29	-1.93	5.74
Submissiveness 2 - Submissiveness 1	30	1.06	6.71
Depression 2 - Depression 1	32	-.46	9.11
Current Cogn. Quest. 2 - Current Cogn. Quest. 1	34	2.73	15.29
Aut. Percept. Quest. 2 - Aut. Percept. Quest. 1	34	6.00	14.52

1 = Pre-Score

2 = Post-Score

Variable 2 - Variable 1 = Difference ("Change") Score

Table A-4

Means and Standard Deviations on All Variables--Group 2

Variable	N	Mean	Standard Deviation
General Activation 1	34	44.23	19.15
High Activation 1	34	24.55	12.39
General Deactivation 1	34	54.26	12.32
Deactivation-Sleep 1	34	23.11	10.23
Pleasure 1	34	39.14	15.03
Displeasure 1	34	26.14	16.67
Arousal 1	34	32.41	10.12
Sleepiness 1	34	23.64	10.50
Dominance 1	34	36.00	8.37
Submissiveness 1	33	28.33	9.59
Depression 1	34	31.88	19.79
Current Cognitions Questionnaire 1	34	107.82	20.98
Autonomic Perception Questionnaire 1	34	17.20	12.66
General Activation 2	34	46.02	20.95
High Activation 2	34	23.08	11.44
General Deactivation 2	34	52.70	14.59
Deactivation-Sleep 2	34	21.76	10.58
Pleasure 2	34	39.50	14.60
Displeasure 2	34	25.02	15.98
Arousal 2	34	33.52	11.10
Sleepiness 2	34	22.32	10.76
Dominance 2	34	35.50	10.79
Submissiveness 2	33	26.72	9.64
Depression 2	34	29.38	18.79
Current Cognitions Questionnaire 2	34	108.38	21.49
Autonomic Perception Questionnaire 2	34	26.02	18.42
General Activation 2 - General Activation 1	32	1.90	8.68
High Activation 2 - High Activation 1	27	-1.85	8.72
General Deactivation 2 - General Deactivation 1	33	-1.60	8.20
Deactivation-Sleep 2 - Deactivation-Sleep 1	31	-1.48	5.90
Pleasure 2 - Pleasure 1	30	.40	5.04
Displeasure 2 - Displeasure 1	23	-1.65	6.03
Arousal 2 - Arousal 1	32	1.18	8.93
Sleepiness 2 - Sleepiness 1	27	-1.66	6.52
Dominance 2 - Dominance 1	31	-.54	6.77
Submissiveness 2 - Submissiveness 1	26	-2.19	8.74
Depression 2 - Depression 1	30	-2.83	6.05
Current Cogn. Quest. 2 - Current Cogn. Quest. 1	34	.55	12.94
Aut. Percept. Quest. 2 - Aut. Percept. Quest. 1	34	8.82	16.53

1 = Pre-Score

2 = Post-Score

Variable 2 - Variable 1 = Difference ("Change") Score

1

Table A-5

Means and Standard Deviations on All Variables--Group 3

Variable	N	Mean	Standard Deviation
General Activation 1	34	48.58	17.54
High Activation 1	34	25.58	9.09
General Deactivation 1	33	53.87	10.31
Deactivation-Sleep 1	34	23.32	9.01
Pleasure 1	34	41.97	12.19
Displeasure 1	32	24.21	10.59
Arousal 1	33	36.63	10.27
Sleepiness 1	33	23.18	8.26
Dominance 1	34	37.05	9.41
Submissiveness 1	34	30.55	7.95
Depression 1	34	29.47	13.85
Current Cognitions Questionnaire 1	34	116.14	19.83
Autonomic Perception Questionnaire 1	34	25.70	19.49
General Activation 2	34	49.79	16.79
High Activation 2	34	29.02	11.98
General Deactivation 2	34	51.05	12.02
Deactivation-Sleep 2	34	20.26	8.15
Pleasure 2	34	39.44	10.46
Displeasure 2	34	25.38	12.85
Arousal 2	34	38.88	11.83
Sleepiness 2	34	23.00	9.51
Dominance 2	34	34.05	10.18
Submissiveness 2	34	33.61	9.76
Depression 2	34	28.73	15.15
Current Cognitions Questionnaire 2	34	116.91	19.36
Autonomic Perception Questionnaire 2	34	39.02	33.18
General Activation 2 - General Activation 1	34	1.20	11.36
High Activation 2 - High Activation 1	32	3.65	8.53
General Deactivation 2 - General Deactivation 1	31	-3.64	12.92
Deactivation-Sleep 2 - Deactivation-Sleep 1	31	-3.35	6.42
Pleasure 2 - Pleasure 1	31	-2.77	9.63
Displeasure 2 - Displeasure 1	30	1.23	7.52
Arousal 2 - Arousal 1	30	2.33	10.09
Sleepiness 2 - Sleepiness 1	31	-.48	8.45
Dominance 2 - Dominance 1	33	-3.09	7.36
Submissiveness 2 - Submissiveness 1	30	3.46	7.78
Depression 2 - Depression 1	32	-.78	9.52
Current Cogn. Quest. 2 - Current Cogn. Quest. 1	34	.76	15.89
Aut. Percept. Quest. 2 - Aut. Percept. Quest. 1	34	13.32	25.39

1 = Pre-Score

2 = Post-Score

Variable 2 - Variable 1 = Difference ("Change") Score

Table A-6

Means and Standard Deviations on All Variables--Group 4

Variable	N	Mean	Standard Deviation
General Activation 1	32	48.96	20.21
High Activation 1	32	26.87	12.00
General Deactivation 1	32	58.25	15.27
Deactivation-Sleep 1	32	22.09	11.88
Pleasure 1	32	42.00	12.15
Displeasure 1	32	26.21	14.34
Arousal 1	32	36.37	12.15
Sleepiness 1	32	25.09	11.14
Dominance 1	32	36.43	10.51
Submissiveness 1	32	29.03	8.85
Depression 1	31	32.00	17.63
Current Cognitions Questionnaire 1	32	110.25	21.32
Autonomic Perception Questionnaire 1	32	20.40	20.14
General Activation 2	31	43.77	21.31
High Activation 2	31	24.80	13.87
General Deactivation 2	32	56.68	15.29
Deactivation-Sleep 2	32	22.75	11.27
Pleasure 2	31	38.87	11.12
Displeasure 2	31	27.03	16.48
Arousal 2	31	36.16	15.03
Sleepiness 2	32	26.78	10.84
Dominance 2	32	35.06	11.95
Submissiveness 2	31	29.58	10.95
Depression 2	32	29.40	17.16
Current Cognitions Questionnaire 2	32	113.30	23.55
Autonomic Perception Questionnaire 2	32	18.37	20.44
General Activation 2 - General Activation 1	28	-6.53	7.67
High Activation 2 - High Activation 1	30	-2.30	9.85
General Deactivation 2 - General Deactivation 1	29	-1.72	13.57
Deactivation-Sleep 2 - Deactivation-Sleep 1	25	.84	5.39
Pleasure 2 - Pleasure 1	27	-3.74	6.63
Displeasure 2 - Displeasure 1	30	.83	9.56
Arousal 2 - Arousal 1	29	-.41	9.38
Sleepiness 2 - Sleepiness 1	32	1.68	6.37
Dominance 2 - Dominance 1	29	-1.51	5.04
Submissiveness 2 - Submissiveness 1	26	.38	8.85
Depression 2 - Depression 1	27	-2.85	9.87
Current Cogn. Quest. 2 - Current Cogn. Quest. 1	32	3.06	14.61
Aut. Percept. Quest. 2 - Aut. Percept. Quest. 1	32	-2.03	10.79

1 = Pre-Score

2 = Post-Score

Variable 2 - Variable 1 = Difference ("Change") Score

Table A-7

Means and Standard Deviations on All Variables--Group 5

Variable	N	Mean	Standard Deviation
General Activation 1	32	44.34	17.51
High Activation 1	31	25.35	8.90
General Deactivation 1	32	60.46	10.56
Deactivation-Sleep 1	32	27.37	7.76
Pleasure 1	32	40.09	13.25
Displeasure 1	32	26.59	14.93
Arousal 1	31	34.90	11.10
Sleepiness 1	32	26.37	8.05
Dominance 1	31	36.38	8.86
Submissiveness 1	31	31.35	9.63
Depression 1	30	34.16	17.91
Current Cognitions Questionnaire 1	32	116.84	13.11
Autonomic Perception Questionnaire 1	32	20.50	13.68
General Activation 2	32	41.15	14.32
High Activation 2	32	27.65	9.91
General Deactivation 2	32	55.09	8.16
Deactivation-Sleep 2	32	25.62	7.24
Pleasure 2	32	37.62	10.92
Displeasure 2	32	27.96	12.12
Arousal 2	32	34.43	10.20
Sleepiness 2	32	26.93	9.66
Dominance 2	32	34.21	9.34
Submissiveness 2	32	32.34	9.10
Depression 2	32	34.90	14.82
Current Cognitions Questionnaire 2	32	118.46	16.12
Autonomic Perception Questionnaire 2	32	28.21	24.32
General Activation 2 - General Activation 1	31	-3.29	10.79
High Activation 2 - High Activation 1	27	2.37	11.84
General Deactivation 2 - General Deactivation 1	31	-5.54	8.47
Deactivation-Sleep 2 - Deactivation-Sleep 1	29	-1.93	6.72
Pleasure 2 - Pleasure 1	32	-2.46	8.19
Displeasure 2 - Displeasure 1	27	1.62	11.96
Arousal 2 - Arousal 1	30	-.53	8.32
Sleepiness 2 - Sleepiness 1	27	.66	8.86
Dominance 2 - Dominance 1	27	-3.03	6.78
Submissiveness 2 - Submissiveness 1	26	.69	6.72
Depression 2 - Depression 1	27	1.03	11.11
Current Cogn. Quest. 2 - Current Cogn. Quest. 1	32	1.62	13.61
Aut. Percept. Quest. 2 - Aut. Percept. Quest. 1	32	7.71	22.47

1 = Pre-Score

2 = Post-Score

Variable 2 - Variable 1 = Difference ("Change") Score

Table A-8

Results of Analysis of Variance for All Dependent Variables
(Using "Change Scores")

General Activation

Group	1	2	3	4	5
n	32	32	34	28	31
Mean	-2.7500	1.9063	1.2059	-6.5357	-3.2903
Standard Deviation	9.7350	8.6821	11.3666	7.6714	10.7959
F(4,152) = 3.824, p < .01 *					

High Activation

Group	1	2	3	4	5
n	32	27	32	30	27
Mean	-.0938	-1.8599	3.6563	-2.3000	2.3704
Standard Deviation	7.4156	8.7209	8.5369	9.8548	11.8489
F(4,143) = 2.327, p = .0592					

General Deactivation

Group	1	2	3	4	5
n	33	33	31	29	31
Mean	-.6061	-1.6061	-3.6452	-1.7241	-5.5484
Standard Deviation	10.3711	8.2004	12.9294	13.5775	8.4768
F(4,152) = 1.037, n.s.					

