1978

Reactivity to personality tests in counseling

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REACTIVITY TO PERSONALITY TESTS IN COUNSELING.

IOWA STATE UNIVERSITY, PH.D., 1978
Reactivity to personality tests in counseling

by

Chris Jorgen Hansen

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of The Requirements for the Degree of DOCTOR OF PHILOSOPHY

Major: Psychology

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For the Graduate College

Iowa State University
Ames, Iowa

1978
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Dedication

To Maren
Acknowledgments

He (the patron) was conscious that he had done the greatest benefaction for the other person, and so it was; he was conscious of how he had worked for it, what time and industry and care it had cost him to deceive the other person into the truth, how much misunderstanding he had to endure from the one he helped by depriving him of his folly and ingeniously inducting him into the truth. . . . In this way he labored; and when the work was completed, he said very softly to himself; now this man stands alone (Kierkegaard, 1847/1962).
Introduction

Test scores often enter into psychological studies as dependent variables. Tests are frequently used to measure the traits and states of counseling clients. The converse, the effect of personality test taking on the counseling client, is the subject of this research study. Test taking as an independent variable has not been extensively researched; several related areas of study, however, bear on this issue.

Rogerian Theory

It is ironic that someone who brought so much scientific rigor to counseling research should develop theories very nearly antithetical to measurement, a cornerstone of science. Rogers describes the essence of therapy as "to simply react in an unreflective way to the other individual . . ., without any type of diagnostic or analytic thinking . . .; it is the height of personal subjectivity" (Rogers, 1961).

Objective measurement, specifically, research testing, is out of place in this counseling context. "Because science has as its field the 'other', the 'object', . . . everything it touches is transformed into an object" (Rogers, 1961). It might be concluded that research testing in
psychotherapy/counseling must be done at the expense of therapy.

Carl Rogers writes of his experiences with "A silent young man," Jim (Meador & Rogers, 1973). He sees Jim through an extremely depressed and withdrawn period until he is little by little willing to take a positive approach to life. Months after Rogers has left, he receives a letter reporting that "I've met lots of people and made lots of friends," but he has declined to take follow-up tests. Rogers ponders;

his (Jim's) refusal is very thought-provoking. . . . Perhaps when people accept themselves as persons, they refuse to be regarded as 'objects' no matter how important this is to the researcher. It is a challenging, and in some sense a positive, thought.

If former clients who have recently experienced personal growth refuse to take personality tests, perhaps administering such tests to counseling clients impedes their progress toward personhood and self-acceptance.

Testing specifically for diagnostic purposes may present additional problems, according to Rogers' earlier writings. Diagnostic tests are viewed as not only unnecessary, but as detrimental and unwise (Rogers, 1951). A client needs to believe in his own self-worth and trust his capabilities to know himself. Beginning therapeutic contacts with tests implies that the therapist/counselor
is the expert who will solve the client's problems (Rogers, 1942). The client senses a loss of personhood and a meaningful therapeutic outcome becomes more remote. Rogers concludes that solutions arrived at through diagnostic tests are not genuine and do not help the individual; they only make him overdependent and resentful.

These latter comments from the 1940's and 1950's were made within a context of extensive test batteries, but, still, the overall tenor of his counseling theories seems to be opposed to testing. His writings suggest a response to quantitative measurement similar to that of Søren Kierkegaard, a man Rogers regards "as a sensitive and highly personal friend" (Rogers, 1961).

The single individual ranks qua spirit according to the extent he can endure, wholly unchanged, having statistics thrown at him (something like being splashed with mud by street urchins) (n.d./1970).

Mental Health Program Evaluation

Personality tests are used in the evaluation of mental health programs (e.g. Edwards, Yarvis, Mueller, Zingale and Wagman, 1978). The 1975 amendment to the Public Health Service Act (U.S. Congress, 1975) requires evaluation of federally funded mental health centers, and evaluation is increasingly being demanded by other groups (Zusman and
Yet, Suchman (1967) points out in his highly regarded monograph that few individuals with strongly vested interests in the programs they are conducting can be expected to welcome an objective evaluation. Even under favorable circumstances, it is common to find that dedicated persons are unreceptive to evaluative measurement (Wright & Hyman, 1964). Resistance to evaluation research is often translated into open conflict between the service worker and the evaluator.

The service worker asserts that evaluative measurement interferes with his activities (Suchman, 1967). Perhaps his claim is justified? The administration of personality tests as evaluative measures may disrupt counselors' work and impede clients' progress in counseling/psychotherapy.

**Measurement Reactivity**

Campbell (1957) and Campbell and Stanley (1963) have discussed the effects of test reactivity on the outcome of experimental and quasi-experimental research. Their treatment of the problem attests to the pervasive nature of test administration effects. It has become a truism in the social sciences that the measurement process may change that which is measured, nontest behavior as well as retest scores. Heisenberg's principle of indeterminacy (Reichenbach,
1951) applies to psychology as well as physics.

This measurement reaction process has been demonstrated by Schanck and Goodman (1939). In this classic study students were administered information, value, and interest tests which subtly provided persuasive information. Reading this disguised propaganda, which was counter to their prevailing prejudice, created conditions of conflict; on the attitude scale subsequent ratings reflected a lack of interest in the question, perplexity about which side was right and ignorance of the whole issue. Crespi (1948) reported that such responses indicate that the process leading to opinion development have begun.

Pollers commonly preface questions with brief statements in order to inform or orient the respondent. Such preambles are prone to bias and can influence respondents' attitudes through uncritical suggestion. Cantril (1944) named this influence the "preamble effect." Research by Roper (cited by Crespi, 1948) shows that the preamble effect creates attitudes (e.g. anti-labor union) which appear to persist when measured with unbiased questions.

Crespi's (1948) own research demonstrated that re-testing subjects with a public opinion survey leads to fewer "no opinion" responses. The interviews apparently lead to an incitement to information seeking, to thought or
to both, with the end that individuals develop opinions where formerly they had none.

Webb, Campbell, Schwartz, and Sechrest (1966) reviewed the unobtrusive measures that can be used to avoid reactions to testing. They suggested that when a subject is being observed through a traditional measurement procedure he defines a role for himself—what kind of person should I be as I answer these questions? If the subject matter is unfamiliar to the respondent he may have difficulty defining his role.

Subjects must also ask themselves—what kind of person am I for the experimenter (or counselor) to be asking me questions such as these? Why have I been singled out to be tested in this fashion? How does the experimenter (or counselor) perceive me?

Fiske's Studies of Reactions to Tests

Fiske (1971) has studied reactions to test taking. In his first investigation (Fiske, 1967) he used Orne's (1962) simulated subject technique. Six very brief simulated tests were presented to each of two groups of subjects. These groups, representative samples of the U.S. adult population, were asked to imagine taking these tests under job application and research instructions respectively.

The simulation of the tests was reasonably effective
on a cognitive level; respondents interpreted them quite accurately. Subjects saw the Strong Vocational Interest Blank questions as tapping interests, the Thurstone Temperament Schedule questions, personality, and the Minnesota Multiphasic Personality Inventory (MMPI) questions as measuring personality and stability.

However, congruent with the data from one of Fiske's unpublished studies (noted in Fiske, 1967), the simulation was weak at the affective level. The reported intensity of feeling was much less for the simulated tests than subjects reported they would feel if actually taking a test.

Relatively little negative affect was reported on the reaction scales to taking the simulated tests. But in the free responses to the question about how they would feel actually taking the test, half of the job group and a quarter of the research group expressed negative reactions. Also, much more negative feeling was reported in connection with the last real test taken (outside the experimental procedures) than with simulated tests.

Finally, the simulated tests ranged from an intelligence test to an inkblot test and the imagined context varied from job selection to experimental setting. Still, there were very few differences in feelings. The inkblot test was seen as more silly than the others and the MMPI questions were more frequently viewed as prying.
It was thought that respondents might feel free to give more negative responses when asked how others might feel about the test. Those who said others might feel differently (40%) and were willing to guess at how other people might feel attributed almost entirely negative reactions to others. It seems fair to conclude that many were not open in expressing their own feelings about the simulated tests.

Fiske (1969) measured Air Force subjects' reactions to four tests administered in a research context. He used first and third person forms of the Edwards Personality Inventory (EPI) (Edwards, 1966), the Personality Research Form (PRF), Form A (Jackson, 1967), and the first 300 items of the MMPI.

Reactions to the MMPI were somewhat distinctive. There were slightly more criticisms of MMPI items (e.g., as "stupid"), though the frequencies were very low. Another suggestion that there may have been stronger negative reactions to the MMPI was that the "Survey of Personal Reactions" form was omitted by subjects who took the MMPI more than by those in the other three groups.

On the other hand, the MMPI was judged significantly more positively as a good test, as accurate, as easy to answer, and as easier to answer frankly and openly. It may be that MMPI items are easier for normal subjects to answer because they are more specific, concrete, extreme and
unqualified than the items in the other tests. Or, this finding could be due to the relatively high number of MMPI subjects who did not respond to the Survey of Personal Reactions.

On the MMPI, reporting that some questions were annoying correlated negatively with Barron's Ego-Strength (Barron, 1953) and with Edwards' Social Desirability (Edwards, 1966), but positively with nine clinical scales. Similar but less marked patterns resulted for the responses that such questionnaires are pretty useless and make the respondent uncomfortable. The magnitude of the correlations between the clinical scales and the response, "the questions were annoying," had a rank order correlation of .58 with the proportion of scale items keyed true. It appears as though subjects who admitted to symptomatic behavior by answering true were annoyed, whereas answering false (even if such an alternative were keyed on a clinical scale) did not annoy them. If simple acquiescence set were operating here it is difficult to see why similar patterns did not emerge on the other two tests.

For the EPI written in the third person the size of the correlations between the scales and saying that this EPI was easy to answer was rank order correlated .31 with the proportion of items keyed true. No patterns appeared with the other two tests.
Fiske and Kuncel (1972) found the Marlowe-Crowne Social Desirability (MCSD) (Crowne & Marlowe, 1964) instrument to elicit twice as many criticisms of self as the Thurstone Embedded Figures or the Similes Preference Inventory (Pearson & Maddi, 1966). The MCSD also evoked twice as many expressions of apprehension and slightly more criticisms of tests than did those of preference and ability (the Similes and Embedded Figures tests). Possibly, self-descriptive instruments generate more "self-evaluative, self-deprecatory thinking" and intense anxiety by directing attention inward (Wine, 1971).

