SELF-DISCLOSURE, DOGMATISM, AND SENSORY ACUITY
AS THEY RELATE TO HUMANISTIC CONCEPTS
OF MENTAL HEALTH

DISSERTATION

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the Degree Doctor of Philosophy in the Graduate
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By
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* * * * *

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I. THEORETICAL BACKGROUND AND LITERATURE REVIEW

The Human-Potential Movement, Invitation

to Self-Disclosure

WE ALL WEAR MASKS. Only an as-yet-unsocialized infant shows himself to the world as he really is; the rest of us have learned to hide our feelings, disguise our moods. We are like the ancient Greek actors who held stylized masks up to their faces to denote what character they were playing, what emotion they were trying to convey. We change our personalities (at least, that part the rest of the world sees) in a twinkling of an eye; and even when we wear the mask of comedy, can the world really say that we are happy deep down inside? (Psychology Today: An Introduction, 1970, p. 461)

So begins the personality theory chapter in one of today's most widely read introductory psychology textbooks. The passage reflects what seems to be a growing concern in popular literature over how little man really knows about the people he lives among, how little he knows about himself, and how destructive this condition can be to his well-being. A vast new cultural phenomenon, often called the human-potential movement, has recently developed in response to what its adherents feel is the increased alienation experienced in today's fast-paced society (Rogers, 1970).
How does a person begin to break down the barriers between himself and others, to more fully use all his inborn capacities? Advocates of the human-potential movement would urge him to begin by increased self-disclosure, or intentional communication of aspects of his private and personal world.

"The underlying philosophy behind the human potential thrust is that of openness and honesty" (Schutz, 1967, p. 16). William Schutz is one of a growing number of widely read authors who describe methods designed to help people realize more of their potential. He is typical of these writers when he urges his readers to take the risks involved in expressing their feelings honestly and directly, since only in this way can people hope to encounter themselves and others around them genuinely. To help people develop the interpersonal skills necessary for full development of their potential, growth centers patterned after Esalen Institute in California have opened by the hundreds across the nation. The movement is founded on the assumption that only through revealing private thoughts and feelings to others can people begin to reduce their loneliness and make of themselves what each is capable of. Considering the enormous amount of energy, money, and apparent risk (Siroka, Siroka, & Schloss, 1971) involved in this movement and the urgency of the personal, interpersonal, and social needs it is an
attempt to meet, it seems important to explore some of the hypotheses suggested by the advocates of self-disclosure.

After a review of some of the literature relevant to self-disclosure, an experiment is described that attempted to explore whether, and under what conditions, self-disclosure may be considered a sign of "mental health" or positive psychological functioning.

Since most literature relating to self-disclosure is couched in terms of "mental health," this construct and its derivatives are used in this paper for the sake of congruence, although it is recognized that just what constitutes mental health (Jahoda, 1958), or even if it is an appropriate concept at all (Szasz, 1961) are major unresolved questions. As used in this paper, mental health does not necessarily imply conformity to the normative demands of society, but refers to a state of being similar to that described by humanist psychologists Abraham Maslow (1970) and Carl Rogers (1961)--a state in which the individual is functioning at or near his unique capacities as a human being.

Although a popular sensitivity to the importance of self-disclosure in everyday life is relatively new, a major concern of many psychologists and social philosophers has been man's estrangement from himself and his fellow man (for example, Buber,
In The Art of Loving, Fromm (1963) reasoned that the basic source of anxiety is the awareness of being prisoner within one's own skin; man is born alone, lives alone, and will die alone. His only relief from the resulting distress comes when he reaches out and joins in some way with other men. "The deepest need of man . . . is the need to overcome his separateness, to leave the prison of his aloneness" (Fromm, 1963, p. 8).

One can view the various psychotherapies and encounter groups as attempts to help people regain contact with themselves and live without excessive reliance on defenses that deny or distort experiences threatening to the self-image. Through the construction of a positive and relatively invulnerable self-image, man can afford to risk being intimately known to himself and others, a risk that must be taken if he is to have the meaningful and deep personal interactions so crucial to his well-being. Maslow (1968) believed that "the great cause of much psychological illness is the fear of knowledge of oneself--of one's emotions, impulses, memories, capacities, potentialities, of one's destiny (p. 60). He quoted Freud as writing, "To be completely honest with oneself is the very best effort a human being can make" (p. 60).
According to Rogers (1961), lack of defensiveness, or "openness to experience," is possible when a person's fundamental sense of worth grows strong enough to be relatively invulnerable to damage from disconfirming or invalidating stimuli. A person honest with himself is more likely to be honest with others, which in turn encourages the kind of dialogue necessary for growth-enhancing interpersonal relations (also see Jourard's [1971] discussion of the "dyadic effect"). Jourard (1963, p. 16) summarized Rogers' views on self-disclosure particularly well:

Healthy personalities present themselves to others as they truly are at the moment. They do not try to misrepresent their feelings or beliefs, but instead, they say what they think, express what they feel, take the consequences of so doing, and more generally, are not ashamed to be who and what they are.

Rogers (1961) uses the idea of congruence to apply what he has learned as a therapist and group facilitator to a general theory of interpersonal relations. He refers to two levels of congruence, the first, accurate matching of experience and awareness, and the second, of awareness and communication. The first sort he calls defensiveness much as do analytic psychologists, and the second he calls falseness or deceit. Most psychotherapists would probably agree that congruence is fundamental in successful therapy; Rogers contends that it is just as fundamental in successful living. In his terms, a person is being defensive when, for example, he does not
realize that a friend has made him angry; and he is being deceitful (nonrevealing) when he feels angry but denies it to others. An infant is being congruent when he feels hungry physiologically and viscerally, is quite aware of his hunger, and is doing his best to tell everyone within earshot. Rogers cites as an obvious example of incongruence a man who can sincerely say he does not feel angry, even though he is arguing angrily, his face is red, and his voice is trembling with rage. He would also be acting incongruent if he realized he was angry but refused, when asked, to admit it. Rogers believes that less obvious instances of incongruence, or lack of genuineness, constantly interfere with most people's struggles to engage life more fully and become all they might be.

**Jourard's Self-Disclosure Theory and Research**

Sidney Jourard holds beliefs much like Rogers' concerning the central importance of being aware of one's feelings and being able to accurately express them to others. He has written a great deal about self-disclosure (for example, Jourard 1963, 1964, 1968, 1971), and he and his co-workers are mainly responsible for disseminating the self-disclosure construct in the research literature. All of his work emphasizes the intimate relationship between mental health and self-disclosure. For him, without self-disclosure, at least to some
significant others, there can be no healthy personality. Although he occasionally points out that self-disclosure probably can be carried to unhealthy extremes or can be used in the service of defense or hostility (Jourard, 1968, p. 85), he generally hypothesizes a strong positive relationship—the more typically candid the disclosing person, the more healthy he probably is. Jourard finds making oneself known to others, being authentic, at once a sign and a prerequisite of mental health. According to this view, most people lose much more than they realize as a result of their insistence on remaining secretive about themselves. For example:

A self-alienated person—one who does not disclose himself truthfully and fully—can never love another person nor can be loved by the other person. Effective loving calls for knowledge of the object. How can I love a person whom I do not know? How can the other person love me if he does not know me? (Jourard, 1964, p. 25)

If I am struggling to avoid becoming known by other persons then, of course, I must construct a false public self. The greater the discrepancy between my unexpurgated real self and the version of myself I present others, then the more dangerous will other people be for me. If becoming known by another person is threatening, then the very presence of another person can serve as a stimulus to evoke anxiety, heightened muscle tension, and all the assorted visceral changes which occur when a person is under stress (Jourard, 1964, p. 26).

Thus for Jourard the consequences of being nonrevealing go far beyond faulty interpersonal relations: "I continue to believe that the stress engendered by chronic false-self-being is a factor in just
about every form of physical illness, even including cancer" (1971, p. 103).

Jourard's research has explored mainly the validity of several versions of the Self-Disclosure Inventory (SDI) and also the positive aspects of self-disclosure (1971). The SDI instructions usually ask the subject to indicate on a three-point scale how much personal data on selected topics they have revealed to various significant people in the past. Jourard takes the scores from the SDI as an index of a person's general willingness or predisposition to disclose himself to others. "This view rests on the assumption that, within limits (to be discovered), a person's past performance is a fair estimate of how he will behave in the present and future" (Jourard, 1971, p. 168). The ultimate usefulness of the SDI of course depends on subjects' accuracy in reporting their past disclosure histories.