Deactivation-Sleep

Group	1	2	3	4	5
n	28	31	31	25	29
Mean	.3929	-1.4839	-3.3548	.8400	-1.9310
Standard Deviation	4.2804	5.9041	6.4216	5.3981	6.7238
F(4,139) = 2.469, p = .0475 * (borderline)					

Pleasure

Group	1	2	3	4	5
n	29	30	31	27	32
Mean	-1.5517	.4000	-2.7742	-3.7407	-2.4688
Standard Deviation	7.5809	5.0419	9.6323	6.6309	8.1951
F(4,144) = 1.233, n.s.					

Displeasure

Group	1	2	3	4	5
n	30	23	30	30	27
Mean	-.4333	-1.6522	1.2333	.8333	1.6296
Standard Deviation	6.4363	6.0348	7.5232	9.5632	11.9620
F(4,135) = .623, n.s.					

(table continues)

Table A-8 (cont'd.).

Arousal

Group	1	2	3	4	5
n	33	32	30	29	30
Mean	-.6061	1.1875	2.3333	-.4138	-.5333
Standard Deviation	7.7900	8.9386	10.0938	9.3828	8.3242
F(4,149) = .882, n.s.					

Sleepiness

Group	1	2	3	4	5
n	28	27	31	32	27
Mean	1.2500	-1.6667	-.4839	1.6875	.8867
Standard Deviation	5.0671	6.5280	8.4572	6.6776	8.8622
F(1,140) = 1.033, n.s.					

Dominance

Group	1	2	3	4	5
n	29	31	33	29	27
Mean	-1.9310	-.5484	-3.0909	-1.5172	-3.0370
Standard Deviation	5.7441	6.7766	7.3628	5.0471	6.7851
F(4,144) = .850, n.s.					

Submissiveness

Group	1	2	3	4	5
n	30	26	30	26	26
Mean	1.0667	-2.1923	3.4667	.3846	.6923
Standard Deviation	6.7104	8.7499	7.7822	8.8547	6.7217
F(4,133) = 1.867, n.s.					

Depression

Group	1	2	3	4	5
n	32	30	32	27	27
Mean	-.4866	-2.8333	-.7813	-2.8519	1.0370
Standard Deviation	9.1192	6.0577	9.5233	9.8111	11.1199
F(4,143) = .913, n.s.					

Current Cognitions Questionnaire

Group	1	2	3	4	5
n	34	34	34	32	32
Mean	2.7353	.5588	.7647	3.0625	1.6250
Standard Deviation	15.2997	12.9409	15.8956	14.6132	13.6115
F(4,161) = .201, n.s.					

Autonomic Perception Questionnaire

Group	1	2	3	4	5
n	34	34	34	32	32
Mean	6.0000	8.8235	13.3235	-2.0313	7.7188
Standard Deviation	14.5269	16.5300	25.3923	10.7987	22.4790
F(4,161) = 2.940, p < .05*					

*Denotes statistical significance

**All statistical analyses conducted with missing values.

n.s. = not significant

Table A-9

Summary of Results (t-tests) Median Split--Social Anxiety
(Using "Change Scores")

General Activation

Group*	HIGH	LOW
n**	16	16
Mean	3.0000	.8125
Standard deviation	6.512	10.528
t(30) = .71, n.s.		

High Activation

Group	HIGH	LOW
n	13	14
Mean	.6154	-4.1429
Standard deviation	6.959	9.781
t(25) = 1.45, n.s.		

General Deactivation

Group	HIGH	LOW
n	16	17
Mean	-2.6875	-.5882
Standard deviation	8.965	7.542
t(31) = -.73, n.s.		

Deactivation-Sleep

Group	HIGH	LOW
n	16	15
Mean	-.8125	-2.2000
Standard deviation	5.913	6.014
t(29) = .65, n.s.		

Pleasure

Group	HIGH	LOW
n	14	16
Mean	.3571	.4375
Standard deviation	5.799	4.472
t(28) = -.04, n.s.		

(table continues)

Table A-9 (cont'd.).

Displeasure

Group	HIGH	LOW
n	11	12
Mean	.7273	-3.8333
Standard deviation	5.798	5.606
t(21) = 1.92, n.s.		

Arousal

Group	HIGH	LOW
n	16	16
Mean	.8750	1.5000
Standard deviation	4.965	11.843
t(30) = -.19, n.s.		

Sleepiness

Group	HIGH	LOW
n	14	13
Mean	-1.4286	-1.9231
Standard deviation	6.969	6.291
t(25) = .19, n.s.		

Dominance

Group	HIGH	LOW
n	15	16
Mean	-.3333	-.7500
Standard deviation	8.641	4.698
t(29) = .17, n.s.		

Submissiveness

Group	HIGH	LOW
n	12	14
Mean	-.0833	-4.0000
Standard deviation	9.346	8.105
t(24) = 1.14, n.s.		

(table continues)

Table A-9 (cont'd.).

Depression

Group	HIGH	LOW
n	16	14
Mean	-3.5625	-2.0000
Standard deviation	5.633	6.622
t(28) = -.70, n.s.		

Current Cognitions Questionnaire

Group	HIGH	LOW
n	17	17
Mean	3.2941	-2.1765
Standard deviation	14.075	11.463
t(32) = 1.24, n.s.		

Autonomic Perception Questionnaire

Group	HIGH	LOW
n	17	17
Mean	10.3529	7.2941
Standard deviation	19.624	13.171
t(32) = .53, n.s.		

*"HIGH" = subjects in top half of distribution; "LOW" = subjects in bottom half of distribution.

**Subjects from Group 2, only

n.s. = not significant

Table A-10

Summary of Results (t-tests) Median Split--Body/Self Image
(Using "Change Scores")

General Activation

Group*	HIGH	LOW
n**	31	32
Mean	1.8710	-2.1875
Standard deviation	11.331	9.680
t(61) = 1.53, n.s.		

High Activation

Group	HIGH	LOW
n	30	31
Mean	1.1000	2.2258
Standard deviation	9.256	7.455
t(59) = -.52, n.s.		

General Deactivation

Group	HIGH	LOW
n	32	29
Mean	-1.8438	-2.5172
Standard deviation	10.759	13.187
t(59) = -22, n.s.		

Deactivation-Sleep

Group	HIGH	LOW
n	27	29
Mean	-1.8519	-1.6207
Standard deviation	5.112	6.466
t(54) = -.15, n.s.		

Pleasure

Group	HIGH	LOW
n	30	27
Mean	-1.1667	-4.0000
Standard deviation	8.910	8.412
t(55) = 1.23, n.s.		

(table continues)

Table A-10 (cont'd.).

Displeasure

Group	HIGH	LOW
n	29	28
Mean	.0000	1.2500
Standard deviation	7.704	6.108
t(55) = -.68, n.s.		

Arousal

Group	HIGH	LOW
n	30	30
Mean	1.6000	.7333
Standard deviation	8.496	9.670
t(58) = .37, n.s.		

Sleepiness

Group	HIGH	LOW
n	27	29
Mean	-.2963	1.1034
Standard deviation	7.849	6.667
t(54) = -.72, n.s.		

Dominance

Group	HIGH	LOW
n	29	30
Mean	-2.0345	-2.7667
Standard deviation	6.472	6.699
t(57) = .43, n.s.		

Submissiveness

Group	HIGH	LOW
n	29	28
Mean	1.0690	3.6071
Standard deviation	8.093	6.618
t(24) = 1.14, n.s.		

(table continues)

Table A-10 (cont'd.).

Depression

Group	HIGH	LOW
n	30	31
Mean	-1.3667	.3226
Standard deviation	8.628	9.951
t(59) = -.71, n.s.		

Current Cognitions Questionnaire

Group	HIGH	LOW
n	33	32
Mean	1.6667	1.2500
Standard deviation	15.186	16.463
t(63) = .11, n.s.		

Autonomic Perception Questionnaire

Group	HIGH	LOW
n	33	32
Mean	6.7273	13.5313
Standard deviation	13.662	26.676
t(63) = -1.30, n.s.		

*"HIGH" = subjects in top half of distribution; "LOW" = subjects in bottom half of distribution.

**Subjects in Groups 1 and 3

n.s. = not significant

Table A-11

Summary of Results (t-tests) Median Split--Psychopathology
(Using "Change Scores")

General Activation

Group*	HIGH	LOW
n**	65	61
Mean	-.8462	-1.8689
Standard deviation	9.194	10.848
t(124) = .57, n.s.		

High Activation

Group	HIGH	LOW
n	61	60
Mean	-.7377	.6667
Standard deviation	8.352	9.380
t(119) = -.87, n.s.		

General Deactivation

Group	HIGH	LOW
n	65	61
Mean	-2.2308	-1.4918
Standard deviation	10.653	12.002
t(124) = -.37, n.s.		