The ambiguity of self-descriptive measures may also increase subjects' apprehension. Sixty-seven percent of the subjects taking personality inventories (data from previous studies) found them ambiguous; only 15% described the Embedded Figures or Similes test as ambiguous.

Providing increased information to subjects was associated with slightly more positive attitudes toward personality measures (Tracy & Fiske, 1974). It did not, however, increase candor, scale homogeneity or the uniformity of test perceptions. Apparently changing a subject's attitude toward a test does not lead to a concomitant change in his or her responses to items.
Achievement Test Anxiety

Considering achievement and ability measures, test taking anxiety has been studied extensively. The largest body of research has focused on the effect of test anxiety on test scores. It is clear that anxiety is negatively related to scores on various measures of intelligence and academic achievement (Gaudry & Spielberger, 1971). The causal relationships, however, are not clear. There is evidence to suggest that the anxiety lowers scores as well as research that supports the hypothesis that low scores cause test anxiety (Anastasi, 1976).

The picture is further complicated by the finding that performance is improved by lowering the anxiety of high anxiety subjects and raising the anxiety of low anxiety subjects (Sarason, Mandler, & Craighill, 1952). In a somewhat different approach, Alpert and Haber (1960) have found it meaningful to divide test anxiety into two types, facilitating and debilitating. Generally facilitating anxiety correlates positively with test scores, while debilitating anxiety correlates negatively (Walsh, Engbretson, & O'Brien, 1968).

The components of Mandler and Sarason's Test Anxiety Questionnaire have typically been examined by various factor-analytic techniques (e.g., Gorsuch, 1966; Sassenrath, 1964; Sassenrath, Kight, & Kaiser, 1965). Two types of
factors seem to emerge: cognitive factors that might be labelled "worry" or "lack of confidence" and factors that refer to various indices of autonomic arousal or "emotionality" (Liebert & Morris, 1967). Worry and emotionality can be elicited independently, as in the experimental setting reported by Morris and Liebert (1973).

**Personality Test Anxiety**

The volume of research on personality test anxiety stands in contrast to the abundance of data on achievement test anxiety, and is poorly integrated as well.

One of the first suggestions that personality test taking is arousing came from Jacobs and Leventer (1955). The purpose of their study was to examine the effects of situational stresses induced by academic examinations and threats of failure upon the scores achieved on standard personality inventories. An unexpected finding was that control subjects' MMPI scores, especially the Welsh Anxiety Index, declined with retesting. Jacobs and Leventer (1955) hypothesize that the personality test itself may have represented a source of stress which dissipated somewhat with familiarity.

Windle's (1954) research is similar, but encompasses a broad range of personality tests. He found that 100 male undergraduates responded as though they were better adjusted
upon retesting two weeks later with the Personal Inventory and a multiple choice form of a sentence completion test (p < .05). He reviewed the research literature where test-retest scores had been reported and the authors had not postulated that an external variable was operating to change the scores. There were significantly more studies in which the trend was toward better adjustment than toward worse adjustment (p < .01). A larger proportion of the positive change studies employed test-retest intervals of less than two months (p < .01). Increased relaxation was one of the factors suggested to account for the change.

Windle's 1955 test-retest study of the MMPI confirmed his earlier conclusions. All the clinical scales except Pa declined on retest one week later. The scales that changed most, D, Pt and Hs, had anxiety in common. As expected by item overlap, Taylor's anxiety scale scores were also found to decline on retest.

Windle (1955) also tested several hypotheses regarding factors related to score change. In interviews two days after retest, about one quarter of the college student subjects felt that their thought or discussion between the test and retest had made them answer more like others. These students' D, Pt, Hs and A scores did not change more than the scores of the other subjects, however.
Only five of the 55 students admitted to being apprehensive about the tests and these maintained that they were only apprehensive at the initial testing. These students showed a greater tendency for change toward adjustment than nonapprehensive students. Only one of the four scales showed a statistically significant difference with this small sample. Windle concludes that test-taking anxiety best accounts for the test-retest changes observed in MMPI scores.

Dahlstrom, Welsh and Dahlstrom (1975) question whether such test-taking apprehension is very general or persistent. Two studies are cited to demonstrate that MMPI scores are not regressive toward the general adult means over repeated administrations.

Layton (1954) did not find a progressive decline in MMPI scores; however, the power of his test may not have been sufficient to detect small changes. Scores were ranked and analysis were performed separately on small samples of nine males and six females. Furthermore, the subjects were graduate students at the University of Minnesota (where the MMPI is (was) part of the entrance requirement), not subjects unfamiliar with the MMPI at initial testing.

Pauker's (1966) study is also cited by Dahlstrom et al. (1975) as evidence of the stability of MMPI scale score means. None of the means changed significantly when α was set at
.05. However, sample size was ten and the scores of Welsh's anxiety scale did decline significantly when α was .10.

Miller, Bohn, Gilden, and Stevens (1968) investigated personality test anxiety more directly than their predecessors and found that taking the MMPI was more anxiety arousing for college students than taking an achievement test (or taking no test at all). Students were asked to write essays after taking a short form of the MMPI, the Iowa Test of Basic Skills (ITBS), or no test. The essays were processed by the General Inquirer System Computer Program to specify the nature, direction and reliability of differences among the three groups. The MMPI group wrote words classified as more self-preoccupied than did the contrast groups. The MMPI group's distinctive themes focused on: needs, distress, attacking, rejecting, danger, failure, uncertainty, foreboding, conflict, tension, justifying, strength, achieving, striving, defending, wanting and needing love, family, duty, and insecurity. The conclusion was that the students perceived threat to their self-esteem and became anxious through the process of taking the MMPI. Miller recommended that the effects of various personality inventories be studied in therapeutic settings.

In a comparison of several personality tests, the Rorschach and the TAT were followed by increases in state
anxiety (Newmark, Hetzel, & Frerking, 1974). Further analyses indicated that these increases in the state scale scores of the State-Trait Anxiety Inventory (STAI) (Speilberger, Gorsuch, & Lushene, 1970) occurred only with the high trait anxious students. Neither the MMPI nor the Rotter Sentence Completion Test were associated with increases in state anxiety.

No changes in trait anxiety were evident with any of the measures. However, the procedure provides an extremely weak test of the no trait change hypothesis. The STAI was administered immediately prior to and immediately following the administration of the MMPI, Rorschach, TAT, and Sentence Completion, respectively to assess pre-post differences in trait anxiety for each of these four psychological tests. The four tests were administered to each subject in counterbalanced order over a four-day period. So, "post test" STAI's were administered after one, two, three or four of the psychological tests. Similarly, from a trait perspective, "pretest" STAI's were administered after zero, one, two, or three of the psychological tests.

Fiske (1967) noted that responses to a test on the first trial are atypical of responses on later trials. Certainly there must be some ceiling effect with personality test anxiety. The first of the four psychological tests
administered to subjects could increase their trait anxiety, while further administrations would not affect it appreciably. In all likelihood, no significant difference would be evident from the t tests if all the personality tests produced initial administration changes in trait anxiety because the tests were given in counterbalanced order. Three-fourths of the "pretest" STAI's were really post tests.

Newmark, Ray, Lyman, and Paine (1974) replicated the above study with three types of hospitalized psychiatric patients: schizophrenics, sociopaths and neurotics. The test-taking context was clinical in this study, not research oriented. Subjects were informed that their physicians specifically had requested this psychological assessment in order to learn more about their patient so that an appropriate treatment program could be formulated.

The psychiatric groups each reacted differently. As with the normals in previous study, schizophrenics increased in state anxiety upon being administered the projectives, the Rorschach and the TAT. In contrast, the sociopaths' state anxiety increased only with the objective tests, the MMPI and the Sentence Completion Test. State anxiety increased in the neurotics after each of the four tests. There were no significant changes in trait anxiety, but this study had the same design flaw as that of Newmark,

In a second replication, normal fourth graders responded as normal adults did to the Rorschach and the Sentence Completion Test; the Rorschach increased state anxiety while the Sentence Completion Test did not (Newmark, Wheeler, Newmark, & Stabler, 1975). The WISC information, Vocabulary and Block Design evoked state anxiety; the Children's Apperception Test (CAT) did not. The TAT had elicited increased state anxiety in normal adults (Newmark, Hetzel, & Frerking, 1974), but the CAT uses animal subjects, chosen because of their less threatening nature (Bills, 1950).

**Personality Test-Taking Effects on Counseling**

Miller et al. (1968) have called for research of the personality test taking effects in clinical/counseling settings. The research literature heretofore reviewed supports this recommendation.

First, overall adjustment and trait anxiety seems to be related to personality test anxiety. Windle (1954, 1955) and Jacobs and Leventer (1955) suggested that more adjusted scores on retesting are associated with personality test anxiety. Several recent studies lend support. High trait anxiety (Newmark, Hetzel, & Frerking, 1974) and neurosis' (Newmark, Ray, Lyman, & Paine, 1974) were both associated with personality test anxiety. Discomfort with the MMPI
correlated negatively with the Barron Ego-Strength Scale and the Edwards Social Desirability Scale and positively with the nine clinical MMPI scales (Fiske, 1969). The predominance of personality test anxiety among less well-adjusted subjects, especially high trait anxiety subjects, suggests that clinical/counseling clients are more susceptible to the effects of personality test-taking than most people.

Secondly, achievement test anxiety theory, as advanced by its originators (Mandler & Sarason, 1952) and later contributors proposes that a highly test anxious subject is internally focused on self-evaluative, self-deprecatory thinking (Wine, 1971). The same may be true of personality test anxious subjects.

The Marlowe-Crowne Social Desirability (MCSD) instrument elicited more apprehension than the Similes Preference Inventory or the Thurstone Embedded Figures test (Fiske & Kuncel, 1972). Criticisms of self and, to a lesser extent, criticisms of the test were also more frequently evoked by the MCSA than by either the preference or the ability test.