Using the SDI, Jourard and Lasakow (1958) found reliable differences between groups of subjects relating to the extent of reported self-disclosure to several target persons. For example, young unmarried people reported most self-disclosure to mothers and less to fathers. As expected, subjects said they disclose less about matters culturally defined as personal, such as sex. In addition, British students were less disclosing than American
undergraduates (Jourard, 1961b); Jewish students more revealing than their Methodist, Baptist, or Catholic counterparts (Jourard, 1961a); and police officers less disclosing than college students (Jourard, 1971).

A series of related studies (Jourard, 1959; Jourard & Landsman, 1960; Jourard & Richman, 1963; Jourard & Friedman, 1970) supported the "dyadic hypothesis": subjects tended to have more positive feelings toward, and reveal more information to, people who had been self-disclosing towards them. In addition, several of Jourard's students manipulated the level of subjects' self-disclosure upward or downward by varying their own level of self-disclosure in the encounter (1971). Generally supportive findings for the dyadic effect have been reported by Himelstein and Kimbrough (1963), Chittick and Himelstein (1967), Shapiro, Krauss, and Truax (1969), and Worthy, Gary, and Kahn (1969).

Although Jourard believes he can "see the connections between self-disclosure and health, interpersonal competence, personal growth, and all manner of good things" (1971, p. 105), relatively few published studies provide any kind of direct support for these provocative hypotheses.

Self-disclosure, as measured by the SDI, has been correlated with less defensive Rorschach protocols (Jourard, 1971).
and instructors' ratings of their nursing students' interpersonal effectiveness with patients (Jourard, 1961c). More revealing Peace Corps trainees were less authoritarian and more integratively complex than their less revealing counterparts, and 6 weeks after initial testing were better liked by fellow trainees and staff (Haverson & Shore, 1969).

Shapiro (1968) and Jourard (1971) both found that self-disclosure was positively related to self-concept as measured by the Tennessee Department of Mental Health Self-Concept Scale. Doster and Strickland (1969) found that self-disclosing subjects perceived their home environments as more nurturing than nonrevealing subjects. And a student of Jourard's found a positive relationship between self-disclosure and the full acceptance of one's own death (Graham, 1970). This prediction grew from the existential position that it is only after a person faces the finite nature of his existence that he can completely and courageously encounter life.

Although the results reported by Jourard and his co-workers seem encouraging, a number of recent studies have cast some doubt on the validity of the SDI as a general measure of self-disclosure, if not of the self-disclosure construct itself. Burhenne and Mirels (1970) found no relationship between SDI scores and actual disclosure on personal essays. In a similar study, Pederson and
Breglio (1968) found that claimed self-disclosure related to actual self-disclosure only in the topic area of "studies," and not in the more personal areas of personality, body, interests, or money. Himelstein and Lubin (1966) did not find a predicted relationship between SDI and MMPI K scores. They interpreted a low K score as an indication not only of openness, but also, when used with a nonclinical population, of good emotional adjustment. When Himelstein and Kimbrough (1963) asked graduate students to introduce themselves personally in class, the researchers could find no evidence for the predictive validity of the SDI.

Brodsky and Komaridis (1968), studying a prisoner sample, found that disclosure scores were unrelated to types of offense, biographical variables, or psychiatric diagnoses. Stanley and Bownes (1966), arguing that evidence for the view that self-disclosure is a sign of health personality is largely anecdotal, did not find predicted negative correlations between the SDI and the Maudsley Personality Inventory—the latter a common measure of neuroticism. And finally, Hurley and Hurley (1969) failed to find predicted relationships between SDI scores and actual disclosure in counseling sessions. They concluded that caution is advisable in interpreting Jourard's SDI as a general measure of self-disclosure.
In the face of such disconfirming findings, Jourard has recently begun to stress the situational factors influencing self-disclosure. He would argue that strong situational factors can override a person's disposition to be revealing or nonrevealing. "While there is a tendency for people to be characteristically open or closed, the influence of the situation and the identity and number of confidants cannot be neglected" (Jourard, 1971, p. 121).

The Greene Self-Disclosure Sentence Blank (SDSB)

and Related Research

The Greene Self-Disclosure Sentence Blank (Greene, 1964), a request for direct disclosure rather than for a report of past disclosures as in the usual forms of Jourard's test, was developed under the assumption that although situational factors play a major role in moderating self-disclosure, a person's actual disclosures in an experimental situation will bear a useful correspondence to his general disposition to make himself known to others in real life. The instructions for completing the twenty sentence stems are intended to give the subject a clear understanding of what the examiner is actually interested in:

This sentence completion blank is designed to help gain an understanding of your basic feelings concerning yourself and your personal world. Please complete these sentences
to express your real feelings, trying to be as frank as possible about matters which are personally important to you.

Try to do every sentence. Be sure to make a complete sentence. (Greene, 1964, p. 45)

Each response is scored on a five-point scale with the help of a scoring manual containing instructions and scoring examples empirically derived (Appendix A). The scoring instructions, without examples, can be found in Jourard's *Self-Disclosure: An Experimental Analysis of the Transparent Self* (1971). The self-disclosure index for a person is the sum of the scores assigned to his 20 completions; the greater the disclosure, the lower the score. Interscorer correlations ranging from .83 to .91 indicate that the SDSB can be scored with satisfactory reliability.

In tests of its validity (Greene, 1964), the SDSB distinguished between deliberately disclosing and deliberately nondisclosing performances, also suggesting that individuals can control what they reveal of themselves on a sentence completion test. The SDSB showed subjects tested under experimental conditions of moderate threat to be significantly less revealing than those tested under experimental conditions that were not threatening, thus illustrating the importance of situational factors. Given to patients in psychotherapy, the SDSB correlated with therapists' ratings of their patients' willingness to reveal themselves.
Several studies by other investigators further support the validity of the SDSB. Haggerty (1964) found that SDSB scores of subjects were related to their willingness to disclose themselves in tape-recorded interviews made several weeks after the SDSBs were completed. Self-disclosers also judged the interviewer as more understanding than less revealing subjects, and in turn were perceived by the interviewer as being easier to understand.

McLaughlin (1966), like Haggerty, found that self-disclosers on the SDSB were also judged as more open on tape-recorded interviews. McLaughlin also found that revealing subjects were described by other subjects in more personal terms, that is, from a more internal experiential frame of reference, than were less revealing subjects. Self-disclosers also tended to describe others in more personal terms than their less revealing counterparts (Carpenter, 1966).

Otten (1967) partially replicated Carpenter's finding and also found that level of self-disclosure was positively related to feeling in control of one's future, an attitude Rotter (1966) and Barron (1963) have described as having great significance for fully functioning persons.

Leibowitz (1965), testing a derivative from the "differentiation hypothesis" (Witkin, Dyk, Faterson, Goodenough, & Karp, 1962),
found high self-disclosure associated with sophistication of body image and field-independence. These findings were taken to indicate that a person who exhibits an articulated (differentiated) style in his perception of his stimulus field and body concept is also likely to be more self aware and comfortable with the expression of feelings and impulses.

And finally, Graham (1970) demonstrated a relationship between self-disclosure and fully accepting the finality of one's death. This was a test of Heidegger's existentialist view that a person cannot fully involve himself in life until he has relinquished his fantasy of eternal life. Graham took willingness to disclose to others as an indicator of willingness to risk engagement with life. She also found that SDSB scores correlated with judged depth of disclosure in tape-recorded interviews.

The studies cited seem to indicate that the SDSB, an instrument used in this study, can be a useful measure of self-disclosure.
Openness to Experience and Accurate Perception of Reality

From his study of the self-actualized personality, Maslow came to believe that "fear of knowledge of oneself is very often isomorphic with, and parallel with, fear of the outside world. That is, inner problems and outer problems tend to be deeply similar and to be related to each other" (Maslow, 1968, p. 60). The person who has accepted himself and does not hide much from himself should also not hide much from others; he has little to fear from either. But a person who fears disclosing himself to others is probably also afraid to know himself. And, seen from the other point of view, the more of his experience he is afraid to disclose to himself, the more he feels compelled, once it slips through his first line of defense, to censor from his communications with other people. Defensiveness and nonrevealingness can be expected to work in tandem, protecting the person's vulnerable self-esteem from both himself and others. In Rogers' language, although it would seem logically possible to be defensive but not deceitful, or nondefensive but deceitful, more likely these two levels of incongruence covary.

If self-disclosure tends to indicate nondefensiveness, it should follow that the self-disclosing person is more "open to his
experience" than his less revealing counterpart. The fully functioning, nonalienated person, according to Rogers, is by definition open to his experience, living so that every stimulus, whether originating within the organism or in the environment, is freely relayed through the nervous system without being distorted or channeled off by any defense mechanism. There is no need of the mechanism of "subception," whereby the organism is forewarned of experiences threatening to the self. On the contrary, whether the stimulus is the impact of a configuration of form, color or sound in the environment on the sensory nerves, or a memory trace from the past, or a visceral sensation of fear, pleasure or distrust, it is completely available to the individual's awareness. (Rogers, 1959, p. 206) (Italics added.)