Deactivation-Sleep

Group	HIGH	LOW
n	58	57
Mean	-1.2069	-.8421
Standard deviation	5.115	6.408
t(113) = -.34, n.s.		

Pleasure

Group	HIGH	LOW
n	65	52
Mean	-1.3231	-2.5769
Standard deviation	6.922	8.211
t(115) = .90, n.s.		

(table continues)

Table A-11 (cont'd.).

Displeasure

Group	HIGH	LOW
n	57	56
Mean	-.4561	.6607
Standard deviation	6.982	8.163
t(111) = -.78, n.s.		

Arousal

Group	HIGH	LOW
n	61	63
Mean	.4918	.7302
Standard deviation	8.076	9.921
t(122) = -.15, n.s.		

Sleepiness

Group	HIGH	LOW
n	58	60
Mean	-.3793	.8500
Standard deviation	7.262	6.335
t(116) = -.98, n.s.		

Dominance

Group	HIGH	LOW
n	61	61
Mean	-1.5738	-2.0164
Standard deviation	6.404	6.310
t(120) = .38, n.s.		

Submissiveness

Group	HIGH	LOW
n	58	54
Mean	-.3103	1.9815
Standard deviation	8.331	7.878
t(110) = -1.49, n.s.		

(table continues)

Table A-11 (cont'd.).

Depression

Group	HIGH	LOW
n	59	62
Mean	-1.9661	-1.3871
Standard deviation	8.115	9.327
t(119) = -.36, n.s.		

Current Cognitions Questionnaire

Group	HIGH	LOW
n	69	65
Mean	.3478	1.7385
Standard deviation	17.073	17.393
t(132) = -.47, n.s.		

Autonomic Perception Questionnaire

Group	HIGH	LOW
n	69	65
Mean	3.7246	9.7692
Standard deviation	10.015	24.022
t(132) = -1.92, p = .057*** (borderline)		

*"HIGH" = subjects in top half of distribution; "LOW" = subjects in bottom half of distribution.

**Subjects in Groups 1-4

***Denotes statistical significance

n.s. = not significant

Table A-12

Results of Analysis of Variance and Contrasts for "Events"
(Using "Change Scores")

General Activation

Group	1	2	3	4	5
n	5	10	13	10	8
Mean	.6000	-1.6000	-1.3846	-6.6000	-9.8750
Standard Deviation	14.2934	9.8342	11.5653	4.8580	14.6720

$F(4,41) = 1.216$, n.s.
 No contrasts significant

High Activation

Group	1	2	3	4	5
n	5	8	13	10	7
Mean	-3.2000	-.7500	5.9231	-6.8000	8.1429
Standard Deviation	8.6139	7.2061	7.9944	6.9730	11.7392

$F(4,38) = 4.917$, $p < .05^*$
 Contrasts: Groups 1-4 versus 5: $t(38) = 2.6614$, $p < .05^*$
 Group 4 versus 5 : $t(38) = -3.6028$, $p < .01^*$

General Deactivation

Group	1	2	3	4	5
n	4	10	13	9	8
Mean	8.0000	-3.4000	-8.9231	-1.6667	-11.1250
Standard Deviation	5.7735	8.8217	10.3639	12.4499	4.6733

$F(4,39) = 3.645$, $p < .05^*$
 Contrasts: Groups 1-4 versus 5: $t(39) = -2.5582$, $p < .05^*$
 Group 1 versus 3 : $t(39) = 3.1323$, $p < .01^*$
 Group 1 versus 5 : $t(39) = 3.3052$, $p < .01^*$
 Groups 1&3 versus 5: $t(39) = 2.4820$, $p < .05^*$

Deactivation-Sleep

Group	1	2	3	4	5
n	4	10	12	9	8
Mean	1.7500	-.3000	-.6667	-1.7778	-1.8750
Standard Deviation	7.1536	5.4171	5.8361	5.9535	9.2957

$F(4,38) = .263$, n.s.
 No contrasts significant

Pleasure

Group	1	2	3	4	5
n	4	8	13	7	8
Mean	1.5000	-2.3750	-6.7692	-1.8571	-9.2500
Standard Deviation	5.4467	4.0686	8.8521	7.1978	7.0051

$F(4,35) = 2.309$, n.s.
 Contrasts: Groups 1-4 versus 5: $t(35) = -2.3808$, $p < .05^*$
 Group 1 versus 5 : $t(35) = 2.4482$, $p < .05^*$

(table continues)

Table A-12 (cont'd.).

Displeasure

Group	1	2	3	4	5
n	4	5	13	9	8
Mean	3.0000	.4000	-.5385	3.2222	9.0000
Standard Deviation	3.1623	3.9749	5.8682	9.2165	10.2400
F(3,34) = 2.138, n.s.					
Contrasts: Groups 1-4 versus 5: $t(34) = 2.4511, p < .05^*$					

Arousal

Group	1	2	3	4	5
n	5	10	11	8	7
Mean	-.4000	.8000	2.0909	3.2500	-6.0000
Standard Deviation	10.6911	5.4934	11.5711	8.4304	13.3167
F(3,36) = .961, n.s.					
No contrasts significant					

Sleepiness

Group	1	2	3	4	5
n	3	9	11	10	7
Mean	8.6667	0.0000	2.3636	2.3000	1.0000
Standard Deviation	3.0551	5.3852	6.8742	8.4202	11.6046
F(4,35) = .720, n.s.					
No contrasts significant					

Dominance

Group	1	2	3	4	5
n	5	11	13	10	7
Mean	4.0000	-.2727	-4.7692	-1.0000	-6.2857
Standard Deviation	4.5277	7.7083	8.4474	6.6332	8.7314
F(4,41) = 1.933, n.s.					
No contrasts significant					

Submissiveness

Group	1	2	3	4	5
n	4	9	12	9	8
Mean	-.7500	-4.0000	4.4167	1.2222	1.8750
Standard Deviation	3.8622	8.1854	9.6997	9.6278	8.7413
F(4,37) = 1.228, n.s.					
No contrasts significant					

Depression

Group	1	2	3	4	5
n	5	9	13	9	8
Mean	1.0000	-2.2222	1.0000	-1.7778	2.1250
Standard Deviation	5.0695	4.0859	8.8223	8.9551	12.2642
F(4,39) = .470, n.s.					
No contrasts significant					

(table continues)

Table A-12 (cont'd.).

Current Cognitions Questionnaire

Group	1	2	3	4	5
n	5	11	13	10	8
Mean	8.8000	2.4545	3.3846	6.3000	1.7500
Standard Deviation	7.7266	8.7563	11.7299	16.9184	14.7721
F(4,42) = .372, n.s.					
No contrasts significant					

Autonomic Perception Questionnaire

Group	1	2	3	4	5
n	5	11	13	10	8
Mean	1.0000	3.3636	13.4615	-1.2000	17.7500
Standard Deviation	8.8443	11.2541	16.9588	12.5415	34.4456
F(4,42) = 1.749, n.s.					
Contrasts: Groups 4 versus Group 5: $t(42) = -2.1312, p < .05^*$					

*Denotes statistical significance

n.s. = not significant

Table A-13

Results of Analyses of Covariance*

Measure	Result
General Activation	
Group (main effect)	$F(4,155) = 3.81, p < .01^{**}$
Group x pre-score interaction	$F(4,155) = 3.07, p < .05^{**}$
High Activation	
Group (main effect)	$F(4,153) = 2.50, p < .05^{**}$
Group x pre-score interaction	$F(4,153) = 1.80, n.s.$
General Deactivation	
Group (main effect)	$F(4,155) = .70, n.s.$
Group x pre-score interaction	$F(4,155) = 2.44, p < .05^{**}$
Deactivation-Sleep	
Group (main effect)	$F(4,156) = 2.38, n.s.$
Group x pre-score interaction	$F(4,156) = 1.88, n.s.$
Pleasure	
Group (main effect)	$F(4,155) = 1.06, n.s.$
Group x pre-score interaction	$F(4,155) = 2.62, p < .05^{**}$
Displeasure	
Group (main effect)	$F(4,153) = .63, n.s.$
Group x pre-score interaction	$F(4,153) = 3.53, p < .01^{**}$
Arousal	
Group (main effect)	$F(4,153) = .61, n.s.$
Group x pre-score interaction	$F(4,153) = 1.24, n.s.$
Sleepiness	
Group (main effect)	$F(4,155) = 1.38, n.s.$
Group x pre-score interaction	$F(4,155) = .69, n.s.$
Dominance	
Group (main effect)	$F(4,155) = .89, n.s.$
Group x pre-score interaction	$F(4,155) = 1.67, n.s.$
Submissiveness	
Group (main effect)	$F(4,152) = 2.46, p < .05^{**}$
Group x pre-score interaction	$F(4,152) = .66, n.s.$

(table continues)

1

Table A-13 (cont'd.).

Measure	Result
Depression	
Group (main effect)	$F(4,153) = 1.08$, n.s.
Group x pre-score interaction	$F(4,153) = .98$, n.s.
Current Cognitions Questionnaire	
Group (main effect)	$F(4,155) = .328$, n.s.
Group x pre-score interaction	$F(4,155) = .45$, n.s.
Autonomic Perception Questionnaire	
Group (main effect)	$F(4,156) = 2.923$, $p < .05^{**}$
Group x pre-score interaction	$F(4,156) = 1.01$, n.s.