In addition, students in the Miller et al. (1968) MMPI group were not only more anxious than those in the ability test and no test groups. The MMPI subjects were also more self-preoccupied; their essays focused on needs, distress,
attacking, rejecting, danger, failure, uncertainty, foreboding, conflict, tension, justifying, strength, achieving, striving, defending, wanting and needing love, family duty and insecurity.

In addition to eliciting anxiety, personality test-taking may also direct one's attention inward and encourage self-evaluation. As a result, personality test-taking may orient the client in such a way that psychotherapy/counseling can be effective.

Haase and Ivey (1970), to a limited extent, have investigated the effects of personality test-taking on counseling. Specifically, they asked—what influence does the act of taking a personality test prior to counseling have on the measured outcome of that counseling? Student counseling center clients in the pretested groups were administered the Maladjustment scale (MT) of the MMPI (Kleinmuntz, 1960) and a unidimensional depression scale (D30) of the MMPI (Dempsey, 1964). This group was significantly better adjusted on posttest MT scores than the control group (p < .05). Nonsignificant differences were obtained with the three other outcome measures, possibly because the sample size was only 27. Alternatively, the MT difference was a result of students' familiarity with that specific instrument and possibly reduced personality test anxiety on retesting.
The intent of the present study is to determine the ways in which personality testing may affect counseling clients. The empirical literature reviewed herein suggests some effects that are relevant to counseling. Cognitive of physiological anxiety may be elicited in subjects by testing for a brief or sustained period of time. Related to anxiety arousal, testing may direct subjects' attention inward, away from their environment and onto themselves. Other variables have not been demonstrably affected by test administrations, but are very important to effective counseling: a commitment to return for further counseling, defensiveness, counselor core conditions, and other client perceptions of the counselor.

In the present experiment, these potential effects were measured on subjects who had completed a simulated counseling session and had been administered one of three personality tests or no test at all. The three test groups and the no-test group were compared on the above dimensions to assess the impact of the test administrations in a counseling analogue context.
Method

The purpose of the present investigation was to evaluate the effects of personality testing within a counseling analogue context. College students were interviewed for 20 minutes on their personal adjustment to life by trained psychology students. Subjects were subsequently administered a 22-minute form of either the Rorschach, the Minnesota Multiphasic Personality Inventory (MMPI), or the Strong Campbell Interest Inventory (SCII), or were administered no test at all. Finally, dependent measurements were made to assess the effect of the test administration on subjects' anxiety, direction of attention and reactions to the interviewer. The study answers Miller, Bohn, Gilden & Stevens (1968) call for research of personality test-taking effects in the counseling setting.

Subjects

Eighty female students from the undergraduate psychology classes at Iowa State University participated in the experiment.¹ Students received extra credit in their introductory level psychology courses in return for their participation. The sign-up sheet informed potential subjects that they would be interviewed regarding high school and college experiences and might complete several tests/questionnaires.¹

¹Procedural irregularities necessitated the dropping of three subjects; a fourth who did not respond to some of the inventory items was also dropped.
The description also stated that the interview would be tape recorded, that only females were permitted to participate, and that subjects might want to bring something else to do in case of a delay.

Procedure

Eighty female students ("clients") were interviewed, twenty by each of four male psychology students. Five students within each interviewer group were randomly assigned to one of four groups: Rorschach, Minnesota Multiphasic Personality Inventory (MMPI), Strong-Campbell Interest Inventory (SCII), and no test. Subsequent to each interview, but before the administration of one of the above tests, interviewers rated the subjects' anxiety on a seven-point scale. Finally, "clients" responded to the following dependent measures, listed in the order the subjects took them: a commitment to further interviews, perceptual direction of attention (Bush, Hatcher, and Mayman, 1969), present anxiety (Strahan, 1967), counselor core conditions (warmth, understanding, respect and friendliness), counselee expectations, subjects' feelings of security and uniqueness and perceived competence of the interviewer (Staltzman et al., 1976) the Guilford-Zimmerman Temperament Survey's Thoughtfulness Scale (Guilford and Zimmerman, 1949), a short-form of the Marlowe-Crowne Social Desirability Scale (M-C 1 (10); Strahan and Gerbasi, 1972), and anxiety during the test
(modified after Strahan, 1967). Subjects in the Rorschach, MMPI, and SCII groups also responded to a two-item measure of their test knowledge.

**Design and analysis.** A balanced, completely randomized factorial design was used with each dependent variable. The first, interviewer, factor was fixed and had four levels, the four individual interviewers. The second, test, factor was also fixed with four levels: Rorschach, MMPI, SCII and no test.\(^2\) Several studies reviewed in the introduction indicate that personality test-taking elicits state anxiety in less well-adjusted subjects high in trait anxiety. Therefore, a third fixed factor was included, initial manifest trait anxiety. The anxiety factor had three levels, interviewer ratings of: 1, 2, and 3, (low); 4 (medium); 5, 6, and 7 (high). These levels were chosen to minimize the number of degrees of freedom used by this factor and to balance the number of subjects at each level.

The reliability and validity of this interviewer rating has not been demonstrated. To obtain a better measure of trait anxiety would have meant administering lengthy tests to all subjects, a procedure likely to have nullified whatever

\(^2\)With the dependent measures of anxiety during the test (Strahan, 1967) there were three levels; these measures were not administered to the no-test group.
treatment effects might have been present. Consequently, factorial analyses were computed both with and without this third factor.

Multivariate analyses of variance were performed in order to detect complex effects and to control collective alpha error. Four tests of multivariate analysis of variance were performed: Hotelling-Lawley Trace, Pillar's Trace, Wilk's Criterion and Roy's Maximum Root procedures. The power and robustness of these test statistics vary with the correlational structure and distributions of the dependent variables (Olsen, 1976). The appropriateness of any one test statistic can be evaluated with respect to the other three.

Each multivariate analysis was performed with two and three independent variables. One set of analyses included all the dependent variables; another included all but those that the no test group did not respond to.

Interviewers. Four male undergraduates in advanced psychology classes were recruited as interviewers to increase the generalizability of the results. They were given training in using the interview script, practice with each other as "clients", and extensive practice on "real", pilot-study subjects. Wernimont (1974) has successfully removed interviewer differences in this way.

All interviews were recorded to insure that they were
carried out according to script. Ten per cent of the tapes were randomly chosen and checked by the experimenter.

**Interview.** Students came to a standard experimental room in the psychology building. There the interviewer greeted the student and showed her to the room they were to use. The interviewer asked the subject to read and consider signing an informed consent form (Appendix A) before beginning the interview. Appendix B contains the interviewers' script (Murphy and Strong, 1972) used to relate the study to the counseling situation.

To prevent a ceiling effect in the "clients'" ratings of the interviewers, the interviewers acted inattentive at times. When there was about 10 minutes left in the 20-minute interview (a clock was in view of the interviewer), the interviewer appeared to daydream while looking out the window for about 10 seconds or until there was a hesitation in the speech of the client, whichever came first. Approximately 5 minutes before the end of the interview, the interviewer looked at his watch long enough to determine the time. Kaufmann (1975) found such behaviors to be effective in reducing students' ratings of interviewer empathy.

At the end of the interview, the interviewer recorded his 7-point rating of the subject's manifest anxiety at the bottom of his note pad, out of the subject's view. The interviewer then placed his notes in a file cabinet and saw
for the first time specification of the treatment group to which the present subject had been randomly assigned.

Test manipulation. Following the interview, as stated, the subject was administered the SCII, MMPI, Rorschach or no test. If the no test control condition was specified for the subject, the interviewer said the following:

There is going to have to be about a 20 to 25 minute wait. You'll get credit for this time - so don't worry about that. You might want to listen to the radio (turned it toward her), read a magazine or the newspaper (pointed to them) or whatever. I'll be back in about 20 to 25 minutes.

The interviewer then left for a room down the hall, taking a notebook or book with him. If the subject asked why she had to wait, she was told that "We are trying to equalize the time that people spend in the experiment and we haven't got as much for you to do." If she asked what she would be doing at the end of the 20 minutes, she was told that she would observe a pinhole light source and answer some questions. If the SCII, MMPI or Rorschach were specified, the interviewer took the appropriate test out of the file cabinet and returned to the subject. In the SCII condition he said:

I'd like to find out more about your interests, especially as they relate to various types of jobs. I think this can best be accomplished by asking you to fill out this interest inventory - the Strong-Campbell Interest Inventory. It will help us understand you better. Use one of these number 2 pencils (takes one from the box) and you can sit right here (large room outside office). Use this response sheet rather than marking in the booklet and fill in the name grid. Let me know when you're finished - OK?
Abbreviated SCII booklets were used to equate testing times for the SCII, MMPI, and Rorschach at approximately 22 minutes. Ninety of the 325 SCII items were omitted from the total test; the same proportion of items were randomly chosen to be deleted from each section. Standard SCII answer sheets were used.

In the MMPI condition the interviewer said:

I'd like to find out more about your personality. I think this can best be accomplished by asking you to fill out a personality inventory – the Minnesota Multiphasic Personality Inventory.

The remainder was the same as in the SCII condition.

The MMPI form administered was the 166-item Faschingbauer Abbreviated Minnesota Multiphasic Personality Inventory (FAM) (Faschingbauer, 1974). As with the SCII, standard response sheets scorable by computer were used.

When the Rorschach was specified, the interviewer said:

I'd like to find out more about your personality. I think this can best be accomplished by asking you to take a personality test – the Rorschach.

The Rorschach was then administered by the interviewer in the interview office using the procedures advocated by Klopfer, Ainsworth, Klopfer, and Holt (1954). Enough cards were presented to make the testing time about the same as for the MMPI and the SCII, approximately 22 minutes. The Rorschach Administration Instructions are elaborated in Appendix C. When the subject finished the test she had
been assigned, the interviewer took the test materials from her, thanked her, and told her to see "Chris", directing her to the proper room at the other end of the building.

Dependent measures. Dependent measures included a commitment to further interviews, perceptual direction of attention (Bush, Hatcher, & Mayman, 1969), present anxiety (Strahan, 1967), counselor core conditions and expectations, subjects' feelings of security and uniqueness and perceived competence of the interviewer (Staltzman et al., 1976) the Guilford-Zimmerman Temperament Survey's Thoughtfulness Scale (Guilford & Zimmerman, 1949), a short-form of the Marlowe-Crowne Social Desirability Scale (M-C 1 (10)) (Strahan & Gerbasi, 1972), and anxiety during the test (modified after Strahan, 1967).