Rogers hypothesizes that the self-revealing, fully functioning person is less likely to distort the reality of various available stimuli and will perceive more accurately even raw form, color, or sound in his environment. A similar position was taken by Maslow in his study of self-actualized persons. His global impression of such people was that, when compared to others, they were relatively spontaneous and genuine in their behavior and more efficient in their perception of reality. He believed he had found in them "an unusual ability to detect the spurious, the fake, and the dishonest in personality, and in general the ability to judge people correctly and efficiently" (1970, p. 153). This perceptual superiority extended to all areas of life:
In art and music, in things of the intellect, in scientific matters, in politics and public affairs, they seemed as a group to be able to see concealed or confused realities more swiftly and more correctly than others. . . . They live more in the real world of nature than in the man-made mass of concepts, abstractions, expectations, beliefs and stereotypes that most people confuse with the world. They are therefore far more apt to perceive what is there rather than their own wishes, hopes, fears, anxieties, their own theories and beliefs, or those of their cultural group. (Maslow, 1970, pp. 153-154)

Maslow suggested the possibility of defining psychological health and neurosis, respectively, as "correct and incorrect perceptions of reality" (1970, p. 153). Like Rogers, he suspected that the perceptual superiority of healthy personalities would extend even to sensory acuity, and once organized, but never completed, an experiment to test this hypothesis (1969).

Conceptualizing mental health at least partly in terms of how the person perceives the world is a common practice. "As a rule, the perception of reality is called mentally healthy when what the individual sees corresponds to what is actually there" (Jahoda, 1958, p. 49). The problem has always been in defining reality adequately. Jahoda suggests that "accurate" or "correct" perception should not be taken to mean that there is only one static, limited, or right way of looking at the world, but rather "whatever the individual, and perhaps peculiar, way of perceiving the world, there must be some objective cues to fit the resulting percept" (Jahoda, 1958, p. 51)
This is how accurate perception of reality will be defined in this paper.

There seems to be evidence that as people move towards becoming fully functioning individuals, they come into closer and more accurate touch with their subjective experience, and their social judgment improves (Rogers, 1961). But there is as yet little direct evidence that they use their senses more accurately (Maddi, 1968). However, several studies bear on this possibility. Minard and Mooney (1969) recently demonstrated that psychologically differentiated subjects (Witkin, Dyk, Faterson, Goodenough, & Karp, 1962), with the ability to be relatively independent of a perceptual and social field, were better able to keep their emotions from interfering with their accuracy in an objectively measured perceptual defense task than less differentiated subjects. And Palmer (1966, 1970) has provided evidence for his interesting hypothesis that some individuals develop myopic vision (poor visual acuity) as a defense, or perceptual barrier, against what is for them overwhelming environmental stimulation. He suggests that in order to achieve a comfortable activation or arousal level (Fiske & Maddi, 1961), individuals may also develop other sensory impediments.

An important study by Kaplan and Singer (1963) would seem to provide some direct evidence that more fully functioning persons use
their senses more accurately. Using the Dogmatism Scale (Rokeach, 1960a) to investigate certain aspects of alienation as discussed by Fromm (1955) and Schachtel (1959), they found a predicted relationship between defense against one's subjective experience and the ability to make acute sensory discriminations. They found that dogmatic subjects (the operationally defined self-alienated) were generally less accurate on sensory discrimination tasks than nondogmatic subjects (those who were assumed to be relatively in touch with and nonthreatened by the subjective, emotional aspects of themselves). Differences between groups were particularly noticeable when their discriminatory abilities were compared within sensory modalities that are relatively difficult to divorce from subjective evaluation (especially touch, smell, and taste). Subjects open to their experience and at home with their feelings were apparently better able to be objective.

The Rokeach Dogmatism Scale and Related Research

The Rokeach Dogmatism Scale (Rokeach, 1960a) is a well known and respected measure of open- and closed-mindedness (see Vacchiano, Strauss, & Hochman, 1969, literature review). Rokeach describes the dogmatic or closed-minded person as one who needs to defend himself against anxiety and knowledge incongruent with his
self-image. Such a person cannot "receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside" (Rokeach, 1960a, p. 57). Rokeach construed dogmatism as a tightly woven cognitive network of defense against anxiety.

A number of studies attest to the usefulness of the Dogmatism Scale as a general measure of psychological well-being, or mental health. Rokeach (1960b), Mikol (1960), Zagona and Kelly (1966), and Pyron and Kafer (1967) all found that dogmatism is related to the rejection of novel situations, suggesting that dogmatic individuals should have trouble coping with the complexity and change characteristic of modern society. Rosenfield and Nauman (1969) found that dogmatic subjects in a college dormitory were less well liked than nondogmatic ones. Burk (1966) found that dogmatism was related to interpersonal insensitivity, and Saltzman (1967), using the Barrett-Lennard Relationship Inventory, found an inverse relationship between a person's level of dogmatism and whether other people perceived him as being empathic and holding positive regard for others.

A number of items on the Dogmatism Scale (Form E) reflect feelings of aloneness, isolation, and helplessness in a hostile world.
Some examples are: "Man on his own is a helpless and miserable creature"; "Most people just don't give a 'damn' for others"; "Fundamentally, the world we live in is a pretty lonely place"; "I'd like it if I could find someone who would tell me how to solve my problems"; and "It is only natural for a person to be rather fearful of the future." Lazarus (1969) has pointed out that a person agreeing with these statements might reasonably be expected to feel more vulnerable than others in social situations and to reveal little about himself that might be "used against him."

Kemp (1961), making use of regularly scheduled counseling sessions, found a positive relationship between dogmatism and anti-intraception. He described his impressions of the differences between dogmatic and nondogmatic college students in their counseling hours thus:

The low dogmatics were apparently more at ease, talked more freely, and seemed to feel less need for "closure." They also explored more fully the complexity of the situations and were evidently aware of the possibility of many more factors contributing toward a single result. They generally made some effort to analyze the confused, or hidden, aspects of a subject or problem.

The high dogmatics or those with a closed mind talked more and at greater length on "safe" topics, those which could hardly be suspected of having personal relevance. When occasionally they digressed to personal ramifications, they did not pursue them but restored a "safer" relationship. It was sometimes apparent that they wished to analyze thoroughly a problem but seemed to have
some difficulty in tolerating certain facets and ideas and were inclined to label these before they had been explored or their relationship to other ideas worked out. (Kemp, 1961, p. 663)

In a related study, Pannes (1963) found that the more dogmatic her subjects, the more likely they were to report unrealistically favorable self-images.

However, two studies seem to contradict the conclusions of Kemp and Pannes. Byrne, Blaylock, and Goldberg (1966) found evidence that dogmatism is not, as Rokeach assumed, associated with the defenses of repression and denial, but rather with intellectualization and sensitization, defense mechanisms generally associated with an apparent openness about personal matters. And Kirtley and Harkless (1969) found high dogmatism associated not only with neurotic and psychotic symptoms on the MMPI, but with a below average K score, indicating a willingness to admit to probably true but unfavorable personality characteristics. Thus under some circumstances dogmatic individuals may appear to be high self-disclosers.

It is not uncommon in clinical practice, or in everyday life, to find persons who seem only too willing to tell others details of their private lives, but in ways that do not seem to help them work constructively with their problems, or enhance their relations with others. Although the evidence is mixed at this point regarding the
self-disclosing behavior of dogmatic individuals, many researchers have concluded that much personal dissatisfaction does exist, and that the dogmatic person may be considered lacking in the qualities usually considered essential for psychological well-being (for example: Clouser & Hjelle, 1970; Erlich & Bauer, 1966; Korn & Giddan, 1964; Lefcourt, 1962; Norman, 1966; Plant, Telford & Thomas, 1965; Rebhum, 1966; Sticht & Fox, 1966; Vacchiano, Strauss, & Hochman, 1969; and Webster, 1967). Vacchiano, Strauss, & Schiffman conclude:

The dogmatic subject lacks self-esteem . . . , is doubtful about his own self-worth, is anxious, lacks confidence in himself, lacks either self-acceptance or self-satisfaction, is noncomittal and defensive, and is dissatisfied with his behavior, his physical state, his own personal worth, and his adequacy. Personality maladjustment and instability appear to underlie dogmatism. (Vacchiano et al., 1968, p. 84) (Italics added.)

Summary

From the preceding discussion the following points may be abstracted:

1. Man's ability to communicate with himself and his fellow man is impaired.

2. One of the necessary (but perhaps not sufficient) requirements for reducing alienation is increased levels of self-disclosure.
3. Although self-disclosure has generally been taken as a sign of actualized human potential, it may not always be; this possibility may account for some equivocal results in studies relating disclosure, as measured by Jourard's self-disclosure scale, to aspects of mental health.