*Investigating main effects and interaction effects

**Denotes statistical significance

n.s. = not significant

Table A-14

Summary of Significant Results Involving the Autonomic
Perception Questionnaire

(1) Analysis of Variance	$F(4,161) = 2.94, p < .05$
(2) Contrast: Groups 1+4 versus Groups 2, 3, and 5 (Hypothesis 1)	$t(161) = -2.6809, p < .01$
(3) Contrast: Groups 1, 2, and 3 versus Group 4 (Hypothesis 4)	$t(161) = 3.006, p < .01$
(4) T-test: Groups 1-4 "High" Range of Psychopathology versus "Low" Range	$t(132) = -1.92, p = .057$ (borderline)
(5) Analysis of Covariance (Group Effect)	$F(4,160) = 2.93, p < .05$
(6) Contrast: Group 4 versus Group 5; "Events"	$t(42) = -2.1312, p < .05$

Table A-15

Division of Subjects by Direction of Change on APQ:Numbers and Mean Score by Group**GENERAL ACTIVATION (whole sample)**

Group*	1	2	3	4	5
n	64	34	33	0	31
Mean	-4.20	1.79	1.30	0.00	-3.16

Proportion:	90 of 162 = Group 1**				
	No change or decreasing: 72 of 162 = Group 0**				

Group	1	2	3	4	5
Direction of change/Group 0					
n	39	9	11	0	13
Mean	-3.74	-2.33	-3.91	0.00	-1.69
Direction of change/Group 1					
n	25	25	22	0	18
Mean	-4.92	3.28	3.91	0.00	-4.22

HIGH ACTIVATION (whole sample)

Group	1	2	3	4	5
n	64	34	33	0	31
Mean	-1.13	-1.47	3.18	0.00	2.06

Proportion: Increasing:	90 of 162 = Group 1				
No change or decreasing:	72 of 162 = Group 0				

Group	1	2	3	4	5
Direction of change Group 0					
n	39	9	11	0	13
Mean	-2.41	-6.33	-1.55	0.00	-3.08
Direction of change Group 1					
n	25	25	22	0	18
Mean	.88	.28	5.55	0.00	5.78

DEACTIVATION-SLEEP (whole sample)

Group	1	2	3	4	5
n	64	34	33	0	31
Mean	.41	-1.35	-3.12	0.00	-2.03

Proportion:	90 of 162 = Group 1				
	No change or decreasing: 72 of 162 = Group 0				

Group	1	2	3	4	5
Direction of change Group 0					
n	39	9	11	0	13
Mean	-.49	-1.11	-2.00	0.00	-2.69
Direction of change Group 1					
n	25	25	22	0	18
Mean	.28	-1.44	-3.68	0.00	-1.56

(table continues)

Table A-15 (cont'd.).

SLEEPINESS (whole sample)

Group	1	2	3	4	5
n	64	34	33	0	31
Mean	1.34	-1.32	-.59	0.00	.90

Proportion:	91 of 162 = Group 1				
Increasing:	No change or decreasing: 71 of 162 = Group 0				

Group	1	2	3	4	5
Direction of change Group 0					
n	39	9	11	0	12
Mean	1.03	.67	3.09	0.00	-2.33
Direction of change Group 1					
n	26	25	21	0	19
Mean	1.81	-2.04	-2.52	0.00	2.95

GENERAL DEACTIVATION (whole sample)

Group	1	2	3	4	5
n	64	34	33	0	31
Mean	- 1.16	-1.56	-3.42	0.00	-5.52

Proportion:	90 of 162 = Group 1				
	No change or decreasing: 72 of 162 = Group 0				

Group	1	2	3	4	5
Direction of change Group 0					
n	39	9	11	0	13
Mean	-1.23	-2.89	-1.00	0.00	-1.69
Direction of change Group 1					
n	25	25	22	0	18
Mean	-1.04	-1.08	-4.64	0.00	-8.28

PLEASURE (whole sample)

Group	1	2	3	4	5
n	65	34	32	0	31
Mean	-2.25	.35	-2.69	0.00	-2.65

Proportion:	91 of 162 = Group 1				
Increasing:	71 of 162 = Group 0				
No change or decreasing:					

Group	1	2	3	4	5
Direction of change Group 0					
n	39	9	11	0	12
Mean	-1.92	-1.67	.09	0.00	-.50
Direction of change Group 1					
n	26	25	21	0	19
Mean	-2.73	1.08	-4.14	0.00	-4.00

(table continues)

Table A-15 (cont'd.).

DISPLEASURE (whole sample)

Group	1	2	3	4	5
n	65	34	32	0	31
Mean	.18	-1.12	1.16	0.00	1.48

Proportion:	91 of 162 = Group 1				
	No change or decreasing: 71 of 162 = Group 0				

Group	1	2	3	4	5
Direction of change Group 0					
n	39	9	11	0	12
Mean	-.62	-.33	-2.45	0.00	-.92
Direction of change Group 1					
n	26	25	21	0	19
Mean	1.38	-1.40	3.05	0.00	3.00

AROUSAL (whole sample)

Group	1	2	3	4	5
n	65	34	32	0	31
Mean	-.49	1.12	2.22	0.00	-.52

Proportion:	91 of 162 = Group 1				
Increasing:	71 of 162 = Group 0				
No change or decreasing:					

Group	1	2	3	4	5
Direction of change Group 0					
n	39	9	11	0	12
Mean	-.49	-1.44	.55	0.00	0.00
Direction of change Group 1					
n	26	25	21	0	19
Mean	-.50	2.04	3.10	0.00	-.84

DOMINANCE (whole sample)

Group	1	2	3	4	5
n	63	32	34	0	28
Mean	-1.68	-.34	-3.00	0.00	-2.75

Proportion:	86 of 157 = Group 1				
	No change or decreasing: 71 of 157 = Group 0				

Group	1	2	3	4	5
Direction of change Group 0					
n	37	9	12	0	13
Mean	-1.62	-6.22	-2.83	0.00	-4.31
Direction of change Group 1					
n	26	23	22	0	15
Mean	-1.77	1.96	-3.09	0.00	-1.40

(table continues)

Table A-15 (cont'd.).

SUBMISSIVENESS (whole sample)

Group	1	2	3	4	5
n	63	32	34	0	26
Mean	.63	-1.78	3.06	0.00	.93

Proportion:	86 of 157 = Group 1				
Increasing:	71 of 157 = Group 0				
No change or decreasing:					

Group	1	2	3	4	5
Direction of change Group 0					
n	37	9	12	0	13
Mean	-.35	-6.67	-2.83	0.00	1.15
Direction of change Group 1					
n	26	23	22	0	15
Mean	2.04	.13	3.18	0.00	.73

DEPRESSION (whole sample)

Group	1	2	3	4	5
n	63	32	34	0	28
Mean	-1.60	-2.13	-.74	0.00	1.29

Proportion:	86 of 157 = Group 1				
	No change or decreasing: 71 of 157 = Group 0				

Group	1	2	3	4	5
Direction of change Group 0					
n	37	9	12	0	13
Mean	-3.59	-1.67	-4.08	0.00	-.85
Direction of change Group 1					
n	26	23	22	0	15
Mean	1.23	2.30	1.09	0.00	3.13

CURRENT COGNITIONS QUESTIONNAIRE (whole sample)

Group	1	2	3	4	5
n	63	32	34	0	28
Mean	3.38	1.50	.76	0.00	3.00

Proportion:	86 of 157 = Group 1				
Increasing:	71 of 157 = Group 0				
No change or decreasing:					

Group	1	2	3	4	5
Direction of change Group 0					
n	37	9	12	0	13
Mean	-.14	-3.11	-4.75	0.00	4.08
Direction of change Group 1					
n	26	23	22	0	15
Mean	8.38	3.30	3.77	0.00	2.07

*Groups 1 and 4 combined

**Group 1 = APQ increase; Group 0 = no change or APQ decrease

Table A-16

Summary of Significant Results: Analysis of Variance Using
APQ Division of Subjects ("Change Scores")

Measure	Effect	Result
General Activation	Group (main effect)	$F(3,154) = 3.388, p < .05^*$
High Activation	APQ Change (main effect)	$F(1,154) = 17.154, p < .001^*$
Deactivation-Sleep	Group (main effect)	$F(3,154) = 3.102, p < .05^*$
Sleepiness	Group x APQ Change Interaction	$F(3,154) = 3.773, p < .05^*$
Dominance	Group x APQ Change Interaction	$F(3,145) = 3.349, p < .05^*$
Displeasure	Group (main effect)	$F(3,149) = 2.713, p = .047^*$ (border)
Depression	APQ Change (main effect)	$F(1,149) = 6.811, p < .01^*$
Current Cognitions Questionnaire	APQ Change (main effect)	$F(1,149) = 7.367, p < .01^*$

*Denotes statistical significance

Table A-17

Summary of Significant Results: T-tests Using APO Division
of Subjects ("Change Scores")

Groups(s)	Measure	Group	n	Mean	Std. Deviation
1+4	(1) Depression	INCREASE*	27	1.4074	8.846
		SAME OR DECREASE*	38	-3.4211	8.707
	t(63) = 2.19, p < .05**				
	(2) Current Cogn. Quest.	INCREASE	27	8.3704	17.104
SAME OR DECREASE		38	-.8158	12.036	
t(63) = 2.54, p < .05**					

1	(1) High Activation	INCREASE	16	2.8125	7.661
		SAME OR DECREASE	17	-2.8235	5.929
	t(31) = 2.37, p < .05**				

2	(1) High Activation	INCREASE	25	.2800	7.716
		SAME OR DECREASE	9	-6.3333	5.895
	t(32) = 2.33, p < .05**				
	(2) Dominance	INCREASE	25	1.5600	5.237
		SAME OR DECREASE	9	-6.2222	6.320
	t(32) = 3.62, p < .01**				
(3) Submissiveness	INCREASE	23	.1304	7.990	
	SAME OR DECREASE	9	-6.6660	5.408	
t(30) = 2.34, p < .05**					

3	(1) High Activation	INCREASE	22	5.5455	7.551
		SAME OR DECREASE	12	-.4167	8.586
	t(32) = 2.10, p < .05**				
	(2) Displeasure	INCREASE	21	3.0476	7.890
SAME OR DECREASE		11	-2.4545	4.251	
t(30) = 2.14, p < .05**					

(table continues)

Table A-17 (cont'd.).