When the subject arrived at the dependent-measures room, the experimenter initiated introductions and asked subjects to return for further interviews.

Well, (subject's first name), we're trying to organize some more interviews, with the same subjects and the same interviewers. Your interviewer was (interviewer's first name), so he'd be yours for any further interviews. Now, they won't let us offer any more credit for more interviews, so this would be purely voluntary - but, these are the interview topics (handing the list to the subject). If you'd be interested in taking part in more interviews, check off the topics you'd be willing to discuss with (interviewer's name). The more topics you can check off, the more likely we'd be able to fit you into the schedule later. Also, write
down the total amount of time you'd be willing to spend. We're looking for anywhere between 15 minutes and 3 hours.

The list of 7 interview topics, found in Appendix D, was taken from the Intimacy Checklist (Tognoli, 1969), designed to measure the extent to which one person will match another on the intimacy level of his conversation. Each of The Intimacy Checklist statements describing areas of personal information had been rated on an 11-point scale for intimacy by 50 people. Dependent variables included number of interview topics checked, mean intimacy level of topics checked, and minutes committed to further interviews. These behavioral intention indices measure subjects' willingness to return for further interviews and discuss sensitive topics often dealt with in counseling.

Subsequent to those behavioroid (intentional) measures the subject was introduced to the perceptual measure of attention (Bush, et al., 1969). This was intended to evaluate Wine's (1971) hypothesis that test anxious subjects direct their attention inwardly. The subject observed a pinhole light source 9 feet away for 10 minutes in an unlighted room. She recorded the direction and extent of apparent movement in the pinhole light on a 13" by 16½" sheet of paper.

The questions that followed the subject's observation of the light (Appendix E) were designed to measure the extent
to which her attention was focused on herself rather than her surroundings. One set of questions focused on her loss of awareness of the experimental room while watching the auto-kinetic light. Another group of questions was intended to assess the degree to which the subject became immersed in subjective experiences (fantasies or reminiscences of past experiences).

Two persons listened to recordings of these question-answer sessions and rated subjects on a 1-to-5 scale for loss of awareness of the room and subjectivity using the rating guidelines of Appendices F and G respectively. Subjects who had been used to train the interviewer and the experimenter were also used to train the raters. The ratings included in the analyses were made independently.

Subsequent to the behavioroid and perceptual measurements, subjects responded to a series of paper-and-pencil measures. Strahan's (1967) measure of anxiety (Appendix H) was used because it taps two dimensions previously measured in test anxiety research, cognitive and physiological anxiety. The measure includes a total of three scales: Fluency (cognitive anxiety), Nervousness (physiological arousal), and Inadequacy.

Subjects' perceptions of the interviewers were measured with several 5-point and 99-point items. To determine
whether personality testing is, in fact, incompatible with the Rogerian goals of counseling, the first four 5-point items in Appendix I were included to measure counselor core conditions (warmth, understanding, respect, and friendliness).

Five of Staltzman, Luetgert, Roth, Creaser, and Howard's (1976) 99-point scales measured subjects' feelings of security, uniqueness, and ability to be open with the interviewer (items 6-10 in Appendix I). Items 11 and 12 assessed subjects' perceptions of the interviewers as being professional and incompetent.

The disruption of subjects' expectations may lead to anxiety. The fifth 5-point item measured the extent to which the experimental procedure was as the subjects expected.

In addition to the perceptual direction of attention measure, the Thoughtfulness Scale of the Guilford-Zimmerman Temperament Survey (Guilford & Zimmerman, 1949) was adapted to measure present disposition to reflect about oneself. Only items from the purified scale (Bendig, 1961) were used (Appendix J).

Test administrations asked subjects to reveal a great deal about themselves without any disclosure promised in return. The administration of the MMPI or Rorschach also may suggest to subjects that they have pathological qualities. To evaluate whether defensiveness increased under
the test conditions, a short-form of the Marlowe-Crowne Social Desirability Scale (M-C 1 (10)) (Strahan and Gerbasi, 1972), was administered (Appendix K).

Anxiety may vary among the test groups during the test administrations, even though no sustained effect is observed. Strahan's (1967) measure (Appendix H) was again administered, but referred to anxiety while taking the test, not present (after-test) anxiety.

Finally, the two items shown in Appendix L measured knowledge of the independent variable tests administered in the SCII, MMPI, and Rorschach groups. This measurement was to have permitted separate analyses on subjects who were knowledgeable of the test they had been administered. Such subjects may have more of an appreciation for the tests and they may be more sensitive to the experimental manipulation. Because small and uneven samples sizes resulted, these analyses were not carried out.
Results

Multivariate Analyses of Variance

There is a significant test effect (Table 1) for the two way multivariate Anovas with all the dependent variables included. The three anxiety-during-the-test measurements were not made on the no test group. Therefore, including all dependent variables requires the exclusion of these no test subjects. In a separate set of two way multivariate analyses with the dependent variables common to all subjects there are no significant effects.

Table 1

Multivariate Anova Table for Test Effect in Two-way Analysis with all Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotelling-Lawley Trace = 5.64</td>
<td>52, 38</td>
<td>2.06</td>
<td>.01*</td>
</tr>
<tr>
<td>Pillais Trace V = 1.38</td>
<td>52, 42</td>
<td>1.80</td>
<td>.03*</td>
</tr>
<tr>
<td>Wilks' Criterion L = .08</td>
<td>52, 40</td>
<td>1.93</td>
<td>.02*</td>
</tr>
<tr>
<td>Roy's Maximum Root Criterion = 4.32</td>
<td>2, 45</td>
<td>97.28</td>
<td>.03*</td>
</tr>
</tbody>
</table>

*Significant with $\alpha = .05$.
a third independent variable, there are no significant effects with all dependent variables. When the three test anxiety dependent variables are excluded the test by interviewer effect is significant with one of the three tests, the Hotelling-Lawley Trace (Table 2). The large differences in the "p" values for the three test statistics are probably due to the large number of dependent variables (25) and the small cell sample sizes resulting from the addition of the third independent variable with three levels. Olson (1976) recommends Pillai's Trace as the most appropriate small sample statistic, so little confidence may be placed in the single significant test statistic, the Hotelling-Lawley Trace.

Table 2
Multivariate Anova Table for Test by Interviewer Effect in Three-way Analysis with all Dependent Variables Common to all Groups

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>( F )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotelling-Lawley Trace</td>
<td>225, 65</td>
<td>1.47</td>
<td>.03*</td>
</tr>
<tr>
<td>Pillai's Trace ( V = 5.22 )</td>
<td>225, 163</td>
<td>.94</td>
<td>.67</td>
</tr>
<tr>
<td>Wilks' Criterion ( L = .00 )</td>
<td>225, 96</td>
<td>1.13</td>
<td>.25</td>
</tr>
</tbody>
</table>

*Significant with \( \alpha = .05 \).

3Tables of significance are not available for Roy's Maximum Root Criterion in the ranges required by this data.
Univariate Analyses of Variance

Retrospective reports of nervousness during the test vary significantly ($F(2,48) = 4.96, p < .01$) across test conditions in the two-way anovas (Table 3). Fourteen per cent of the variance in nervousness during the test accounted for by the test condition, with the interviewer factor and the interaction partialled out: $\eta^2 = .14$.

Table 3
Anova Table for Retrospective Report of Nervousness During Test Administration

<table>
<thead>
<tr>
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<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
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<td>Test</td>
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<td>4.17</td>
<td>2.09</td>
<td>4.96</td>
<td>.01*</td>
</tr>
<tr>
<td>Interviewer</td>
<td>3</td>
<td>.04</td>
<td>.01</td>
<td>.04</td>
<td>.99</td>
</tr>
<tr>
<td>Test * Inter</td>
<td>6</td>
<td>3.56</td>
<td>.59</td>
<td>1.41</td>
<td>.23</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>20.21</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant with $\alpha = .05$.

Scheffé's a posteriori comparison reveals that nervousness during the test is greater in the Rorschach group than in the combined SCII and MMPI group ($F(2, 48) = 9.30, p < .025$). The difference between the Rorschach mean and the combined SCII and MMPI mean is .83, almost one standard deviation.

4 The test effect has only 2 degrees of freedom because this dependent measure was not completed by control subjects.
Also in the two-way anovas, there are significant interactions between the test and interviewer factors with three Rogerian variables, warmth \( F(9, 64) = 2.21, p < .03 \), understanding \( F(9, 64) = 2.27, p < .03 \) and respect \( F(9, 64) = 2.25, p < .03 \), as well as one of the Staltzman items comfort with interviewer \( F(9, 64) = 2.46, p < .02 \).

In the three-way anovas nervousness during the test is again significantly affected by the test condition level \( F(2, 28) = 4.54, p < .02 \). The test by interviewer interaction is present only with one Rogerian item, understanding \( F(9, 36) = 2.63, p < .02 \), Table 4).

Analysis of responses to the Rogerian "understanding" item also reveal a significant interaction between the test condition and trait anxiety \( F(6, 36) = 2.93, p < .02 \), Table 4, Figure 1). This interaction determines 18% of the variability in the understanding measure. Simple main effects analyses indicate that understanding varies for high trait anxiety subjects across test levels \( F(3, 36) = 3.06, p < .05 \). Also, trait anxiety is a significant simple main effect for SCII subjects \( F(2, 36) = 5.06, p < .02 \).