4. One definitional component of mental health is accurate perception of reality, or the extent to which precepts are grounded in objective cues.

5. A person's level of dogmatism, that is, the degree to which he possesses an open or closed mind, may be taken as one measure of his current ability to function at full capacity as a human being.

On the basis of theory and research reviewed, and using dogmatism and sensory acuity as operationally defined measures of mental health, the experiment reported in this paper attempted to clarify certain aspects of the relationship between self-disclosure and mental health.
II. HYPOTHESES

In light of the foregoing review of the literature, it is reasonable to predict that in general, willingness to share important aspects of one's personal experience with others is a positive characteristic, and should be related to criterion measures suggestive of mental health. This prediction is based on the work of several humanistically oriented psychologists, particularly Jourard (1963, 1964, 1971).

However, for some people, high levels of self-disclosure may indicate not mental health, but the reverse. This prediction is based on anecdotal reports and the work of Byrne, Blaylock, and Goldberg (1966) and Kirtley and Harkless (1969). If such a category of "neurotic self-disclosers" does exist, they would be expected to score low on criterion measures of mental health and accurate perception of reality.

Specifically, the following hypotheses were tested in the research reported here:

1. Self-disclosure, as measured by the Greene Self-Disclosure Sentence Blank (SDSB), will be negatively related to
neuroticism and self-alienation, as measured by Rokeach's Dogmatism Scale.

2. High self-disclosers will demonstrate better contact with reality, here defined at a basic level as sensory acuity, than less revealing individuals.

3. (Attempt to replicate Kaplan and Singer's [1963] findings): Dogmatic individuals will obtain lower scores on sensory acuity measures than less dogmatic individuals.

4. There will be an interaction between self-disclosure and dogmatism on total acuity scores so that:
   a. Seen from the standpoint of high self-disclosure: disclosing, low-dogmatic subjects will have higher sensory acuity scores than disclosing, high-dogmatic subjects, and
   b. Secondarily, seen from the standpoint of low dogmatism: low-dogmatic, disclosing subjects will have better sensory acuity scores than low-dogmatic, nondisclosing subjects.

5. (Attempt to replicate Kaplan and Singer's [1963] findings): For both high and low self-disclosers and high- and low-dogmatic subjects, differences between groups will be most pronounced in those modalities that require greater skill or practice in sorting out one's subjective evaluations of the experience from what is objectively
present in the experience. On the basis of the work of Schachtel (1959) and Kaplan and Singer (1963), it is predicted that differences in accuracy scores on sensory acuity subtests between highs and lows on self-disclosure and dogmatism will increase in the following order: vision, hearing, touch, taste, and smell.
III. METHOD

Subjects

The subjects were 104 women who participated in order to fulfill a requirement of the introductory psychology class they were taking at the Ohio State University during the spring quarter of 1971. One of the subjects was dropped from the data analysis because she left a questionnaire page blank. The 103 subjects used in the analysis ranged in age from 17 to 30, with a mean of 19.3 and a median of 19.

Procedure

Each subject was tested individually for one hour in a small experimental room furnished with a table and two chairs. Each was told the following:

Thank you for coming here today to help me finish my Ph. D. research. I'm interested in the feelings and attitudes of college women and also how well they do on five short sensory acuity tests, which I'll explain more about as we go along. Basically, I'll be asking you to make some judgments about things you'll look at, touch, listen to, etc. I'd be happy to send you a short general summary of my results if you'll self-address this envelope. [All but one subject said that they would like to have a summary of the results.]
Now I'm going to ask you to fill out these two questionnaires. [Given SDSB and Rokeach Dogmatism Scale in that order.] Please fill them out in the order I've given them to you, and fill out each page completely before going on to the next. I'm the only person who will ever see your name associated with your responses, so I hope you'll be as candid as possible. We're under some time limitations, so please finish the two forms in twenty minutes, which you can easily do if you move right along. Try not to leave any blanks. You can keep track of time with this clock on the table. I'll be back in twenty minutes to give you the sensory acuity tests.

After the experimenter returned and collected the completed forms, he administered the sensory acuity tests in the following order: hearing, vision, touch, smell, and taste.

**Measures**

**Questionnaires**

Scores from the forty-item Form E of the Rokeach Dogmatism Scale were used to operationally define mental health, and the Greene Self-Disclosure Sentence Blank (SDSB) was used to sample actual self-disclosing behavior.

**Measures of Sensory Acuity**

Since "reality" is notoriously elusive, measures of sensory acuity were adopted to provide relatively noncontroversial "benchmark marks." The procedures were developed in pilot testing and are
similar to those suggested by Kaplan and Singer (1963), who unfortunately did not provide enough detail for precise replication.

**Hearing.** -- A Hewlett-Packard wide-range oscillator and a Sony tape deck were used to record instructions and nine sets of tones, each set composed of three known frequencies and with the middle tone closer in frequency to either the first or third tone. Frequencies within each group were presented in three different orders, and for each trial subjects were asked to judge whether the middle tone was closer in pitch to the first or third tone presented in that trial. Each frequency was used as a middle (comparison) stimulus once. Volume was pre-fixed, to provide comfortable listening through earphones and insure uniform stimulus for all subjects. The subjects filled out their own answer sheets. The experimenter left the room during this part of the testing, returning after seven minutes to administer the remaining tests. Appendix B gives the tape-recorded instructions, frequencies used, and answers.

**Vision.** -- Nine trial sets of three rectangles each were cut from black construction paper. Rectangles were glued separately to the centers of white 5- x 8-inch index cards, which were stapled to the pages of a standard 6- x 9-inch stenographer's notebook, with a blank card separating each set. Small metal index tabs clipped at the edges of the cards allowed them to be flipped at a steady rate; each
stimulus card was presented to the subject for a half second from a
distance of two and a half feet. Subjects judged whether the second
rectangle in each set of three was closer in size to the first or third.
Each rectangle was used as a comparison stimulus once. Rectangle
sizes, order of presentation, and correct responses are given in
Appendix C.

Touch. -- Woodworking dowels of several diameters were cut
into short lengths. Like-diameter dowels were glued side-by-side
spanning the width of boards measuring 3/8 x 2-3/4 x 7-1/2 inches.
The ripple effect produced by running fingers along the length of the
boards was the tactile stimulation for this part of the experiment. A
wooden box 18 x 24 x 21 inches was used to conceal the stimulus
materials from subjects. The box was open at the experimenter's end,
so that he was free to arrange the boards for each of the nine trials.
A 4-1/2-inch opening ran entirely across the bottom of the subject's
end of the box.

For each trial, three stimulus boards lay side-by-side
within the box so that the dowels on the middle board were closer in
diameter to the dowels on the first or third board. Subjects were
instructed to place one hand through the opening on their side of the
box and run their fingers over the length of each board for
approximately four seconds, without returning to a board once they
had moved on to another. After a subject had felt all three boards, they were quickly rearranged so that only one of them was within her reach. The subject was then asked to feel this board as before and judge whether it was the first, second, or third. This procedure was repeated nine times. Dowel sizes, order of presentation, correct responses, and sketches of the stimulus boards and box are in Appendix D.

**Smell.** -- Three sets of different odors (provided by Micrin, Listerine, and Lavoris mouth washes), each containing three different and known intensities of the same odor, were mixed and stored in brown, wide-mouthed, sixty-milliliter pharmacy bottles. The three dilutions of a given set, hidden in the box described earlier, were held in rotated order for three seconds each under the subject's nose. The subject was asked to judge whether the middle sample most resembled the first or the third in intensity or strength. Every sample was the comparison stimulus once, making a total of nine trials. Within each trial, judgments were made without any second exposures. Dilutions, order of presentation, and correct responses are in Appendix E.

**Taste.** -- Kool-Aid sugar-sweetened soft drink, in punch, grape, and orange flavors, provided the samples for the taste acuity
tests. Each flavor was mixed in three concentrations with distilled water and stored in brown four-hundred-milliliter pharmacy bottles. Differences in appearance were masked with food coloring. Before the subject arrived, quarter-ounce samples in one-ounce disposable "soufflé cups" were arranged in sets of three, each set containing one flavor in three concentrations. Each subject was presented with the tray of samples, a large paper cup of warm water, a plastic pan, and a supply of paper towels. She was instructed to take a sip of the first sample in the trial set, roll the sample on the tongue to get a sense of its flavor, spit it into the plastic pan, thoroughly rinse the mouth with warm water, and spit again into the plastic pan. This procedure was repeated for each sample. The subject was asked to judge whether the second sample was closer in concentration to the first or third on each of nine trials. Appendix F gives dilutions, order of presentation, and correct responses.