Groups(s)	Measure	Group	n	Mean	Std. Deviation
4	(1) Displeasure	INCREASE	9	6.5556	10.101
		SAME OR DECREASE	22	-1.5455	8.216
	t(29) = 2.33, p < .05**				
	(2) Current Cogn. Quest.	INCREASE	10	14.1000	18.218
SAME OR DECREASE		21	-1.8571	9.635	
t(29) = -3.21, p < .005**					
.....					
5	(1) High Activation	INCREASE	18	5.7778	9.046
		SAME OR DECREASE	13	-3.0769	11.857
	t(29) = 2.36, p < .05**				
	(2) General Deactivation	INCREASE	19	-7.8947	5.301
		SAME OR DECREASE	13	-1.6923	10.735
	t(30) = -2.17, p < .05**				
	(3) Sleepiness	INCREASE	19	2.9474	8.403
SAME OR DECREASE		13	-2.9231	6.500	
t(30) = 2.12, p < .05**					

*"INCREASE" = APQ increase; "SAME OR DECREASE" = No change or APQ decrease

**Denotes statistical significance

Table A-18

Summary of Significant Results: T-tests Using APO Division
of Subjects ("Post Scores")

Groups(s)	Measure	Group	n	Mean	Std. Deviation
1+4	(1) Displeasure	INCREASE*	26	31.1154	12.401
		SAME OR DECREASE*	39	23.6667	15.222
	t(63) = 2.08, p < .05**				
	(2) Depression	INCREASE	27	35.2963	12.748
SAME OR DECREASE		39	25.5128	16.295	
t(64) = 2.61, p < .05**					

1	No significant results				

2	(1) Submissiveness	INCREASE	24	29.5417	8.325
		SAME OR DECREASE	9	19.2222	9.257
t(31) = 3.08,, p < .005**					

3	(1) General Deactivation	INCREASE	22	47.9091	11.747
		SAME OR DECREASE	12	56.8333	10.667
	t(32) = -2.18, p < .05**				
	(2) Submissiveness	INCREASE	22	36.0000	9.827
SAME OR DECREASE		12	29.2500	8.335	
t(32) = 2.01, p < .053** (border)					
	(3) Current Cogn. Quest.	INCREASE	22	122.4091	16.809
		SAME OR DECREASE	12	106.8333	20.364
t(32) = 2.40, p < .05**					

4	(1) Displeasure	INCREASE	9	40.4444	8.353
		SAME OR DECREASE	22	21.5455	15.913
t(29) = 3.36, p < .005**					
	(2) Depression	INCREASE	10	40.3000	13.728
		SAME OR DECREASE	22	24.4545	16.492
t(30) = 2.64, p < .05**					

*"INCREASE" = APQ increase; "SAME OR DECREASE" = No change or APQ decrease

**Denotes statistical significance

Table A-19

Summary of Significant Results: Analysis of Variance Using
APQ Division of Subjects ("Post Scores")

Group 4 versus Group 5/ANOVA = Group x APQ Change

(A) DISPLEASURE (post score)

	APQ Change 0*	APQ Change 1*
Group 4	n = 22 21.55	n = 9 40.44
Group 5	n = 13 28.31	n = 19 27.74
Effect		Result
(1) APQ Change		F(1,62) = 5.424, p < .05**
(2) Group x APQ change interaction		F(1,62) = 7.494, p < .01**

(B) DEPRESSION (post score)

	APQ Change 0	APQ Change 1
Group 4	n = 22 24.45	n = 9 40.56
Group 5	n = 13 32.92	n = 19 36.26
Effect		Result
(1) APQ Change		F(1,62) = 4.897, p < .05**

Group 1 and 4 combined/ANOVA = Group (1-5) x APQ Change

(A) HIGH ACTIVATION

	APQ Change 0	APQ Change 1
Group 1	n = 39 24.64	n = 26 28.15
Group 2	n = 9 18.00	n = 25 24.92
Group 3	n = 12 25.17	n = 22 31.14
Group 4	0	0
Group 5	n = 13 23.69	n = 19 30.37
Effect		Result
(1) APQ Change		F(1,164) = 8.026, p < .01**

(B) DISPLEASURE (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 23.67	n = 26 31.12
Group 2	n = 9 19.89	n = 25 26.88
Group 3	n = 12 23.25	n = 22 26.55
Group 4	0	0
Group 5	n = 13 28.31	n = 19 27.74
Effect		Result
(1) APQ Change		F(1,164) = 4.579, p < .05**

(table continues)

Table A-19 (cont'd.).

(C) SUBMISSIVENESS (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 28.41	n = 26 31.31
Group 2	n = 9 19.22	n = 24 29.54
Group 3	n = 12 29.25	n = 22 36.00
Group 4	0	0
Group 5	n = 13 31.00	n = 19 33.26
Effect		Result
(1) Group		F(3,163) = 3.858, p < .05**
(2) APQ Change		F(1,163) = 9.998, p < .01**

(D) DEPRESSION (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 25.51	n = 26 35.19
Group 2	n = 9 24.00	n = 24 30.38
Group 3	n = 12 25.75	n = 22 30.36
Group 4	0	0
Group 5	n = 13 32.92	n = 19 36.26
Effect		Result
(1) APQ Change		F(1,163) = 6.839, p < .01**

(E) CURRENT COGNITIONS QUESTIONNAIRE (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 111.54	n = 26 115.88
Group 2	n = 9 101.78	n = 24 110.50
Group 3	n = 12 106.83	n = 22 122.41
Group 4	0	0
Group 5	n = 13 116.31	n = 19 119.95
Effect		Result
(1) APQ Change		F(1,163) = 4.914, p < .05**

Group 1 (1+4) versus Group 2/ANOVA Group (1,2) x APQ Change**(A) DISPLEASURE**

	APQ Change 0	APQ Change 1
Group 1	n = 39 23.67	n = 26 31.12
Group 2	n = 9 19.89	n = 25 26.88
Effect		Result
(1) APQ Change		F(1,98) = 5.438, p < .05**

(table continues)

Table A-19 (cont'd.).

(B) SUBMISSIVENESS (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 28.41	n = 26 31.31
Group 2	n = 9 19.22	n = 24 29.54
Effect		Result
(1) Group		F(1,97) = 4.443, p < .05**
(2) APQ Change		F(1,97) = 6.340, p < .05**

(C) DEPRESSION (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 25.51	n = 26 35.19
Group 2	n = 9 24.00	n = 24 30.38
Effect		Result
(1) APQ Change		F(1,97) = 6.288, p < .05**

Group 1 (1+4) vs. Group 2 (2+3+5)/ANOVA = Group x APQ Change**(A) HIGH ACTIVATION (post score)**

	APQ Change 0	APQ Change 1
Group 1	n = 39 24.64	n = 26 28.15
Group 2	n = 34 22.71	n = 66 28.56
Effect		Result
(1) APQ Change		F(1,164) = 6.899, p < .01**

(B) DISPLEASURE (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 23.67	n = 26 31.12
Group 2	n = 34 24.29	n = 66 27.02
Effect		Result
(1) APQ Change		F(1,164) = 4.278, p < .05**

(C) SUBMISSIVENESS (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 28.41	n = 26 31.31
Group 2	n = 34 27.26	n = 65 32.82
Effect		Result
(1) APQ Change		F(1,163) = 7.977, p < .01**

(table continues)

Table A-19 (cont'd.).

(D) DEPRESSION (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 25.51	n = 26 35.19
Group 2	n = 34 28.03	n = 65 32.09
Effect		Result
(1) APQ Change		F(1,163) = 6.131, p < .05**

(E) CURRENT COGNITIONS QUESTIONNAIRE (post score)

	APQ Change 0	APQ Change 1
Group 1	n = 39 111.54	n = 26 115.88
Group 2	n = 34 109.12	n = 65 117.29
Effect		Result
(1) APQ Change		F(1,163) = 3.984, p < .05**

*0 = No change or decrease in APQ; 1 = Increase in APQ

**Denotes statistical significance

Appendix B
Instruments

Appendix B

Instruments

(Attached to first instrument in each packet)

Please begin with the top questionnaire and proceed in order from top to bottom. Read and follow the instructions carefully and complete each questionnaire before going on to the next. When you have completed the final questionnaire, please place all measures back in the manila envelope and continue to follow the instructions just given by the experimenter.

SELF-CONSCIOUSNESS SCALE

Directions: Please circle the number of the response that you feel most represents how much you believe the statement is characteristic of yourself.

1. I'm always trying to figure myself out.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

2. I'm concerned about my style of doing things.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

3. Generally, I'm not very aware of myself.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

4. It takes me time to overcome my shyness in new situations.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

5. I reflect about myself a lot.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

6. I'm concerned about the way I present myself.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

7. I'm often the subject of my own fantasies.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

8. I have trouble working when someone is watching me.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |
9. I never scrutinize myself.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |
10. I get embarrassed very easily.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |
11. I'm self-conscious about the way I look.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |
12. I don't find it hard to talk to strangers.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |
13. I'm generally attentive to my inner feelings.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |
14. I usually worry about making a good impression.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |
15. I'm constantly examining my motives.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |
16. I feel anxious when I speak in front of a group.
- | | | | | |
|-------------------------------|---|----------------------------|---|-----------------------------|
| 0 | 1 | 2 | 3 | 4 |
| extremely
uncharacteristic | | somewhat
characteristic | | extremely
characteristic |

17. One of the last things I do before I leave my house is look in the mirror.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

18. I sometimes have the feeling that I'm off somewhere watching myself.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

19. I'm concerned about what other people think of me.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

20. I'm alert to changes in my mood.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

21. I'm usually aware of my appearance.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

22. I'm aware of the way my mind works when I work through a problem.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

23. Large groups make me nervous.

0	1	2	3	4
extremely uncharacteristic		somewhat characteristic		extremely characteristic

OFFER SELF-IMAGE QUESTIONNAIRE

This questionnaire is used for scientific purposes.
There are no right or wrong answers.

After carefully reading each of the statements on the following pages, please circle the number on the answer sheet that indicates how well the item describes you: the numbers correspond with categories that range from "Describes me very well" (1) to "Does not describe me at all" (6). Please circle only one choice for each statement. Please respond to all items. Thank you.