The loss of awareness of the experimental room is dependent on a test by anxiety interaction \( F(6, 33) = 3.29, p < .01 \), Table 5, Figure 2). The interaction explains 20% of the variance in the loss of awareness measure. The significant simple effects include the test factor at both low and high trait anxiety levels \( F(3, 33) = 4.35,
Figure 1. Subjects' mean ratings of interviewer understanding
Table 4

Anova Table for Perception of Interviewer Understanding

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
<td>3</td>
<td>1.52</td>
<td>.51</td>
<td>1.06</td>
<td>.38</td>
</tr>
<tr>
<td>T at A (low)</td>
<td>3</td>
<td>3.01</td>
<td>1.00</td>
<td>2.10</td>
<td>ns</td>
</tr>
<tr>
<td>T at A (middle)</td>
<td>3</td>
<td>2.55</td>
<td>.85</td>
<td>1.77</td>
<td>ns</td>
</tr>
<tr>
<td>T at A (high)</td>
<td>3</td>
<td>4.39</td>
<td>1.46</td>
<td>3.06</td>
<td>.05*</td>
</tr>
<tr>
<td>Interviewer</td>
<td>3</td>
<td>1.35</td>
<td>.45</td>
<td>.94</td>
<td>.43</td>
</tr>
<tr>
<td>Anxiety</td>
<td>2</td>
<td>.61</td>
<td>.31</td>
<td>.64</td>
<td>.53</td>
</tr>
<tr>
<td>A at T (no test)</td>
<td>2</td>
<td>1.80</td>
<td>.90</td>
<td>1.88</td>
<td>ns</td>
</tr>
<tr>
<td>A at T (SCII)</td>
<td>2</td>
<td>4.84</td>
<td>2.42</td>
<td>5.06</td>
<td>.02*</td>
</tr>
<tr>
<td>A at T (MMPI)</td>
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<td>1.00</td>
<td>.50</td>
<td>1.05</td>
<td>ns</td>
</tr>
<tr>
<td>A at T (Rorschach)</td>
<td>2</td>
<td>1.39</td>
<td>.70</td>
<td>1.45</td>
<td>ns</td>
</tr>
<tr>
<td>Test * Inter</td>
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<td>11.34</td>
<td>1.26</td>
<td>2.63</td>
<td>.02*</td>
</tr>
<tr>
<td>Test * Anx</td>
<td>6</td>
<td>8.43</td>
<td>1.40</td>
<td>2.93</td>
<td>.02*</td>
</tr>
<tr>
<td>Inter * Anx</td>
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<td>2.77</td>
<td>.46</td>
<td>.96</td>
<td>.46</td>
</tr>
<tr>
<td>Test * Inter * Anx</td>
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<td>4.81</td>
<td>.44</td>
<td>.91</td>
<td>.54</td>
</tr>
<tr>
<td>Error</td>
<td>36</td>
<td>17.25</td>
<td>.48</td>
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<td></td>
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</table>

*Only those simple effects of interest are presented.

*Significant with α = .05.
Table 5
Anova Table for a Perceptual Direction of Attention Measure, Loss of Awareness of the Experimental Room

<table>
<thead>
<tr>
<th>Source</th>
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<td>13.17</td>
<td>4.39</td>
<td>1.83</td>
<td>.16</td>
</tr>
<tr>
<td>T at A (low)</td>
<td>3</td>
<td>31.35</td>
<td>10.45</td>
<td>4.35</td>
<td>.02*</td>
</tr>
<tr>
<td>T at A (middle)</td>
<td>3</td>
<td>8.09</td>
<td>2.70</td>
<td>1.12</td>
<td>ns</td>
</tr>
<tr>
<td>T at A (high)</td>
<td>3</td>
<td>21.15</td>
<td>7.05</td>
<td>2.93</td>
<td>.05*</td>
</tr>
<tr>
<td>Interviewer</td>
<td>3</td>
<td>12.94</td>
<td>4.31</td>
<td>1.79</td>
<td>.17</td>
</tr>
<tr>
<td>Anxiety</td>
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<td>8.00</td>
<td>4.00</td>
<td>1.66</td>
<td>.20</td>
</tr>
<tr>
<td>A at T (no test)</td>
<td>2</td>
<td>7.06</td>
<td>3.53</td>
<td>1.47</td>
<td>ns</td>
</tr>
<tr>
<td>A at T (SCII)</td>
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<td>26.68</td>
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<tr>
<td>A at T (MMPI)</td>
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<td>15.81</td>
<td>7.91</td>
<td>3.29</td>
<td>.05*</td>
</tr>
<tr>
<td>A at T (Rorschach)</td>
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<td>2.94</td>
<td>1.22</td>
<td>ns</td>
</tr>
<tr>
<td>Test * Inter</td>
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<td>38.54</td>
<td>4.28</td>
<td>1.78</td>
<td>.11</td>
</tr>
<tr>
<td>Test * Anx</td>
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<td>47.42</td>
<td>7.90</td>
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</tr>
<tr>
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<td>.20</td>
</tr>
<tr>
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<td>1.94</td>
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</tr>
<tr>
<td>Error</td>
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<td>79.33</td>
<td>2.40</td>
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</table>

aOnly those simple effects of interest are presented.

*Significant with α = .05.
Figure 2. Mean loss of experimental room awareness ratings
significant main effect for trait anxiety \( F(2, 35) = 3.84, p < .04, \) Table 6). Nine percent of the variance in subjectivity is accounted for by the trait anxiety classification. The difference between the low trait anxiety mean and the mean of the moderate and high trait anxiety groups is .64 standard deviation.

**Table 6**

Anova Table for a Perceptual Direction of Attention Measure, Degree of Increased Subjectivity

<table>
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<tr>
<th>Source</th>
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<td>.93</td>
<td>.30</td>
<td>.83</td>
</tr>
<tr>
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<td>1.07</td>
<td>.38</td>
</tr>
<tr>
<td>Anxiety</td>
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<td>24.25</td>
<td>12.12</td>
<td>3.84</td>
<td>.04*</td>
</tr>
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<td>6.69</td>
<td>2.12</td>
<td>.06</td>
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<td>36.06</td>
<td>6.01</td>
<td>1.90</td>
<td>.11</td>
</tr>
<tr>
<td>Inter * Anx</td>
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*Significant with \( \alpha = .05 \).
Correlations

Wine (1971) hypothesized that cognitive test anxiety coincides with attention being directed inward. The Fluency Scale may most appropriately be labeled cognitive anxiety, subjects high in cognitive anxiety score low on the Fluency Scale. Table 7 shows that Fluency's correlations and the correlations of the other anxiety scales with the attentional measures tend to be negative.

Measurement reliability and validity. Cronbach coefficient alpha measures of scale homogeneities (Table 8) ranged from .64 to .94.

The correlation between the loss of awareness ratings of the two raters was .65. The increased subjectivity ratings of the two raters correlated .71. The means of these perceptual direction of attention measures, loss of awareness and increased subjectivity, correlated .56 with each other. The correlations of the loss of awareness mean and the increased subjectivity mean with the paper and pencil thoughtfulness scale were .17 and .18 respectively.
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*Significant with α = .05.
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**Power**

Table 9 contains the power values for main effects and interactions in both the two-way and three-way anovas. The probabilities were obtained by entering Cohen's (1977) power tables with four determining values: the significance criterion (α), the degrees of freedom of the numerator of the F ratio, the effect size, and the sample size (a function of the cell sizes involved).
Table 9
Power for Main Effects and Interactions
with $\alpha = .05^a$

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$^a$Equal ns were assumed.

$^b$Cohen (1977) has designated the 1, 6, and 14 per cent levels as small, medium and large effects respectively.

Of primary concern is the power of detecting two-way anova main effects. Power values ranged from .09 to .94 for these effects, depending on effect size.
Discussion

While the test condition did have an overall effect on the matrix of all dependent variables, there appear to be few strong effects of personality testing within this counseling analogue context.

There is very limited support for Roger's (1961, 1942, 1951) and Meador and Rogers' (1973) reservations regarding research and diagnostic testing. There were no significant main effects for the Rogerian or Staltzman measures. The power of detecting main effects which account for 14% of the variance was .78. Such effects, if they exist, are probably not large. There were significant statistical interactions with some of the Rogerian and Staltzman measures. Subjects' ratings of counselors' understanding were dependent upon subjects' trait anxiety levels and the test conditions. High anxiety subjects saw their interviewer as more understanding when the interviewers pursue the subjects' interests in a nontargeting fashion by administering the Strong-Campbell Interest Inventory (SCII). These subjects were uncomfortable disclosing in an interpersonal situation. The interest inventory must have been a relief to them.

Under the stressful MMPI and Rorschach administration conditions the high and average trait anxiety subjects saw
the interviewers as less understanding than the low trait anxiety subjects. Newmark, Hetzel, and Frerking (1974) also found high trait anxious subjects to react more negatively under stressful conditions (Rorschach and Thematic Apperception Test) than low trait anxious subjects. In the Newmark, Hetzel, and Frerking (1974) study the negative reactions consisted of increased state anxiety. In the present investigation, the lower understanding ratings by the higher trait anxiety subjects may reflect responses of, "I may have been somewhat nervous during the interview, but I don't have the severe problems this test is intended to detect. The interviewer really misread me!" Low anxiety subjects perhaps did not entertain the notion that the MMPI or Rorschach were selected in response to problems in their personalities.

The test and interviewer conditions jointly affected ratings of warmth, understanding, respect and comfort with the interviewer. Apparently the differences among interviewers were not eliminated by training. The dimensions on which interviewers differed are not known. Tests can affect these Rogerian and Staltzman variables, but it is not clear what counseling conditions the tests must be combined with to have their effect.

Among the anxiety measures, nervousness during the test
scale yielded a significant test effect. Rorschach administration subjects reported greater nervousness than MMPI and SCII subjects. Similar results have been reported for college students (Newmark, Hetzel, and Frerking, 1974) and for schizophrenics (Newmark, Ray, Lyman, and Paine, 1974)—state anxiety was increased by taking the Rorschach, but not by taking the MMPI.

Why were there no significant main effects for the "present anxiety" scales? Just prior to their administration the perceptual attention measure was administered. Subjects observed a pinhole light in an otherwise darkened room, recorded its movement and later answered questions. A few subjects told the experimenter that they were afraid of the dark; a few others denied being afraid in the absence of any questions to that effect. Some subjects said that they thought something unexpected would happen like someone jumping out from a hidden area. The anxiety generated by the perceptual measure may have diluted the effects of the Rorschach, MMPI, and SCII. In fact, reported nervousness for the MMPI and SCII groups was greater for the present measure than for the retrospective, "during the test" measure \( t(38) = 3.06, p < .01; t(38) = 2.74, p < .01 \). Parallel inadequacy levels were reported for these two groups \( t(38) = 2.21, p < .05; t(38) = 2.73, p < .01 \).