Acuity scores for each modality could range from 0 to 9, and the total acuity score for each subject could range from 0 to 45.
IV. RESULTS

Means and Standard Deviations

Table 1 reports the means and standard deviations for the major variables in this study. The data for dogmatism ($M = 148.446$, $SD = 24.419$) are similar to those from several pooled samples ($M = 142.5$, $SD = 25.8$) at Ohio State University around 1950, presumably from mixed male-female groups (Rokeach, 1960a).

The data for self-disclosure ($M = 55.320$, $SD = 9.741$) suggest that subjects in the present study were somewhat more revealing than those in a female sample reported by Haggerty (1964) ($M = 63.63$, $SD = 8.85$, $N = 104$). Differences might be explained by difference in sex of the experimenters, in testing situations (Haggerty tested in groups in a classroom), or in prevailing ethos.

Since some of the sensory acuity tasks used in this study are quite different from those used by Kaplan and Singer (1963), no comparisons of results of such tests are presented.
Hypotheses

It was predicted that self-disclosers, as defined by the SDSB, would be 1) less neurotic and self-alienated, as defined by Rokeach's Dogmatism Scale, and 2) more sensorily acute than less revealing subjects. Data bearing on these two hypotheses are presented in Table 2. The sample of 103 females was divided into low self-disclosers (the subjects having the fifty-one highest SDSB scores) and high self-disclosers (the subjects with the fifty-two lowest scores). Differences between the mean scores of these two groups for dogmatism, the five sensory modality tests, and the total acuity scores were examined using seven separate one-way analyses of variance. The only significant difference between low and high disclosers was in visual discrimination. This finding remains unexplained.

Table 3 is a correlational matrix of the variables in this study for the entire sample. Except for a low correlation with the vision
test, self-disclosure again failed to correlate with either dogmatism or sensory acuity.

On the basis of these data, hypotheses 1 and 2 must be rejected. Self-disclosure as measured by the SDSB is not directly related to either dogmatism or sensory acuity (except vision). When low dogmatism and high sensory acuity scores are construed as criterion measures of mental health or adequate psychological functioning, their lack of relationship with self-disclosure suggests that the latter is not, in and of itself, a positive sign of psychological health.

Hypothesis 3, which postulated a negative relationship between dogmatism and sensory acuity, was formulated in an attempt to replicate the findings of Kaplan and Singer (1963). Data relating to hypothesis 3 are in Table 4. This table was constructed in a manner similar to that used for self-disclosure in Table 2. Low dogmatics were defined as the subjects having the fifty-two lowest dogmatism scores, and high dogmatics, the subjects with the fifty-one highest dogmatism scores. One-way analyses of variance were computed for each of the variables. As would be expected from previous data, the
analysis indicates no significant differences between the low and high
dogmatic groups on self-disclosure. The analyses of variance do
indicate that significant differences exist between the means of
subtests on acuity of smell, taste, touch, and the total acuity score.
As Table 3 shows, the correlation between the total of the dogmatism
scores and sensory acuity was -.40, in the predicted direction. Thus
the data in Tables 3 and 4 provide replicative support for Kaplan and
Singer's (1963) findings concerning the relationship between
dogmatism and sensory acuity, and are not discussed further.

Hypothesis 4, that there would be an interaction between self-
disclosure and dogmatism on sensory acuity, was based on the
argument that while willingness to reveal private aspects of one's life
may be a sign of mental health for some people, it may not for others,
and in fact may signify the reverse. Four cells for a two-way
analysis of variance were constituted by splitting the scores on the
dogmatism and self-disclosure scales at their medians. Table 5
shows the resulting number of subjects and mean sensory acuity
scores for each cell.
The results of the two-way analysis of variance are reported in Table 6. The self-disclosure main effect was not significant, while the dogmatism main effect was. These results are not surprising in view of previously discussed data. Of major interest was the finding that interaction between self-disclosure and dogmatism was significant beyond the .001 level. This interaction is illustrated in Figures 1 and 2. On t tests, the difference in mean acuity scores of the high-disclosing, low-dogmatic group and the high-disclosing, high-dogmatic group was highly significant (Figure 1), as was the difference between means of the low-dogmatic, low-disclosing group and the low-dogmatic, high-disclosing group (Figure 2). That high self-disclosers in this study did either relatively well or relatively poorly on the criterion measure of sensory acuity, depending on whether they were low or high dogmatics, would seem to have clear implications for an understanding of self-disclosure theory within the limitations of this study, and perhaps in a more general sense. The foregoing findings are tentative evidence that while willingness to disclose is in fact an important characteristic, the sheer quantity of personal statements
one makes is not in itself, as Jourard (1963) has suggested, a reliable gauge of psychological health.

The fifth and final hypothesis in this study was an attempt to replicate a finding made by Kaplan and Singer (1963) and extend its implications to self-disclosure theory. They found that the difference in accuracy scores between high- and low-dogmatic individuals increased in the following order: vision, hearing, touch, taste, and smell (that is, relatively minor differences on the tests requiring primarily allocentric modes, to larger differences in those requiring primarily autocentric modes of perception [Schachtel, 1959]). Since self-disclosure was not found related to sensory acuity in this study, hypothesis 5 relative to self-disclosure must be rejected on the face of it. Inspection of mean differences between high and low groups on the dogmatism measure (Table 4) indicates that the predicted gradient of differences did not occur, and so hypothesis 5 for dogmatism is also rejected. However, the three modality tests which accounted for all of the differences in total
acuity scores were in those modalities which Schachtel's theory (1959) suggests ought to cause the most difficulty for individuals not comfortable or practiced in sorting out their subjective value judgments ("I don't like this taste") from objectively defined nuances in their stimulus field ("Sample 2 tastes more like sample 1 than sample 3"). Therefore, the data can be considered somewhat supportive of Schachtel's general theory concerning modes of perceptual functioning.

**Additional Data Analysis**

After confirmation of hypothesis 4a, indicating that high self-disclosers could be meaningfully divided on the basis of their dogmatism scores, it seemed worthwhile to ask if a qualitative difference could be detected between the SDSBs of dogmatic and nondogmatic disclosers; it was predicted that judges would find disclosures of high-disclosing, low-dogmatic subjects "healthier" looking than the disclosures of high-disclosing, high-dogmatic subjects.

To test for this possibility, a subsample of SDSBs was drawn by selecting from the total sample ($N = 103$) all subjects who scored in the most revealing 50 per cent on the SDSB and who also scored in the top or the bottom 25 per cent of the distribution on the Rokeach
Dogmatism Scale. This procedure yielded twenty-six subjects, fourteen high disclosing, high dogmatic, and twelve, high disclosing, low dogmatic.

The mean dogmatism and self-disclosure scores were 180.28 and 47.78 respectively in the high-disclosing, high-dogmatic group and 121.25 and 48.66 in the high-disclosing, low-dogmatic group. The difference between the two groups on dogmatism was highly significant ($F = 218.364; \text{df} = 1/24; p < .001$), while the difference on self-disclosure was not ($F < 1$). Therefore, the criteria used to develop these two groups seem to have been adequate.

The mean total acuity score for the low-dogmatic group was 33.41, and for the high-dogmatic group, 29.35, the difference being significant at the $p < .003$ level ($F = 10.378, \text{df} = 1/24$). These figures are very similar to those from the interaction for the entire sample illustrated in Figure 1.

Judges

Six graduate and one undergraduate student in psychology served as judges. Concerning their orientation to psychology, four described themselves as humanistically oriented, one as a behaviorist, and two as Gestaltists. Each judge was provided copies of the twenty-six sentence blanks with subjects' names removed and the following instructions:
INSTRUCTIONS  Please read completely through the 26 Self-Disclosure Sentence Blanks you have been given so that you develop a sense of what the disclosures on them are like. Next, sort the Blanks into 2 groups of approximately equal numbers on the dimension of "psychological health." "Psychological health" is deliberately left undefined. When making your judgments, use your own general sense of what seems like a "more healthy" or "less healthy" protocol for each person. After you have force-sorted the Sentence Blanks into 2 groups of approximately equal numbers, record your judgments by placing an X in the appropriate column opposite each person's identification number.

After you have recorded your judgments, please indicate your general orientation to psychology at the bottom of the page. Thank you.

Person number "More Healthy" "Less Healthy"

Assuming chance to be 50 per cent matching with the criterion (high or low dogmatism scores), the seven judges sorted the blanks into "less healthy" and "more healthy" groups at significantly better than chance levels ($X^2 = 17.231, df = 1/24, p < .001$). The percentages of correct matching with high and low dogmatism ranged from 62 to 77 per cent. This analysis provided post hoc support for the use of dogmatism as a criterion of mental health and also for an implication of hypothesis 4, that quality of self-disclosure varies and can be directly judged.