Use the following values:

- 1 = Describes me very well
- 2 = Describes me well
- 3 = Describes me fairly well
- 4 = Does not quite describe me
- 5 = Does not really describe me
- 6 = Does not describe me at all

- | | | | | | | |
|--|---|---|---|---|---|---|
| 1. When I am with people I am afraid that someone is going to make fun of me. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. The recent changes in my body have given me some satisfaction. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. I am confused most of the time. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. In the past year I have been very worried about my health. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. I often blame myself even when I am not at fault. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Sometimes I feel so ashamed of myself that I just want to hide in a corner and cry. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. The picture I have of myself in the future satisfies me. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. I feel empty emotionally most of the time. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. I am proud of my body. | 1 | 2 | 3 | 4 | 5 | 6 |

1

- | | | | | | | |
|--|---|---|---|---|---|---|
| 10. I often feel that I would rather die than go on living. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. I seem to be forced to imitate the people I like. | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Other people are not after me to take advantage of me. | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Very often I think I am not at all the person I would like to be. | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. I frequently feel ugly and unattractive. | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Even though I am continuously on the go, I seem unable to get things done. | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. When others look at me, they must think that I am poorly developed. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. I believe I can tell the real from the fantastic. | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. I feel strong and healthy. | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. When I enter a new room, I have a strange and funny feeling. | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. When I am with people, I am bothered by hearing strange noises. | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. I do not have many fears which I cannot understand. | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. No one can harm me just by not liking me. | 1 | 2 | 3 | 4 | 5 | 6 |

BODY AND SELF-IMAGE SUBSCALE OF OSIQ

The recent changes in my body have given me some satisfaction.

In the past year I have been very worried about my health.

The picture I have of myself in the future satisfies me.

I am proud of my body.

I seem to be forced to imitate the people I like.

Very often I think I am not at all the person I would like to be.

I frequently feel ugly and unattractive.

When others look at me, they must think that I am poorly developed.

I feel strong and healthy.

PSYCHOPATHOLOGY SUBSCALE OF OSIQ

I am afraid that someone is going to make fun of me.

I am confused most of the time.

I often blame myself even when I'm not really at fault.

Sometimes I feel so ashamed of myself that I just want to hide in a corner and cry.

I feel empty emotionally most of the time.

I often feel that I would rather die than go on living.

Other people are not after me to take advantage of me.

Even though I am continuously on the go, I seem unable to get things done.

I believe I can tell the real from the fantastic.

When I enter a new room I have a strange and funny feeling.

When I am with people, I am bothered by strange noises.

I do not have many fears which I cannot understand.

No one can harm me just by not liking me.

AUTONOMIC PERCEPTION QUESTIONNAIRE

On the following scale, we would like you to circle the appropriate number to indicate how you are experiencing your bodily reactions AT THIS MOMENT.

AT THIS MOMENT, ARE YOU NOTICING:

1. Awareness of many bodily reactions

Very few										Very many
0	1	2	3	4	5	6	7	8	9	

2. Frequency of awareness of those reactions

Not aware at all										Constantly aware
0	1	2	3	4	5	6	7	8	9	

3. Face becoming hot

No change										Very hot
0	1	2	3	4	5	6	7	8	9	

4. Hands becoming cold

No change										Very cold
0	1	2	3	4	5	6	7	8	9	

5. Perspiration

Not at all										A great deal
0	1	2	3	4	5	6	7	8	9	

6. Mouth becoming dry

Not at all										Very dry
0	1	2	3	4	5	6	7	8	9	

7. Muscles becoming tense

None										A great deal
0	1	2	3	4	5	6	7	8	9	

8. Headache

None										Very much
0	1	2	3	4	5	6	7	8	9	

9. Changes in heart action

Very few										Very many
0	1	2	3	4	5	6	7	8	9	

10. Increases in rate of heartbeat

No change								Great acceleration
0	1	2	3	4	5	6	7	8 9

11. Increases in intensity of heartbeat

No change								Increases to extreme pounding
0	1	2	3	4	5	6	7	8 9

12. Changes in breathing

No change								Great change
0	1	2	3	4	5	6	7	8 9

13. Breathing becoming more rapid

No change								Very rapid
0	1	2	3	4	5	6	7	8 9

14. Breathing becoming more deep

No change								Much more deep
0	1	2	3	4	5	6	7	8 9

15. Breathing becoming more shallow

No change								Much more shallow
0	1	2	3	4	5	6	7	8 9

16. Blood rushing to head

No change								Very much
0	1	2	3	4	5	6	7	8 9

17. Lump in throat

None								Very much
0	1	2	3	4	5	6	7	8 9

18. Stomach becoming upset

Not at all								Very upset
0	1	2	3	4	5	6	7	8 9

19. Sinking or heavy feeling in stomach

None								Very much
0	1	2	3	4	5	6	7	8 9

20. Difficulty in talking

None							Very much		
0	1	2	3	4	5	6	7	8	9

21. Bodily reactions becoming bothersome

Not bothersome							Bothered very much		
0	1	2	3	4	5	6	7	8	9

CURRENT COGNITIONS QUESTIONNAIRE

On the following scale, please circle the appropriate number to indicate the extent to which each statement applies to you AT THIS MOMENT.

1. My mind is at peace.

Not at all true									Very true
0	1	2	3	4	5	6	7	8	9

2. I am unable to keep anxiety-provoking pictures out of my mind.

Not at all								Yes, completely	
0	1	2	3	4	5	6	7	8	9

3. I am distracted by thoughts.

Not at all								Very much	
0	1	2	3	4	5	6	7	8	9

4. An unimportant thought is running through my mind and bothering me.

Not at all								Very much	
0	1	2	3	4	5	6	7	8	9

5. I am worried.

Not at all								Very much	
0	1	2	3	4	5	6	7	8	9

6. I am presently worrying over possible misfortune.

Not at all								Very much	
0	1	2	3	4	5	6	7	8	9

7. I believe I am in control of my life.

Not at all								Yes, completely	
0	1	2	3	4	5	6	7	8	9

8. I believe I have control over my actions.

Not at all								Yes, completely	
0	1	2	3	4	5	6	7	8	9

9. I am having pleasant thoughts and images.

Not at all true								Very true	
0	1	2	3	4	5	6	7	8	9

10. I am imagining unpleasant scenes.

Not at all									Yes, many
0	1	2	3	4	5	6	7	8	9

11. I am concerned about the possibility of doing poorly.

Not at all									Very much
0	1	2	3	4	5	6	7	8	9

12. I believe that I do things as well as I can.

Not at all									Yes, definitely
0	1	2	3	4	5	6	7	8	9

13. I am confident about my abilities.

Not at all									Very confident
0	1	2	3	4	5	6	7	8	9

14. I wonder what others think of me.

Not at all									Very much
0	1	2	3	4	5	6	7	8	9

15. I am concerned about the opinions of others.

Not at all									Very much
0	1	2	3	4	5	6	7	8	9

16. I am thinking about the purpose of this experiment.

Not at all									Very much
0	1	2	3	4	5	6	7	8	9

17. I am thinking about things completely unrelated to this experiment.

Not at all									Very much
0	1	2	3	4	5	6	7	8	9

18. I am confused.

Not at all									Very much
0	1	2	3	4	5	6	7	8	9

19. I am uncertain about things.

Not at all									Very much
0	1	2	3	4	5	6	7	8	9

20. I believe I can do many things well.

Not at all

Very much

0 1 2 3 4 5 6 7 8 9

21. I doubt my abilities.

Not at all

Very much

0 1 2 3 4 5 6 7 8 9

22. I believe I can achieve my goals.

Not at all

Very much

0 1 2 3 4 5 6 7 8 9

23. I believe I must do things well.

Not at all

Very much

0 1 2 3 4 5 6 7 8 9

24. My mind is full of competing thoughts.

Not at all

Very many

0 1 2 3 4 5 6 7 8 9

Please circle the line below the point on the scale which best describes your reaction AT THIS MOMENT to each word or phrase.

[illegible]

vv = definitely feel

1. Blue

XX **X** **V** **VV**

XX **X** **V** **VV**

XX **X** **V** **VV**

XX **X** **V** **VV**

XX		X	V	VV
—	—	—	—	—

XX	X	V	VV
----	---	---	----

XX = definitely do not feel

X = do not feel

V = slightly feel

VV = definitely feel

Remember, circle the line at ANY POINT along the scale that you think best describes your current reaction.

5. Unhappy

XX X V VV
 — — — — — — — — — — — — — — — —

6. Submissive

XX X V VV
 — — — — — — — — — — — — — — — —

7. Depressed

XX X V VV
 — — — — — — — — — — — — — — — —

8. Satisfied

XX X V VV
 — — — — — — — — — — — — — — — —

9. Aroused

XX X V VV
 — — — — — — — — — — — — — — — —

10. Inactive

XX X V VV
 — — — — — — — — — — — — — — — —

11. Discontented

XX X V VV
 — — — — — — — — — — — — — — — —

12. Lively

XX X V VV
 — — — — — — — — — — — — — — — —

VV = definitely feel

L

XX **X** **V** **VV**

XX **X** **V** **VV**

XX X V VV

[illegible]

XX X V VV

[illegible][illegible][illegible]

XX = definitely do not feel

X = do not feel

V = slightly feel

VV = definitely feel

Remember, circle the line at ANY POINT along the scale that you think best describes your current reaction.

21. Dominant

XX X V VV
 — — — — — — — — — — — — — — — —

22. Contented

XX X V VV
 — — — — — — — — — — — — — — — —

23. Influential

XX X V VV
 — — — — — — — — — — — — — — — —

24. Happy

XX X V VV
 — — — — — — — — — — — — — — — —

25. Gloomy

XX X V VV
 — — — — — — — — — — — — — — — —

26. Sluggish

XX X V VV
 — — — — — — — — — — — — — — — —

27. Full of pep

XX X V VV
 — — — — — — — — — — — — — — — —

28. Sad

XX X V VV
 — — — — — — — — — — — — — — — —

VV = definitely feel

29. Placid

30. Guided

31. Aflame

32. Intense

33. Wide awake

34. Energetic

35. **Awed**

36. Peppy

XX X V W

(Attached to post-task open-ended questions)

We would like some information concerning your perceptions of this study. What did you think was going on? Please use the space below to write some of your ideas.