In addition, Doctor and Altman (1969) have demonstrated
that subjects are nervous just before and during the stressful event of taking a test and that this physiological arousal subsides soon after the test administration. The same diminution occurs whether or not the test results are given to the subject (Morris & Fulmer, 1976).

In order to eliminate some biasing effects the design of this experiment was less powerful than others in several respects. It was a between-subjects design, whereas the three Newmark studies, and the studies by Windle (1955) and Jacobs and Leventer (1955) were within-subjects designs. Windle's (1955) power for detecting an effect that accounts for 16% of the variance was .985. The correlations between the pre- and post-measures were not given by Newmark or Jacobs and Leventer (1955), so power cannot be accurately calculated for these four studies. But even without taking into account these correlations, which would increase power, the estimates for Newmark's studies are close to the value obtained for Windle's (1955) study.

The Miller et al. (1968) study is distinctive in that it is a between-subjects design. The power of detecting an effect which accounts for 16% of the variance was .63, less than the value of .78 for the present study.

The necessary information for calculating the effect size was provided by Windle (1955). Sixteen percent of the
variance in the Taylor Anxiety Scale was due to the decline in scores upon re-administration of the MMPI. Though power values were large for most of the published personality test anxiety studies, it is not clear that such values are necessary. The power of detecting Windle's (1955) effect size in the present investigation is .83.

The use of shortened test forms may have weakened the effects of the present study's test administrations. Most notably, the MMPI was shortened from 566 items to 168 items. Miller, et al. (1968) and Jacobs and Leventer (1955) used abbreviated forms of the MMPI and observed test anxiety effects. But neither the names of the forms nor the number of items in the forms are reported.

The experimental manipulation of the Newmark studies included the expectation of feedback, increasing the ego involvement of the subjects. If the present study had included this feature, fluency as well as nervousness scores may have been affected by the test conditions. Still, Miller et al. (1968) found the MMPI without feedback to affect anxiety, where anxiety seemed to be largely cognitive. Jacobs and Leventer (1955) and Windle (1955) also detected changes in general anxiety without feedback.

The significance of the test administrations may have been further influenced by the informed consent form each
subject signed at the beginning of the experiment. These forms may have impressed the subjects with their anonymity and thereby reduced the effects of testing. On the other hand, the necessity of signing the forms may have impressed subjects with the stressful nature of the experiment. Subjects made comments at the completion of the experiment to support both hypotheses. Perhaps the Rorschach had a greater effect on nervousness than the MMPI because subjects could not remain anonymous with respect to the responses they made to the interviewers/testers.

The ambiguity of the Rorschach may also explain its effect. Fiske and Kuncel (1972) suggested that the ambiguity of personality inventories might explain subjects' apprehension in responding to them. The Marlowe-Crowne Social Desirability (MCSD) instrument (Crowne & Marlowe, 1964) elicited more apprehension, criticisms of self and criticisms of the test than the Thurstone Embedded Figures or the Similes Preference Inventory (Pearson & Maddi, 1966). Sixty-seven per cent of the subjects taking personality inventories like the MCSD found them ambiguous, but only 15% described the Thurstone or the Similes tests as ambiguous. Rorschach ambiguity ratings were not provided, but the very nature of the Rorschach is to present stimuli to subjects which can be perceived in a myriad of ways.
Perceptual direction of attention was affected by the experimental conditions. The loss of awareness of the experimental room was affected by the interaction between trait anxiety and test condition. Mandler and Sarason (1952), who first developed achievement test anxiety theory, and Wine (1971), who has elaborated on this theory, have hypothesized that highly test anxious subjects focus their attention inwardly. There is very limited support for this hypothesis in these data. Among the high trait anxiety subjects, the MMPI subjects lost awareness of the environment more than the SCII subjects. The MMPI may have produced more anxiety and concomitantly focused attention inward.

The Wine (1971) hypothesis does not explain why loss of awareness for the moderate and low trait anxiety subjects was high under the SCII conditions and low with the MMPI administration. It seems that tests which relate to the subjects' own experience cause them to direct their attention inward. All subjects discussed their interests, values and attitudes with the interviewers. The SCII may have encouraged the moderate and low anxious subjects to attend to these positive dimensions. Though the high anxiety subjects also discussed these characteristics, they also communicated anxiety to the interviewers. This anxiety may have been more important to them than their interests. The
first factor of the MMPI has been interpreted as anxiety (Welsh, 1956; 1965). That inventory, therefore, matched the experience of the high anxiety subjects.

The other perceptual direction of attention measure was increased subjectivity. Low trait anxiety subjects were higher on the subjectivity measure than the moderate and high trait anxiety subjects. The low anxiety subjects probably felt freer to be open about themselves. They were less inhibited in relating their fantasies to the experimenter.

While the loss of awareness Anova partially supports Wine's (1971) hypothesis, the correlations between the direction of attention measures and the anxiety measures are not positive as would be predicted. Perhaps the more anxious subjects felt more threatened and were more defensive. Defensive subjects would not admit to losing awareness of their surroundings or be open about their thoughts and fantasies.

Summary

Personality tests can elicit psychological effects as well as measure them. Anxiety is the effect of personality testing that has been studied previously and that was found to be dependent upon the experimental test conditions in this study. However, the effect was restricted to nervousness being elevated during the Rorschach administration.
Fluency (cognitive anxiety) was not significantly affected and nervousness did not persist.

Direction of attention may be influenced by test administrations. It appears as though selecting tests which match subjects' present experiences may lead clients to focus their thoughts more on themselves.

Finally, tests may interact with the counselor in affecting clients' comfort and their perceptions of counselors' warmth, understanding, and respect for them. The relevant counselor variables have not been uncovered.
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Appendix A

Informed Consent:

I understand that I am participating in a psychology experiment; that I will be interviewed regarding high school and college experiences and may complete several tests/questionnaires. Later, I will observe a pin hole light source and report on my experience. The information obtained from this experiment will be useful to counselors, clinical psychologists and psychiatrists. I understand that I may ask the experimenter questions and may withdraw from the experiment at any time and still receive credit. I understand that all data obtained in this experiment are confidential.
Appendix B

Interviewer Procedure:

Come to 223F in good slacks and a dress shirt two or three minutes before the hour you are to interview.

If the subject is already there tell her that you will be with her shortly. "Did you come for experiment 39?" . . . "Thanks for coming." Initiate introductions. Then, "I'll be with you in just a few minutes."

If the subject comes while you are in the experimental room and it is not yet time to start tell her the same as above.

Use the window to adjust the temperature.

If the last interviewer left a tape in the recorder, mark the day and time you think it was used on the tape and put it in the back of the top file drawer.
Take a tape from the table and put it in the recorder.

Check your file folder for messages.

(Say subject's name), "We'll be using this room - right here."
Comment on weather if filler is needed. "Have a chair."

"Before we start I need to have you read this consent form and sign it." Adjust window so that subject actually has time to read the form. It's important that she read it.

"I'd like to start with the interview - when we've completed that I'll have a better idea of what would be the best test or questionnaire to give you."
If they ask what you mean - "Well, some tests are more appropriate for some people than for others. After I get to know you a little bit I'll have a better idea of which test would be most appropriate."

"The main purpose of this interview is for us to get a good idea of how your particular college experiences may have affected you. It is necessary that we record all these interviews so that we have an accurate record of the experiences of various students. These tapes will be used for the purpose of coding student reactions."

"I guess the best way to accomplish this task is first of all for you to relate in your own words what your friends were like before college. Then we will try to get an idea of how you may have been affected by your experiences in college."

"My role is to help you talk about this. I will ask questions and make comments from time to time in order to better understand what your various thoughts and experiences mean to you."

"Well, are we ready to go ahead. . . ."

The structure and content of these interviews should be as much alike as is possible from one student to another. Try to keep the questions open-ended and cover each topic area in sufficient depth to fill the interview time. The only general difference between the interviews should be how far through the set structure experimenter gets with each subject. Of course, in all interviews experimenter should at least begin to cover how college has affected all of the things subject has previously told him.
The interview structure and content is as follows:

I. Acquaintances: (Interview proper begins with a general, open-ended question to indicate to subject at the outset that this is not a question-answer session.)

"Okay, why don't we start at the beginning? (Subject's first name), what picture of college life did you have before your first experience with college?" If subject hesitates, give him some more specific cues - how did he think college students lived, thought, acted.

A. Pre-college

"Could you give me some idea of what your circle of friends was like before you started college?"

Topic suggestions:
1. Things he and his friends like to do
2. Dating
3. Friends' plans for college
4. Friends' choices of what to do after high school and how this affected his choices.

B. College

"What if any, changes have taken place in the people or kinds of persons you are friendly with since you entered college?"

(In the second section of the interview it is logical that, if subject says "yes" to any of the changes after college experiences, experimenter should spend some time exploring changes have had on his life. Also, experimenter should tie in information from the first part of the interview while covering these points again.)

Topic suggestions if subject answers "yes":
1. How are these two sets of friends most different?
2. What do you and your friends do now?
3. Dating.

Topic suggestions if subject answers "no":

1. How has your circle of friends managed to stick together?
2. What do you and your friends do now?
3. Have your friends changed (do they look at things differently)?

II. Attitudes and Values:

A. Pre-college

"In your own words how would you characterize your attitudes and values in general before you came to college?"

Topic suggestions:

1. Political attitudes.
2. The Armed Forces.
3. The relation between authority and individual conscience.
4. How one should live his life.
5. The value of education.

B. College

"How might your attitudes and values have changed due to the college experience?"

Topic suggestions if subject answers "yes":

1. How did you come to these new thoughts, opinions of yours (friends, courses, teachers)?
2. How have these new opinions of yours been reacted to by your old friends, parents, relatives?
Topic suggestions if subject answers "no":

1. How did you manage to maintain your original attitudes and values in an environment where many writers claim such things are subject to change?

2. How are these attitudes and values reacted to by fellow college students?

III. Future Plans and Goals:

A. Pre-college

"What, if any, plans for the future or life goals did you have before college?"