Next, scores of the subjects who were correctly placed (agreeing with dogmatism placement) by at least five of the seven judges were analyzed. The six subjects judged "more healthy" had mean total acuity scores of 34.50, and the eight subjects judged "less
healthy," 28.37. The difference between these two groups appears to be the largest found in this study and was significant ($X^2 = 22.927$, df = 1/12, $p < .001$). Thus when the judges who rated subjects' "mental health" agreed almost unanimously with the categorization of the dogmatism scale, thereby eliminating "ambiguous" blanks, differences in sensory acuity of these remaining subjects seemed greater, as should be expected with the use of multiple predictors (judgments of "mental health," and dogmatism scores).
V. DISCUSSION

Quantity and Quality of Self-Disclosure

On a number of theoretical and practical grounds, commentators on the human condition have often pointed out how important it is for man's survival and growth that he increase understanding through more authentic self-disclosure. The implied value is that it is "good" to reveal inner thoughts and experiences to others, and that persons who display a relatively high level of transparence or self-disclosure can be expected to manifest other characteristics commonly associated with "mental health"—for example, an open and flexible belief system and the ability to attend to reality without distortions. Yet studies trying to demonstrate a link between self-disclosure and signals of psychological well-being have yielded inconclusive results. The bulk of the work in this area has been done or inspired by Jourard, whose self-report measures of disclosure have only sometimes correlated with measures operationally defined as criteria of mental health. Jourard has argued that it is not the self-report nature of his measures, or any flimsiness of his hypotheses, but situational factors, which have
sometimes washed out the effects of individual predispositions to
share personal feelings with others.

That situational variables are extremely important in
determining levels of self-disclosure seems probable, and a number of
studies cited earlier support this hypothesis. For example, Greene
(1964) demonstrated that actual self-disclosing behavior varies as a
function of who subjects believe will have access to their productions.
However, the present study suggests an additional or alternative
explanation for the negative results reported in the self-disclosure
literature. Self-disclosure measures may not always correlate with
mental health criteria because amount of revealingness for many
persons is not, in fact, a valid index of their psychological well-being.

When quantity of self-disclosure as measured by the SDSB was
compared to operationally defined criteria of psychological health
(dogmatism and sensory acuity) no relationship was found. When an
attempt was made to control for "quality," using dogmatism as a
moderating variable, then self-disclosure was related to accurate
perception of reality as defined by scores on sensory acuity tests:
self-disclosure and dogmatism interacted on sensory acuity, so that
low-dogmatic self-disclosers did significantly better on sensory
acuity measures than high-dogmatic self-disclosers.
In addition, judges were able to reliably distinguish dogmatic from nondogmatic high self-disclosers when asked to place sentence completion blanks into "less healthy" and "more healthy" categories. Protocols of dogmatic subjects were typically placed in the "less healthy" category, while those of low-dogmatic subjects were placed in the "more healthy" group.

It seems reasonable to assume that there were distinguishably different qualities of disclosure. Reproduced below are SDSB responses from two eighteen-year-old females, both scored as very self-disclosing. The reader may wish to judge for himself which category these samples belong in.

Protocol 1

1. Sometimes I want to die.
2. I can't come to a decision often.
3. Sexual thoughts are frequent.
4. I often wish I was dead.
5. There have been times when I think about suicide.
6. My biggest problem is making friends.
7. I secretly hate everybody.
8. I feel lonely.
9. Loneliness is me.
10. I feel guilty about turning people down.
11. I have an emotional need to be alone.
12. I regret turning some people off.
13. I hate myself.
14. I am afraid to leave school.
15. I want to go home sometimes.
16. I am best when there are people I like and I can talk to.
17. I am worst when people come at me all at once.
18. I need a friend.
19. I punish myself never.
20. I am hurt when others don't understand me.

Protocol 2

1. Sometimes I can get ecstatic over sun and grass.
2. I can't get the things I'd like to say out sometimes.
3. Sexual thoughts intrigue me occasionally.
4. I often wish I could have a little more insight, understanding.
5. There have been times when I have been deeply touched by very small things.
7. I secretly want very much to understand and be understood.
8. I feel a part of humanity, a necessary, vital part of something much bigger than I.
9. Loneliness depresses me.
10. I feel guilty about not having taken time to understand people.
11. I have an emotional need to love and be loved.
12. I regret having hurt many people.
13. I hate fakes.
14. I am afraid of hurting people who care about me, of being insensitive.
15. I never met anyone I couldn't care for if I only take the time.
16. I am best when I am surrounded by people whom I care for.
17. I am worst when I think too much about myself.
18. I need to care a little more about others, less about myself.
19. I punish myself by isolating myself.
20. I am hurt when anyone I care for disapproves of me.

The two examples were assigned virtually the same self-disclosure scores, 41 and 42 respectively, but the first subject had a dogmatism score of 180, while the second subject's was 130, a
difference of approximately two standard deviations. And most important, seven of seven judges thought the second protocol looked "healthier" than the first.

The impressions made by the two groups of protocols can be described as follows: On the whole, the less dogmatic subjects whose sentence blanks were rated "more healthy" had a wider perspective and mentioned a greater variety of attitudes toward themselves, others, and the rest of the world. They more often mentioned positive aspects of themselves and their lives and, though indicating no less need for love and acceptance, were interested in preserving and living by their own values. They were more objective about and accepting of themselves, sometimes mentioning how others saw them, and they saw themselves from more points of view: as different or lonely but at the same time an integral and worthwhile part of the world; as having acted both well and badly; as changing and changeable in a changing world; and as being able to influence what they could be. "More healthy" subjects responded with more scope and variety, were at the same time more specific and less absolute than the "less healthy"; they were more interested in relationships beyond those with their families, and their awareness extended more often to broader aspects of life, death, and the world. Inconsistencies seemed less extreme and indicative of self-contradiction, though
probably no less numerous. In tone their protocols seemed more self-aware, self-accepting, positive, humorous; and less discouraged at chaos and variety. The completions of "less healthy" subjects were shorter, stingy with words, and thus seemed tinged with reluctance; "more healthy" subjects, on the other hand, offered more words, and one senses a greater generosity, ease, and genuine willingness to give information.

To summarize: It seems fair to say that while some kinds of self-disclosure are positive signs, sheer quantity of self-disclosure would not seem in itself a reliable measure of a person's state of psychological well-being. More attention must be paid to the quality of what is disclosed, and the purposes which it serves, if research in this area is to proceed productively. The following discussion is meant to provide an indication of the kinds of considerations that might profitably be taken into account by future researchers.

Self-Disclosure: Failed Assumptions

Self-Disclosure as an Indicator of Mental Health

Writers in the area of self-disclosure have generally assumed that 1) high levels of self-disclosure indicate mental health, and 2) high levels of self-disclosure are necessary for the maintenance and enhancement of human potential. These two
assertions (made most explicitly by Jourard) will be briefly examined, and an attempt will be made to show how, without an emphasis on quality and purpose of self-disclosure, both assumptions fail.

It has been argued that much and intimate self-disclosure betokens a strong (that is, healthy) self-concept because the risks are frightening to anyone whose sense of worth is vulnerable. Most people in highly competitive American society assume that to reveal one's personal perceptions inevitably invites criticism and gives a competitive advantage to others who do not approve of certain aspects of one's feelings and behaviors or are eager to use information thus obtained for their selfish ends. Such an analysis suggests that only the person whose sense of worth is internally based or who has become relatively autonomous, and who does not think of himself as primarily a commodity whose worth is negotiable in the marketplace, can risk the full engagement in life reflected in candid self-disclosure.

This analysis is inviting but does not explain the many persons who seem at times only too willing to reveal personal aspects of their lives to others, and yet whose behavior seems to reflect not healthy self-concepts, but perhaps just the reverse. The following speculations, though not exhaustive, may help account for some of this kind of verbal behavior.
There seem to be people who feel personally inferior and assume that their "defects" are obvious to others. Rather than be considered defective and insensitive, such people may develop a "discounting" style of disclosure, broadcasting their open secrets to almost all listeners.

For others, being self-revealing may, in effect, be part of a self-destructive life plan. Some persons seem to have concluded that they are meant to fail in life and for any number of reasons, sometimes including the need for self-consistency, accept or actively work toward this goal. For people with such a construction of themselves, self-disclosure is not very risky, for they expect, even hope, that others will perceive them as "losers." Self-disclosure in this context may be construed as a hostile act towards the deserving self, or towards others who will react in punishing ways. People with this kind of life plan often have particular trouble talking about positive aspects of themselves, as though this might upset the role they have resigned themselves to.