Please use the space below to list any events which have taken place in your life during the past 24 hours that you feel have had any sort of impact on you.

What is your age? _____

Have you had psychological counseling lasting more than three sessions during the past year? _____ Yes _____ No

Appendix C
Written Instructions
Placed on Top of Desk

Appendix C

Written Instructions

CONDITION 1

When you enter the room, you will see a desk and a chair to your left. Please sit down and read the printed instructions on the desk. As they will tell you, the tape recorder has some pre-recorded questions on it. Whenever you feel ready, all you do is push the "PLAY" button. The tape has been pre-set for you to the proper starting point. After you have heard the first question on tape, press the "STOP" button. All we would like you to do is think about how you would respond. You do not have to respond out loud. Your responses will in no way be recorded, and you will not be observed in any way without your knowledge.

When you are ready to go on to Question 2, press the "PLAY" button; listen to the question; press "STOP"; and, again, just think about your response for as long as you wish. Keep repeating this procedure until you have heard the voice say: "This is the end of the questions." You may then press the "STOP" button.

After you complete the last question, you will notice another packet on the desk marked #2. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN," and complete all questionnaires. Please place all of the questionnaires back in the envelope as you finish. Once all

questionnaires are completed, you may leave the room. In order not to distract or disrupt your thinking, I will be leaving you alone and be out in the main hallway where I met you. If you have any questions or wish to end your participation, you can find me there. You may end your participation at any time. You will lose no credit.

CONDITION 2

In this next part of the experiment, I will be sitting with you for a short time and asking you some questions about your experience at this time. You are free to stop at any point, just by stating so; you will lose no credit. Your responses will in no way be recorded. We would like you to respond however you wish, as lengthy a response as you like, or you may choose not to respond at all. The choice is entirely yours.

(Self-awareness experience)

This is the end of this phase of the experiment. You will notice another packet on the desk. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN" and complete all questionnaires. As you finish, please put the questionnaires back in the envelope. Once you have completed all of the questionnaires, you may leave the room. In order to not distract or disrupt your thinking, I will be leaving you alone now and will wait out in the main hallway where I met you. If you have any questions or wish to end your participation, you can find me there.

CONDITION 3

When you enter the room, you will see a desk and chair to your left. Please sit down and read the sheet of instructions on the desk. As they will tell you, there are two tape recorders on the desk, one marked #1, with a series of pre-recorded questions, and the other, #2, with a blank tape.

Whenever you are ready, please begin by pressing the "RECORD" and "PLAY" buttons on recorder #2. You may leave this tape running throughout the experiment--it will be recording your responses to the questions on the other tape. When you are ready to begin listening to the questions, press "PLAY" on recorder #1. After you have heard the first question on the tape, press the "STOP" button. You may respond to the question in any way you wish--or you may choose not to respond at all. The choice is entirely yours.

When you are ready to go on to Question 2, press the "PLAY" button. Once you have heard the question, press "STOP" and, again, respond in any way you like or not at all. Proceed through each question in this manner until you hear the voice say: "This is the end of the questions." Once you hear this, press the "STOP" buttons on BOTH recorders.

After you complete the last question, you will notice another packet on the desk marked #2. We would like you to complete this second short set of questionnaires. Once

again, start from the top, on the side marked "BEGIN," and complete all questionnaires. Please place all of the questionnaires back in the envelope as you finish. Once all questionnaires are completed, you may leave the room. In order not to distract or disturb your thinking, I will be waiting in the main hallway where I met you. If you have any questions or wish to end your participation, you can find me there. You may end your participation at any time. You will lose no credit.

CONDITION 4

When you enter the room, you will see a desk and chair to your left. Please sit down and read the printed instructions on the desk. As they will tell you, the tape recorder has some pre-recorded questions on it. Whenever you feel ready, all you do is push the "PLAY" button. The tape has been pre-set for you to the proper starting point. After you have heard the first question on the tape, press the "STOP" button. All we would like you to do is think about how you would respond. You do not have to respond out loud. Your responses will in no way be recorded, and you will not be observed in any way without your knowledge.

When you are ready to go on to Question 2, press the "PLAY" button; listen to the question; press "STOP"; and, again, just think about your response for as long as you wish. Keep repeating this procedure until you have heard the voice say: "This is the end of the questions." You may then press the "STOP" button.

After you complete the last question, you will notice another packet on the desk marked #2. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN," and complete all questionnaires. Please place all of the questionnaires back in the envelope as you finish. Once all questionnaires are completed, you may leave the room. I will be back shortly to tell you about the experiment. In

order not to distract or disrupt your thinking, I will be leaving you alone and be out in the main hallway where I met you. If you have any questions or wish to end your participation, you can find me there. You may end your participation at any time. You will lose no credit.

CONDITION 5

When you enter the room, you will see a desk and chair to your left. Please sit down and read the printed instructions on the desk. As they will tell you, the tape recorder has some pre-recorded questions on it. Whenever you feel ready, all you do is push the "PLAY" button. The tape has been pre-set for you to the proper starting point. After you have heard the first question on tape, press the "STOP" button. All we would like you to do is think about how you would respond. You do not have to respond out loud. Your responses will in no way be recorded, and you will not be observed in any way without your knowledge.

When you are ready to go on to Question 2, press the "PLAY" button; listen to the question; press "STOP"; and, again, just think about your response for as long as you wish. Keep repeating this procedure until you have heard the voice say: "This is the end of the questions." You may then press the "STOP" button.

After you complete the last question, you will notice another packet on the desk marked #2. We would like you to complete this second short set of questionnaires. Once again, start from the top, on the side marked "BEGIN," and complete all questionnaires. Please place all of the questionnaires back in the envelope as you finish. Once all questionnaires are completed, you may leave the room.

In order not to distract or disrupt your thinking, I will be leaving you alone and be out in the main hallway where I met you. If you have any questions or wish to end your participation, you can find me there. You may end your participation at any time. You will lose no credit.

Appendix D
Subject Debriefing
(Written)

Appendix D

Subject Debriefing

(Written)

As the experimenter told you just after your participation, the study in which you were involved dealt with a state called "self-awareness." Each of you was assigned to a group in which self-awareness was heightened in different ways: by using a mirror and/or audiotape recorder to record your responses, having the experimenter ask questions of you, listening to and thinking about questions you heard on tape (as well as filling out questionnaires about yourself and even just participating in an experiment).

We were interested in exploring the different ways that individuals react to these different sources of self-awareness. According to some researchers, looking at yourself in a mirror or writing about yourself produces a self-awareness in which you become much more aware of what is going on internally--your thoughts, feelings, and physiological reactions. But in the case of speaking before an audience or being asked questions directly by another person, your attention is divided between your own internal reactions and concerns about the audience or other person. Self-awareness is then termed more "public"--an increased awareness of yourself in relation to other people.

The purpose of this study was to see how individuals' responses (to the perception of their internal states) differed depending on the self-awareness experience to which they were assigned.

In clinical work (i.e., therapy or counseling), self-awareness is heightened in a number of different ways, including having the therapist (counselor) ask you questions of a personal and/or experiential nature and your own thinking about your internal responses. Therefore, the data from this study will provide information concerning what types of self-knowledge may be gained from what types of sources of heightened self-awareness when in clinical settings.

Once again, we would like to thank you for your participation. If you have further questions, please contact:

Ann M. Isenberg

355-9564 (leave message)

or 332-8885

Appendix E
Consent Form

Appendix E

Consent Form

This is a study on self-reflection. We are interested in exploring some of the ways in which individuals experience themselves in a variety of settings. You will be spending a short time in one particular setting, and other subjects will experience the same or a different setting.

Before you enter the room in which the experiment will be conducted, you will be completing several short questionnaires. The experimenter will then briefly explain the procedure for the rest of the experiment. Finally, before debriefing, you will be asked to once again complete several short questionnaires. The entire experiment should last from 45 to 60 minutes.

You may ask questions of the experimenter at any point, and you are also free to discontinue your participation at any time. Following your participation, you have the opportunity to ask questions; and you will receive a short debriefing to tell you about the study. A lengthier statement concerning all facets of this project will be sent to all subjects at the end of the data collection period (targeted for May 1986). All information you provide will be coded to maintain confidentiality.

You will receive credit for all participation in this project if outlined by your course instructor.

Please read this information carefully and feel free to ask the experimenter any questions you might have. If, after reading the above statement, you agree to participate in this study, please signify by signing your name and the date below.

Volunteer's Signature

Date

Experimenter's Signature

Date

Bibliography

Bibliography

- American Heritage. (1985). *The American Heritage Dictionary*. 2nd College Ed. Boston: Houghton-Mifflin Co.
- Bailey, K. G., & Sowder, W. T. (1970). Audiotape and videotape self-confrontation in psychotherapy. *Psychological Bulletin*, 74, 127-137.
- Beck, A. T., & Emery, G. (1985). *Anxiety disorders and phobias*. New York: Basic Books, Inc.
- Borkovec, T. D. (1976). Physiological and cognitive process in the regulation of anxiety. In Schwartz, G. E., & Shapiro, D. *Consciousness and self-regulation: Advances in research*. V. 1. New York: Plenum Press.
- Borkovec, T. D., & O'Brien, G. T. (1977). Relation of autonomic perception and its manipulation to the maintenance and reduction of fear. *Journal of Abnormal Psychology*, 86, 163-171.
- Brehem, S. (1976). *The application of social psychology to clinical practice*. New York: John Wiley & Sons.
- Brown, R., Munjack, D., & McDowell, D. (1989). Agoraphobia with and without current panic attacks. *Psychological Reports*, 64, 503-506.
- Buss, D. M., & Scheier, M. F. (1976). Self-consciousness, self-awareness, and self-attribution. *Journal of Research in Personality*, 10, 463-468.
- Carver, C. S. (1979). A cybernetic model of self-attention processes. *Journal of Personality and Social Psychology*, 37, 1251-1281.
- Carver, C. S., & Scheier, M. F. (1978). Self-focusing effects of dispositional self-consciousness, mirror presence, and audience presence. *Journal of Personality and Social Psychology*, 36, 324-332.