Topic suggestions:

1. Educational-vocational goals.

2. Specific contributions you may have wished to make to science, serving people, posterity.

3. What you saw as the "good life."

B. College

"How would you generally characterize the effect of college on your future plans and goals?"

Topic suggestions if subject answers "yes":

1. What contributed to these changes (teachers, courses, counselors, friends)?

2. What effects did these changes in plans have on your parents, relatives, friends?

Topic suggestions if subject answers "no":

1. How do you account for the stability of your plans and goals?

2. What is the effect of the stable plans and goals on your social life, friends, study habits?
IV. Interest:

A. Experimenter attentive to subject; listens carefully with full attention directed to subject.

B. Position is relaxed, but alert.

C. Facial expression is one of interest, responsive to what subject is saying.

D. Voice tone shows interest, liveliness.

E. Comments follow what subject is saying and show understanding and interest.

F. Responds verbally, often and appropriately (does not let student drone on without reinforcement).

G. Carefully follows subject's mood (joy, discontent, anxiety . . .).

V. Questions:

A. Questions appear spontaneous, have focus, logical progression, and aim; accomplished by forming questions that either:

1. Reflect some of the content or meaning of subject's comments (ideally his personal outlook), pick up some aspect and seek further discussion of the statement, or

2. Develop a new line of conversation - in this case he precedes the question with transition, e.g. comments on subject's last statement, rationale for new area, probe into new area.

B. Experimenter speaks clearly, fluently, with sureness, confidence (but with humility).

C. Has conversational style: not question after question, but intersperses with comments, reflection, and self-references.
VI. Conduct of the Interview:

A. Knowledge: experimenter appears knowledgeable about the experiences of college students. This knowledge is made known by:

1. At times responding to subject's questions with information relevant to subject's comments.

2. Making statements about subject's experiences, attitudes, values, and plans as they might compare with the "typical" college student some people talk and write about.

B. Experimenter's participation: In general, experimenter is confident, sincere, frank, unhurried, "smooth," channels conversation well, takes a somewhat active part in facilitating subject's conversation.

1. He is responsive to subject's statements both verbally and nonverbally.

2. He makes the conversation effectively channeled by structuring, commenting on meaning and direction of remarks.

3. His questions are smooth, arise naturally out of subject's remarks or, if they change the subject, he gives adequate transition.

C. Preparation, appearance, atmosphere: Neat, but not stuffy; good slacks and dress shirt, friendly, casual, relaxed, no stuffiness, talks on the student's level, treats subject as equal. Good pleasant speaker, personable. Posture relaxed but not sloppy. Relaxed but attentive, on his toes. Carried off by:

1. Greeting student warmly.

2. Assuming a comfortable but attentive sitting position.

3. Calling subject by first name.

4. Position of arms and hands relaxed, unobtrusive.
5. Keeps attention on student, facial expression warm, reactive to student; smiles.

6. Uses hands to emphasize some points - not overdone.

7. Smokes only when subject does - interviewer offers cigarette if he wishes to smoke; does not smoke if subject declines.

8. Speaks with confidence, sureness, but humility; very attentive and responsive to student.

9. Obvious enthusiasm portrayed by inflection of voice; facial cues; gestures.

10. About half way through the interview gaze out the window for about 10 seconds or until the subject's speech hesitates. (This is programmed inattentiveness so you aren't perfect.)

11. Take about a third of a page of notes during the interview.

The interview should be approximately 20 minutes long. At the end of the interview, rate the subject's anxiety:

7 is extremely anxious
6
5
4 is average
3
2
1 extremely unanxious

Record your rating on your notes. This rating will be used in the analysis. Take at least 15 seconds to think about this so that it is obvious to the subject that you are giving some thought to what went on in the interview. This is important.

Squat in front of the file cabinet to put your notes in back of the day's file folder. Check the testing procedure for your hour (in that same file folder).
Take the appropriate test out of the file drawer on top.

If SCII: "I'd like to find out more about your interests, especially as they relate to various types of jobs. I think this can best be accomplished by asking you to fill out this interest inventory - the Strong-Campbell Interest Inventory. It will help us understand you better. Use one of these number 2 pencils (take one from the box) and you can sit right out here (large room). Use this response sheet rather than marking in the booklet and fill in the name grid. Let me know when you're finished - OK?"

Turn off the tape recorder and put the tape in the back of the top file drawer.

Wait in 223F for subject to take the test.

When she finishes, take the test booklet, response sheet, and pencil from her, thank her and tell her to see "Chris" in room 203F - go all the way down to the end of the hall, take a right and its the second door on your right.

If MMPI: "I'd like to find out more about your personality, I think this can best be accomplished by asking you to fill out a personality inventory - the Minnesota Multiphasic Personality Inventory." Same as with SCII from here.

If Rorschach: "I'd like to find out more about your personality, I think this can best be accomplished by asking you to take a personality test - the Rorschach. Give it in 223F. Continue to tape.

If NO TEST: "There is going to have to be about a 20 to 25 minute wait. You'll get credit for this time - so don't worry about that. You might want to listen to the radio (turn it toward her) - read a magazine or the newspaper (point to them) or whatever - I'll be back in about 20 to 25 minutes." Then, go to room 209. Bring some notebook or book with you.
If she asks why she has to wait - tell her that we are trying to equalize the time that people spend in the experiment.

We haven't got as much for you to do.

If she asks permission to make a short errand - tell her she may - but don't bring it up.

If she asks what she'll do at the end of the 20 minutes - tell her she'll answer a few questions and that it will take about 5 minutes.

Later direct the subject to my office.
Appendix C

Rorschach Administration Instructions:

Introduction:

I'd like to find out more about your personality, and I think this can best be accomplished by asking you to take a projective personality test, the Rorschach. It will help us to understand you better.

If the subject wants to know why she is being asked to take the test, say that:

It's part of an overall attempt to evaluate what goes on inside of you and between you and other people. We want to try to relate these intrapsychic phenomena with your social world.

In order to properly evaluate your responses I need some preliminary information. How old are you? What year in school are you? Are you married? - OK, we're ready to go ahead now.

Also record the date and time (to the minute) of administration, and the examiner.

This test consists of several inkblots. I'll show them to you, one at a time, and I'd like you to tell me what they remind you of, what they might represent, or what they could be.

There are no right or wrong answers, just tell me what comes to your mind when you look at them.

Present cards to the subjects in the following order: IV, III, VI, II, I, V, VII, VIII, IX, and X. Lay the card on the table in front of the subject and say, "Here is the first card". Discourage a conversation between the subject and yourself at this phase. Questions that the subject might
raise include: "May I turn the card? Should I just tell you what I see or use my imagination? Should I tell you what comes to mind immediately or think it through?" etc. Answer either, "That is entirely up to you", or "You may do it any way you like". If a subject goes on indeﬁnitely with the production of responses, say: "We are not particularly interested in seeing how many responses you can give, but in the ﬁrst few impressions you have".

Initial Recording:

For the initial recording of responses, use the white lined tablets of paper on the clip board (underneath the Individual Record Blank). Divide the paper lengthwise into two sections - the left for the performance proper and the right for the inquiry. Record the following on the lined paper:

1. Card number: I, II, III, etc.
2. Response number: 1, 2, 3, etc.
3. Reaction time: Number of seconds between the time the card is presented to the subject and the ﬁrst response of the subject.
4. Position: Use the symbols,\(\wedge \checkmark \langle \rangle\), the apex indicating the top of the card as it is held by the subject when she gives her response.
5. Response: Record responses on the left side of the paper. An elaboration or addition should be recorded in the "inquiry" section. If a new response is given during the inquiry, record it in the inquiry section and continue numbering (e.g. 5, 6, etc.).
6. Use the Location Chart (page 4 of the individual Record Blank) to show the area of the blot used by the subject as a basis for the response. Outline the area used and number it with the same number as the response. If the whole blot is chosen, write "w" after the response.

The Inquiry:

Location: Ask the subject to describe the parts of the concept perceived and to account for various areas of the blot whose use by her seems questionable to you. With one card per subject ask her to trace her response on onionskin paper.

Determinants: The question here is, "What determined the subject's perception of the blots". Your questions should be general so that you do not put some idea into the subject's head. Use questions like this: "What about the blot gives you the impression of a . . .? What about the blot made you think it was a . . .? Describe the . . .? Tell me more about it."

Scoring:

Scoring on the Individual Record Blank is done for each card immediately after the inquiry.
First column: Record the car number (e.g. "I", "II", etc.), response number ("1", "2", etc.), and card position (e.g., "", "", etc.).

Second column: Record the reaction time, the time in seconds from the card presentation to the first response.

Location: The five categories are:

1. "W", or whole responses. All or nearly all of the blot is used.

2. "D", or large usual detail responses. Using large parts of the blot which are marked off by the Gestalt qualities of the blot itself, either by space, by shading, or by color.

3. "d", or small usual detail responses. Using smaller parts of the blot marked off by the Gestalt qualities of the blot itself, either by space, shading or color.

4. "Dd", or unusual details. The part of the blot used is not classifiable as either a large or a small usual detail.

5. "S", or white space responses. The white background becomes the figure and the chromatic or shaded area the background.

If the main response used the whole blot, write capital "W" in the first location column. If the main response was a large detail, write "D" in the second location column, and so on. If an additional response was given write the appropriate letter (e.g. "W") in the fourth location column.
Determinant: Again record only one main determinant for each main response. If movement seemed to be most important, write "m" or "M" in the movement column. If shading has contributed to a depth effect, write "vd", "Vd", "vD", or "VD" in the vista depth column. If none of the other determinant categories seem to apply, the concept is determined only by the shape of the blot, write "f" or "F" in the form column. If the texture (e.g. fuzzy, soft, downy) was important, write "t" or "T" in the fourth column and if the achromatic color (i.e. white, gray, or black) was the most significant feature, write "ac", "Ac", "aC", or "AC" in the fourth column. If color was most important, write "c" or "C" in the fifth determinant column. If an additional response was given, write the appropriate letter (e.g. "m") in the last determinant column.

Content: Use two letter symbols in the "main" or "add." columns to represent the content (e.g. human, sex, animal, nature concepts, geography) of the response. Choose symbols that make sense to you.