Self-disclosure may serve as an attention-getting device and may also be a way of seeking assurances that one "isn't all that bad," or some such palliative. Similarly, high levels of self-disclosure, particularly if they contain much negative material, may be desperate attempts to signal that the individual is in trouble and wants help.
Talking about the self in apparently personal terms may actually allow some people to pursue the illusion of personal progress while avoiding the hard and sometimes painful work of doing something concrete about personal change. People will at times say anything to avoid what they are actually experiencing at the moment or to delay taking action. In some circles it is considered sophisticated to appear self-disclosing. In such contexts self-disclosing behavior may reflect socially approved or fashionable role playing, sometimes with little or no genuine commitment to self-exploration or personal communication. One is reminded of how long hair on men just a few years ago was some indication of a commitment to radical change in life styles, while for many men today it seems little more than a commitment to a youthful dress code.

Finally, high or low levels of self-disclosure may be a stylistic or cultural variable, having little or nothing to do with the relative condition of the self, but rather simply reflecting prevailing cultural, subcultural, or familial norms relating to self-disclosure within some given social context.
Self-Disclosure in the Maintenance and Enhancement of Human Potential

A second major assumption often made about self-disclosure is that it is necessary to the maintenance and growth of the healthy personality. In this vein, Fromm (1963) and others argue that a sense of being unknown and misunderstood--or being alone--is a fundamental human condition, causing crippling anxieties, and often driving man to life-defeating behaviors, for example, a retreat into authoritarianism. Legitimate relief from aloneness can be found in the activity of love, first self-love, then love for fellow man. But real and secure love relationships can only occur when those involved deeply know each other through reciprocal self-disclosure. For as long as the other person remains a mysterious object, what is loved must be a distorted image, perhaps a selfish projection of the lover's needs. Such writers maintain that only if the persons involved risk being known to each other and find that their relationship remains a loving one, can the basis for genuine security be formed.

One of the destructive features of being in love with a distorted image is that almost inevitably image-shattering truths leak through facades, often leading to resentment and a sense of betrayal. From the loved object's point of view, loneliness and
insecurity remain, since there is always at least the dim awareness that it is the presented facade, not the person, that is known and loved. A person in this relationship to another must continually expend energy guarding against disclosure of the inner self, and quite reasonably interprets attempts to change him to fit some idealized image as lack of acceptance. This lack of acceptance confirms his already deep suspicion that he fundamentally lacks worth—a suspicion which led him to present a distorted view of himself to the world in the first place. If a person is made to feel that major aspects of himself have to remain hidden, then it is easily reasoned (particularly during childhood, when basic self attitudes are formed) that there is something basically wrong with him. Why else would feelings which seem so natural be taboo? Perhaps this basic sense of wrongness generalizes to become a pervasive feeling of no-good-ness or incompetence, thereby creating a generalized expectancy of failure. The circle of fear, distortion, and loneliness thus tends to perpetuate itself, thwarting the need to form the sort of secure, loving relationship which seems fundamental to man's well-being.

Much bitterness and misunderstanding might be avoided if man would try to get in touch with his own feelings and then communicate honestly his perception of the world to others. It is assumed that such basic honesty, with all the risks that it entails, would also
eventually do much to relieve national and world tensions. Each individual, trying to be a bit more honest in his daily activities, working toward the day when openness and lack of hypocrisy become the norm rather than the exception, may be the place to begin. When people operate in an atmosphere where candidness in interpersonal relations is the norm, it follows that there should be a greater acceptance not only of self, but also of each other, as diminished levels of defensiveness make acceptance of other people's point of view a safe activity. This kind of environment encourages people to actualize their potential, since to do so is not threatening to others and therefore not actively discouraged by them. In fact, people should actively encourage one another to pursue individuality and self-actualization out of a sense of brotherhood and enlightened self-interest.

Therefore, appropriate self-disclosure would seem highly desirable in that it encourages the continued security, personal well-being, and interpersonal understanding and cooperation that men of good will have always sought.

Disclosure that fails. -- But appropriate has to be defined. One person's perception of what is appropriate in a situation may be perceived as utterly absurd by the next person. The mindless
expression of feelings may interfere with the needs of others and actually lessen the possibility of deepened communication.

One way to work towards a definition of appropriate self-disclosure is to ask: appropriate for whom and toward what ends? If one assumes that personal integrity is one goal, but that interpersonal trust, understanding, and continued communication are legitimate goals as well, then at times these needs will appear antagonistic.

Consider the interchange between Rasa Gustaitis, author of *Turning On* (1969), and Fritz Perls, a highly respected leader of the human-potential movement and an outspoken advocate of the expression of feelings "in the here and now."

Later, with other people, I will see Perls yawn openly, even falling asleep when bored, but . . . his responses are always genuine. . . . The same is true of his behavior outside of the seminar room. It is often rude, arrogant, inconsiderate—sometimes even outrageous. But he is always himself. Often he refuses to acknowledge any other encounter than the one that is completely natural and direct. This means that some people, including myself, at times freeze into rigid nervous hulks in his presence. But I will remember these dreadful moments later as educational. . . . I search out Perls in the dining room to ask him some theoretical questions. He seems willing to converse until I begin, 'Are dream figures always alienated parts of the self? It seems to me that . . . ' Perls lifts his hand in a gesture that stops me in mid-sentence. There is a pause. 'Fine spaghetti today,' he says pleasantly. But I turn mute. He has shattered my self-confidence. For days afterward I avoid direct meetings with him and when I somehow find myself face to face with him, I invariably burst out with some totally inane remark. (Gustaitis, 1969, p. 31)
According to this report, Perls' "always genuine" responses are often perceived by others as "rude, arrogant, inconsiderate--sometimes even outrageous," and likely to cause some people to "freeze into rigid nervous hulks in his presence." Even assuming that such genuineness is helpful to Perls' sense of integrity, whether or not this sort of behavior enhances prospects for the I-Thou relationships he says he is interested in, is questionable. In the I-Thou dialogue as Buber (1958) describes it, each person tries to display his experience of himself as it is in the moment. One of the goals is the demystification of the self in the other's experience. As dialogue continues, each person openly responds to the ongoing experience as it is affected by the exchange. Accurate acknowledgment of each other as each is, with no attempt to manipulate one another, is the goal and the reward. Assuming a build-up of trust and good will, it may be possible to share fairly harsh or role-breaking perceptions without disrupting the process toward deepening dialogue, but human frailties being what they are, it seems true that there are moments when spontaneous expression of feelings do not enhance the likelihood of mutual understanding. Instead, flight or other defensive behavior may be the result.
VI. RESEARCH PERSPECTIVES

This paper began with mention of the insistence of the human-potential movement on personal openness as the bedrock of human growth. It seems fair to end by suggesting that while self-disclosure probably plays an important part in building meaningful human relations, some qualifications are in order if people are going to be encouraged to be more self-revealing. Given a person's perceptions of what is an acceptable range of personalness in a particular situation, then disclosure that is either superficial or too intense or too revealing may equally interfere with subsequent communications. When people are confronted with self-disclosures that are perceived as inappropriate or threatening, they are likely to engage in self-protective measures that interfere with increased understanding. This may occur no matter how benevolent or well intentioned the discloser intends to be.

Jourard (1968), in an unfortunately brief discussion, has tried to bridge this dilemma by suggesting a mixture of honesty and judgment which he calls "relevant authenticity" (p. 82). Relevant authenticity calls for a commitment to deepened dialogue along with a
sensitivity to the other person's probable vulnerabilities. Disclosures that are likely to gratuitously cause the other person to grow defensive and cut off communications are either not made, or, better, are worded nondestructively. Presumably at any given moment there will be more than one authentic and relevant perception available to the speaker, and that will permit him to exercise some discretion without jeopardizing his integrity.

Perhaps if people are to be encouraged to be more self-disclosing, they should be kept aware of the delicate difference between disclosures which enhance, and disclosures which distract from, deeper communications.

If improved communication is acknowledged as a major reason for encouraging self-disclosure, then a useful line of research might be developed around the following tentative definition: appropriate self-disclosure is a revelation of self that increases the recipient's understanding without lessening the probability of his responding in kind; optimally, self-disclosure both allows understanding and elicits deeper disclosure in return. Using this definition, it may be productive to study the depth, timing, and other qualities of disclosures and their effects on communication. For example, remembering that nondogmatic high disclosers seemed in better touch with reality as defined in this study than dogmatic high
disclosers, it may be hypothesized that "healthier," more reality-oriented individuals will be more likely to fit their disclosures to the demands of each interpersonal situation than their less flexible counterparts.