- Carver, C. S., Blaney, P. H., & Scheier, M. F. (1979). Focus of attention, chronic expectancy, and responses to a feared stimulus. *Journal of Personality and Social Psychology*, 37, 1186-1195.
- Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behavior*. New York: Springer-Verlag.
- Cheek, J. M., & Briggs, S. R. (1982). Self-consciousness and aspects of identity. *Journal of Research in Personality*, 16, 401-408.
- Damsteegt, D. C., & Christoffersen, J. (1982). Objective self-awareness as a variable in counseling process and outcome. *Journal of Counseling Psychology*, 29, 421-424.
- Danet, B. N. (1968). Self-confrontation in psychotherapy reviewed. *American Journal of Psychotherapy*, 22, 244-257.
- Davis, D., & Brock, T. C. (1975). Use of first person pronouns as a function of increased self-awareness and performance feedback. *Journal of Experimental Social Psychology*, 11, 381-388.
- Duval, S., & Wicklund, R. A. (1972). *A theory of objective self-awareness*. New York: Academic Press.
- Duval, S., & Wicklund, R. A. (1973). Effects of objective self-awareness on attribution of causality. *Journal of Experimental Social Psychology*, 9, 17-31.
- Elkisch, P. (1957). The psychological significance of the mirror. *Journal of the American Psychoanalytic Association*, 5, 235-244.
- Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, 43, 522-527.
- Foa, E. B., Steketee, G., & Young, M. C. (1984). Agoraphobia: Phenomenological aspects, associated characteristics, and theoretical considerations. *Clinical Psychology Review*, 4, 431-457.
- Franzoi, S. L., & Brewer, C. C. (1984). The experience of self-awareness and its relation to level of self-consciousness: An experimental sampling study. *Journal of Research in Personality*, 18, 522-540.

- Frenkel, R. E. (1980). Mirror image therapy. In R. Herink, *Forms of psychotherapy* (publication information unavailable).
- Geller, V., & Shaver, P. (1976). Cognitive consequences of self-awareness. *Journal of Experimental Social Psychology*, 12, 99-108.
- Gibbons, F. X., Carver, C. S., Scheier, M. F., & Hormuth, S. E. (1979). Self-focused attention and the placebo effect: Fooling some of the people some of the time. *Journal of Experimental Social Psychology*, 15, 263-274.
- Gibbons, F. X. (1983). Self-attention and self-report: The "veridicality" hypothesis. *Journal of Personality*, 51, 517-542.
- Goldberg, B. (1975). *The mirror and man*. Charlottesville, VA: University Press of Virginia.
- Graham, J. R., & Strenger, V. E. (1988). MMPI characteristics of alcoholics: A review. *Journal of Consulting and Clinical Psychology*, 56, 197-205.
- Gillis, R., & Carver, C. S. (1980). Self-focus and estimation of heart rate following physical exertion. *Bulletin of the Psychonomic Society*, 15, 118-120.
- Hass, E. G. (1984). Perspective taking and self-awareness: Drawing an E on your forehead. *Journal of Personality and Social Psychology*, 46, 788-798.
- Hinterkopf, E. (1983). Experiential focusing: A three-stage training program. *Journal of Humanistic Psychology*, 23, 113-126.
- Hull, J. G., & Levy, A. S. (1979). The organizational functions of the self: An alternative to the Duval and Wicklund model of self-awareness. *Journal of Personality and Social Psychology*, 37, 756-768.
- Jacobson, N. S., Follette, W. C., & Revenstorf, D. (1984). Psychotherapy outcome research: Methods for reporting variability and evaluating clinical significance. *Behavior Therapy*, 15, 336-352.
- Kimble, C. E., Hirt, E. R., & Arnold, E. M. (1985). Self-consciousness, public and private self-awareness, and memory in a social setting. *The Journal of Psychology*, 119, 59-69.

- Lanzetta, J. T., Biernat, J. J., & Kleck, R. E. (1982). Self-focused attention, facial behavior, autonomic arousal, and the experience of emotion. *Motivation and Emotion*, 6, 49-63.
- Levine, D. W., & McDonald, P. J. (1981). Self-awareness and the veracity hypothesis. *Personality and Social Psychology Bulletin*, 7, 655-660.
- Liebling, B. A., & Shaver, P. (1973). Evaluation, self-awareness, and task performance. *Journal of Experimental Social Psychology*, 9, 297-306.
- Mahoney, M. J. (1985). Personal Communication. August 5, 1985.
- Mahoney, M. J. (1988). Personal communication. June 12, 1988.
- Mahoney, M. J. (1988, February 14). *Emotional processes in human psychological change*. Paper presented at the annual meeting of the American Association for the Advancement of Science. Boston, MA.
- Mahoney, M. J. (1990). Personal communication. March 19, 1990.
- Mahoney, M. J., & Pruzinsky, T. (1985, June 7-9). The use of self-consciousness techniques in psychotherapy. Notes presented at the First Annual Meeting of the Society for the Exploration of Psychotherapy Integration. Annapolis, MD.
- Mahoney, M. J., Guidano, V. F., Reda, M. A., Amoni, D., Caridi, A., & Blanco, T. (1985). *Procedure Manual: Collaborative study on the use of mirror time in developmental cognitive therapy*.
- Mandler, G., Mandler, J. M., & Uviller, E. T. (1958). Autonomic feedback: The perception of autonomic activity. *Journal of Abnormal and Social Psychology*, 56, 367-373.
- Mayer, J. D., & Bremer, D. (1985). Assessing mood with affect-sensitive tasks. *Journal of Personality Assessment*, 45, 95-99.
- Offer, D., Ostrov, E., & Howard, K. I. (1981). *The adolescent: A psychological self-portrait*. New York: Basic Books.

- Offer, D., Ostrov, E., & Howard, K. I. (1982). *The offer self-image questionnaire for adolescents: A manual*. Third edition. Chicago: Michael Reese Hospital and Medical Center.
- Paulus, P. B., Annis, A. B., & Risner, H. T. (1978). An analysis of the mirror-induced objective self-awareness effect. *Bulletin of the Psychonomic Society*, 12, 8-10.
- Pryor, J. B., Gibbons, F. X., Wicklund, R. A., Fazio, R. H., & Hood, R. (1977). Self-focused attention and self-report validity. *Journal of Personality*, 45, 514-527.
- Random House. (1967). *Dictionary of the English Language*. New York: Random House.
- Russell, J. A. (1979). Affective space is bipolar. *Journal of Personality and Social Psychology*, 37, 345-356.
- Sackheim, H. A., & Gur, R. C. (1978). Self-deception, self-confrontation, and consciousness. In G. E. Schwartz, & D. Shapiro (Eds.), *Consciousness and self-regulation: Advances in research and theory*. V. 2. New York: Plenum Press, pp. 139-197.
- Sanborn, D. E., Pyke, H. F., & Sanborn, C. J. (1975). Videotape playback and psychotherapy: A review. *Psychotherapy: Theory, research, and practice*, 12, 179-186.
- Sayons, K., & Brown, A. E. (1953). Distorting mirror: Note on a new apparatus for investigation on the self. *Canadian Journal of Psychology*, 72, 86-87.
- Scheier, M. F. (1976). Self-awareness, self-consciousness, and angry aggression. *Journal of Personality*, 44, 627-644.
- Scheier, M.F. (1985). Personal communication. November 4, 1985.
- Scheier, M. F., & Carver, C. S. (1977). Self-focused attention and the experience of emotion: Attraction, repulsion, elation, and depression. *Journal of Personality and Social Psychology*, 35, 625-636.
- Scheier, M. F., Buss, A. H., & Buss, D. M. (1978). Self-consciousness, self-report of aggressiveness, and aggression. *Journal of Research in Personality*, 12, 133-140.

- Scheier, M. F., Carver, C. S., & Gibbons, F. X. (1979). Self-directed attention, awareness of bodily states, and suggestibility. *Journal of Personality and Social Psychology*, 37, 1576-1588.
- Scheier, M. F., Carver, C. S., & Gibbons, F. X. (1981). Self-focused attention and reactions to fear. *Journal of Research in Personality*, 15, 1-15.
- Scheier, M. F., & Carver, C. S. (1983). Two sides of the self: One for you and one for me. In J. Suls, & A. J. Greenwald (Eds.), *Psychological perspectives on the self*, V. 2. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Stephenson, B., & Wicklund, R. A. (1983). Self-directed attention and taking the other's perspective. *Journal of Experimental Social Psychology*, 19, 58-77.
- Storms, M. D. (1973). Videotape and the attribution process: Reversing actors' and observers' points of view. *Journal of Personality and Social Psychology*, 27, No. 2, 165-175.
- Strong, S. R. (1978). Social psychological approach to psychotherapy research. In S. L. Garfield, & A. E. Bergin (Eds.), *Handbook of psychotherapy and behavior change: An empirical analysis*. Second edition. New York, NY: John Wiley & Sons.
- Turner, R. G., Carver, C. S., Scheier, M. F., & Ickes, W. (1978). Correlates of self-consciousness. *Journal of Personality Assessment*, 42, 3.
- Turner, R. G., & Gilliland, L. (1981). Self-consciousness, evaluation of physical characteristics, and physical attractiveness. *Journal of Research in Personality*, 15, 182-190.
- Wegner, D. M. & Guiliano, T. (1980). Arousal-induced attention to self. *Journal of Personality and Social Psychology*, 38, 719-726.
- Wicklund, R. A. (1975). Objective self-awareness. In L. Berkowitz, ed., *Advances in experimental social psychology*. New York, NY: Academic Press, pp. 233-275.

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