Popularity-Originality: If the response seems like a popular response, one that many people might give, write "P" or "p" in the "main" column. On the other hand, if the response seems unusual, original, write "o" or "O" in the "main" column.
Form Level Rating: Does the response seem to actually fit the blot? Does the subject accurately specify or elaborate in a detailed fashion the structure of the blot used? Are her specifications organized and meaningful? If these questions can be answered strongly in the affirmative, assign a form level rating of 5.0. If a strong "no", assign a -2.0. Average is 1.0. Any of the numbers may be used: -2.0, -1.5, -1.0, . . . 4.0, 4.5, 5.0.

Additional Symbols: About 1 out of 5 times you record the location, determinant, content, or Popularity-Originality use the symbol " " to point from the letter(s) you've just written to another letter you've chosen from the words at the top of the page. Also, choose letters to use as subscripts about 1 out of 5 times. With about the same frequency use "( )" and "'" (the latter is a prime).
Appendix D

Form for Commitment to Further Interviews:

Interviewer______________________________
Name______________________________ Phone______________________________

Please check acceptable interview topics:

_____ My favorite teachers.

_____ The most boring and unenjoyable aspects of college.

_____ My favorite subjects in school.

_____ What my parents did while raising me.

_____ Things I dislike about my mother.

_____ The aspects of by personality that I dislike, worry about, or regard as a handicap to me.

_____ My love life.

Amount of time you would be willing to spend being interviewed?______________________________
Questions for the Perceptual Direction of Attention Measures:

**Loss of Awareness of the Experimental Room:**

1. Can you remember your impressions of the room as you were watching the light?

2. To what extent did you remain aware of some of the thighs in the room?

3. Did the room seem different to you?

4. To what extent did it seem like a room at all? Did it seem like you were in an enclosure?

**Increased Subjectivity:**

1. What did the light make you think of?

2. Many people fantasize while they watch the light — did you find yourself fantasizing? What about?

3. When it seemed like you were watching a __________, where did you seem to be watching from?

4. What other thoughts passed through your mind during the time you were looking at the light?
Appendix F

1-5 Rating Scale: Loss of Awareness of the Room:

5 Points: Subject loses all sense of the room she is in and typically (but not always) feels she is outdoors on a dark night or out in unbounded space. This experience must have some duration rather than being a fleeting impression.

4 Points: Subject's experience approaches the five level but fails slightly short of it in one or more respects.

3 Points: There is a marked change in the subject's experience of the room but she does not lose all sense of it. In this category would belong instances in which the subject loses the sense of being in a room for a very brief time but for the most part remains fairly well aware of being enclosed in a room. In this category would also belong such responses as just not having paid any attention to the room without actually losing the sense of being in a room.

2 Points: There is evidence for some minor but definite changes in the experience of the room or a relative absence of attention to the room.

1 Point: Subject reports continued awareness of the actual size, shape, and contents of the room. Included here would be those responses in which the subject first indicates that the room did not seem any different and then offers (under further questioning) as an unconvincing "possibility" some slight alteration in the apparent size of the room.
Appendix G

1-5 Rating Scale: Degree of Increased Subjectivity:

Base your rating on the degree to which the subject enters into a subjective experience, i.e., becomes attentionally absorbed in imagining herself someplace else. A subject could receive a high rating on this dimension without demonstrating any primitivization in her thinking. One might, for example, simply have reported re-experiencing a vivid memory of camping out and watching the stars at night.

5 Points: The autokinetic test is incorporated into a highly subjective experience which is both rich in visual imagery as well as extended in time (i.e., more than a fleeting impression). The subjective transformation of the autokinetic test may occur principally in the experience of the room or principally in the experience of the light.

4 Points: The autokinetic test is incorporated into a highly subjective experience, but it falls short in one of several ways of the definition for a 5 rating (e.g., it may fall short in intensity, duration, or vividness of imagery).

3 Points: There is some definite evidence for increased subjectivity but it is quite moderate, restrained, and relatively brief. The accent may be on the "feeling tone" rather than upon imagery or fantasy.

2 Points: There is only very slight but yet definite evidence that at some point the subject departed from the realistic experience of the light and the room in a mild or minor subjective transformation of the autokinetic test.

1 Point: There is no or almost no evidence for increased subjectivity. The subject thinks about the autokinetic test in realistic terms and reports thoughts rather than an imaginary experience.
Appendix H

Anxiety Measure:

For each of the following items, there are five possible responses: (1) Not at all, (2) Slightly, (3) Moderately, (4) Very, and (5) Extremely. Please indicate the way you feel now by writing the appropriate number in the space provided for each item.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>__Feel uneasy</td>
</tr>
<tr>
<td>2.</td>
<td>__Heart races</td>
</tr>
<tr>
<td>3.</td>
<td>__Feel shaky</td>
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<tr>
<td>4.</td>
<td>__Feel pleased</td>
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<tr>
<td>5.</td>
<td>__Feel energetic</td>
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<tr>
<td>6.</td>
<td>__Feel sad</td>
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<tr>
<td>7.</td>
<td>__Feel capable</td>
</tr>
<tr>
<td>8.</td>
<td>__Perspire</td>
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<tr>
<td>9.</td>
<td>__Feel confused</td>
</tr>
<tr>
<td>10.</td>
<td>__Feel resourceful</td>
</tr>
<tr>
<td>11.</td>
<td>__Feel helpless</td>
</tr>
<tr>
<td>12.</td>
<td>__Feel effective</td>
</tr>
<tr>
<td>13.</td>
<td>__Breathe fast</td>
</tr>
<tr>
<td>14.</td>
<td>__Feel important</td>
</tr>
<tr>
<td>15.</td>
<td>__Feel enthusiastic</td>
</tr>
<tr>
<td>16.</td>
<td>__Feel depressed</td>
</tr>
<tr>
<td>17.</td>
<td>__Feel nervous</td>
</tr>
<tr>
<td>18.</td>
<td>__Heart pounds</td>
</tr>
<tr>
<td>19.</td>
<td>__Feel tense</td>
</tr>
<tr>
<td>20.</td>
<td>__Feel inspired</td>
</tr>
<tr>
<td>21.</td>
<td>__Feel stiff</td>
</tr>
<tr>
<td>22.</td>
<td>__Feel authoritative</td>
</tr>
<tr>
<td>23.</td>
<td>__Feel confident</td>
</tr>
<tr>
<td>24.</td>
<td>__Feel demoralized</td>
</tr>
<tr>
<td>25.</td>
<td>__Hands shake</td>
</tr>
<tr>
<td>26.</td>
<td>__Feel sluggish</td>
</tr>
<tr>
<td>27.</td>
<td>__Feel persuasive</td>
</tr>
<tr>
<td>28.</td>
<td>__Knees shake</td>
</tr>
<tr>
<td>29.</td>
<td>__Feel threatened</td>
</tr>
<tr>
<td>30.</td>
<td>__Feel self-conscious</td>
</tr>
</tbody>
</table>
Appendix I

Dependent Measures:

For each of the following items, there are five possible responses:

(1) Not at all
(2) Slightly
(3) Moderately
(4) Very
(5) Extremely

How would you describe the interviewer's feelings toward you?

1. ___ Warm
2. ___ Understanding
3. ___ Respect
4. ___ Friendly
5. ___ The experimental procedure was as expected.

Respond to the following questions with 1 through 99 where the numbers represent points on the following scale:

1          25          50          75          99
not at all uncertain very much

6. ___ I felt comfortable during the interview.
7. ___ I felt I could be open and say anything I wanted to.
8. ___ I felt safe with the interviewer.
9. ___ I felt the interviewer considered me important.
10. ___ I felt the interviewer was trying to be better than me.
11. __I felt the interviewer was professional.
12. __I felt the interviewer was incompetent.
Appendix J

Thoughtfulness Scale:

Please put a check in the appropriate space for each item.

Yes ? No

1. ___ ___ ___ You would like to try to analyze the motives of others.

2. ___ ___ ___ You are too busy right now to spend time in reflective thought.

3. ___ ___ ___ You are lost in thought.

4. ___ ___ ___ You'd like to take time out just to meditate about things.

5. ___ ___ ___ You'd like to sense what people are thinking about as they talk to you.

6. ___ ___ ___ You are pondering over your past.

7. ___ ___ ___ You feel like analyzing your own thoughts and feelings.

8. ___ ___ ___ You find yourself in a meditative state.

9. ___ ___ ___ You feel like watching others to see what effects your words or actions have upon them.

10. ___ ___ ___ You feel introspective, that is, inclined to analyze yourself.

11. ___ ___ ___ You would like to have time to be alone with your thoughts.

12. ___ ___ ___ You wonder why people behave the way they do.
Appendix K

Marlowe-Crowne Social Desirability Scale:

Please put a check in the appropriate space for each item.

<table>
<thead>
<tr>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I'm always willing to admit it when I make a mistake.</td>
</tr>
<tr>
<td>2.</td>
<td>I always try to practice what I preach.</td>
</tr>
<tr>
<td>3.</td>
<td>I never resent being asked to return a favor.</td>
</tr>
<tr>
<td>4.</td>
<td>I have never been irked when people expressed ideas very different from my own.</td>
</tr>
<tr>
<td>5.</td>
<td>I have never deliberately said something that hurt someone's feelings.</td>
</tr>
<tr>
<td>6.</td>
<td>I like to gossip at times.</td>
</tr>
<tr>
<td>7.</td>
<td>There have been occasions when I took advantage of someone.</td>
</tr>
<tr>
<td>8.</td>
<td>I sometimes try to get even rather than forgive and forget.</td>
</tr>
<tr>
<td>9.</td>
<td>At times I have really insisted on having things my own way.</td>
</tr>
<tr>
<td>10.</td>
<td>There have been occasions when I felt like smashing things.</td>
</tr>
</tbody>
</table>
Appendix L

Test Knowledge:

We would like to find out how familiar you are with the first test you took here (approximately 20-25 minutes long). The following questions test your knowledge of this test. Please circle the correct answer.

1. The first test you took here is most frequently used in which setting?
   a. student counseling centers
   b. management assessment centers
   c. college admission offices
   d. psychiatric hospitals

2. The test is normally used to:
   a. research imagination
   b. diagnose mental illness
   c. assess normal personality patterns
   d. measure overall intelligence and several specific abilities