A self-disclosure gradient may be conceptualized where as one proceeds with increased self-disclosure toward some optimal level, the receiver responds with mutually revealing disclosures. But if the sender should exceed what are perceived as the boundaries of the relationship's role and situational determinants or approach these boundaries too quickly or haphazardly, self-disclosure ceases to be reciprocated, and communication is cut off or disrupted.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogmatism</td>
<td>148.446</td>
<td>24.419</td>
</tr>
<tr>
<td>Self-disclosure</td>
<td>55.320</td>
<td>9.741</td>
</tr>
<tr>
<td>Smell</td>
<td>5.369</td>
<td>1.495</td>
</tr>
<tr>
<td>Taste</td>
<td>6.447</td>
<td>1.326</td>
</tr>
<tr>
<td>Touch</td>
<td>5.495</td>
<td>1.420</td>
</tr>
<tr>
<td>Hearing</td>
<td>7.437</td>
<td>1.026</td>
</tr>
<tr>
<td>Vision</td>
<td>6.864</td>
<td>1.221</td>
</tr>
<tr>
<td>Total acuity</td>
<td>31.553</td>
<td>3.223</td>
</tr>
</tbody>
</table>
### TABLE 2

**SCORES ON MEASURES OF DOGMATISM AND SENSORY ACUITY FOR LOW AND HIGH SELF-DISCLOSING GROUPS**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Low Self-Disclosers&lt;sup&gt;a&lt;/sup&gt; (N = 51)</th>
<th>High Self-Disclosers&lt;sup&gt;a&lt;/sup&gt; (N = 52)</th>
<th>One-Way Analysis of Variance</th>
<th>df 1/101</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Dogmatism</td>
<td>147.373</td>
<td>24.230</td>
<td>149.539</td>
<td>24.792</td>
</tr>
<tr>
<td>Smell</td>
<td>5.333</td>
<td>1.260</td>
<td>5.404</td>
<td>1.706</td>
</tr>
<tr>
<td>Touch</td>
<td>5.431</td>
<td>1.315</td>
<td>5.558</td>
<td>1.526</td>
</tr>
<tr>
<td>Hearing</td>
<td>7.549</td>
<td>0.986</td>
<td>7.327</td>
<td>1.061</td>
</tr>
<tr>
<td>Vision</td>
<td>6.471</td>
<td>1.102</td>
<td>7.250</td>
<td>1.219</td>
</tr>
<tr>
<td>Total acuity</td>
<td>31.039</td>
<td>2.932</td>
<td>32.058</td>
<td>3.438</td>
</tr>
</tbody>
</table>

<sup>a</sup>Low self-disclosers, M = 63.373, SD = 5.071; high self-disclosers, M = 47.423, SD = 6.011 (F = 211.447, df 1/101, p < .001).
### TABLE 3

**CORRELATIONS BETWEEN VARIABLES: TOTAL SAMPLE**  
*(N = 103 FEMALES)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Dogmatism</th>
<th>Self-Disclosure</th>
<th>Smell</th>
<th>Taste</th>
<th>Touch</th>
<th>Hearing</th>
<th>Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogmatism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-disclosure</td>
<td></td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smell</td>
<td>-.26&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taste</td>
<td>-.33&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.11</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch</td>
<td>-.35&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.06</td>
<td>.24&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.43&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing</td>
<td>.10</td>
<td>.03</td>
<td>.13</td>
<td>-.06</td>
<td>-.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vision</td>
<td>-.04</td>
<td>.21&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.09</td>
<td>-.08</td>
<td>-.19</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Total acuity</td>
<td>-.40&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.10</td>
<td>.56&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.65&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.65&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.21&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.22&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> p < .05  
<sup>b</sup> p < .02  
<sup>c</sup> p < .01
TABLE 4
SCORES ON SELF-DISCLOSURE AND ACUITY MEASURES
FOR LOW- AND HIGH-DOGMATIC GROUPS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Low Dogmatics&lt;sup&gt;a&lt;/sup&gt; (N = 52)</th>
<th>High Dogmatics&lt;sup&gt;a&lt;/sup&gt; (N = 51)</th>
<th>df = 1/101</th>
<th>Acuity Difference Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Smell</td>
<td>5.750</td>
<td>1.619</td>
<td>4.980</td>
<td>1.257</td>
</tr>
<tr>
<td>Touch</td>
<td>6.000</td>
<td>1.268</td>
<td>4.980</td>
<td>1.393</td>
</tr>
<tr>
<td>Hearing</td>
<td>7.308</td>
<td>1.112</td>
<td>7.569</td>
<td>0.922</td>
</tr>
<tr>
<td>Vision</td>
<td>6.962</td>
<td>1.267</td>
<td>6.765</td>
<td>1.176</td>
</tr>
<tr>
<td>Total acuity</td>
<td>32.769</td>
<td>2.948</td>
<td>30.314</td>
<td>3.036</td>
</tr>
</tbody>
</table>

<sup>a</sup>Low dogmatics, M = 128.558, SD = 14.903; high dogmatics, M = 168.765, SD = 12.548 (F = 218.959, df = 1/101, p < .001).
TABLE 5

CELL SIZE\(^{a}\) AND CELL MEAN ACUITY SCORES FOR ANALYSIS OF VARIANCE OF TOTAL ACUITY SCORES

<table>
<thead>
<tr>
<th>Self-disclosure</th>
<th>Dogmatism</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>( M = 29.9 )</td>
<td>( M = 33.7 )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( N = 23 )</td>
<td>( N = 27 )</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>( M = 30.5 )</td>
<td>( M = 31.8 )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( N = 27 )</td>
<td>( N = 26 )</td>
<td></td>
</tr>
</tbody>
</table>

\(^{a}\)Unequal cell size is the result of constructing cells through median splits on self-disclosure and dogmatism.
<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-disclosure (A)</td>
<td>1</td>
<td>10.061</td>
<td>1.267</td>
</tr>
<tr>
<td>Dogmatism (B)</td>
<td>1</td>
<td>168.125</td>
<td>21.171</td>
</tr>
<tr>
<td>A X B</td>
<td>1</td>
<td>41.340</td>
<td>5.206</td>
</tr>
<tr>
<td>Within cell</td>
<td>99</td>
<td>7.941</td>
<td></td>
</tr>
</tbody>
</table>

superscript aScores split at median.
superscript b<sup>p</sup> < .001
FIGURE 1
SENSORY ACUITY VS. SELF-DISCLOSURE

* $t = 5.81$, $df = 48$
FIGURE 2
SENSORY ACUITY VS. DOGMATISM

MEAN TOTAL ACUITY SCORE

Low
High

DOGMATISM

(33.7)
(31.8)
(30.5)
(29.9)

* t = 3.61, df = 48

p < .001

n.s.

disclosing

nondisclosing
APPENDIX A

Scoring Manual

The Greene Self-Disclosure Sentence Blank

Purpose and Scoring Procedure

The Self-Disclosure Sentence Blank is an attempt to standardize a method for scoring a subject's sentence completions for the degree to which he willingly reveals core aspects of his private and personal world. This procedure was developed under the assumption that although situational factors play an important role in moderating self-disclosure, a person's actual disclosures in an experimental situation will bear a useful correspondence to his general disposition to make himself known to others in his daily life.

The subject is asked to complete twenty sentence stems which have been designed to have "high pull" for self-disclosure. Although the subject's responses can be used for general interpretation in the same manner that a clinician trained in dynamic psychology uses projective material, this particular scoring procedure is not designed to take into account information about the subject which he in fact does not purposely disclose. This is important for the scorer to keep in mind so that he does not "read in" meaning to responses as he is scoring them. For example, if a female should respond to the stem, "I hate . . .," with "umbrellas," this may yield rich information for anyone interested in Freudian dynamics, but in keeping with the purposes of this scale, it would be scored as grossly evasive and unrevealing (Level Five).
Another error to guard against is the incorrect scoring of a response as unrevealing because the scorer finds it difficult to believe that the subject was serious in his responses. Such completions might be: "I feel . . . crazy," "I regret . . . my whole life," "I . . . fear this test too much," or, "I am worst when . . . I am sober." In all instances, the scorer is admonished to accept subject responses at face value, and to score each response, as it is written, for its closeness to what are likely to be core issues in a person's personal life. For example, both the completions, "I feel . . . with my hands," and "I feel . . . crazy," might not be meant seriously, but the scorer is to assume that they are, and to rate their revealingness accordingly. Thus, even if a subject is serious when saying that he feels "with his hands," he is still being grossly unrevealing of his personal life. But if a subject is taken seriously when he says that he "feels crazy," he is being quite open about an important aspect of his personal life. To repeat, all responses are to be judged by their verbal content, and not the inferred intentions of the subject.

The instructions for the Self-Disclosure Sentence Blank are intended to give the subject a clear understanding of what the examiner is interested in. These instructions are:

This sentence completion blank is designed to help gain an understanding of your basic feelings concerning yourself and your personal world. Please complete these sentences to express your real feelings, trying to be as frank as possible about matters which are personally important to you.

Try to do every sentence. Be sure to make a complete sentence.

These instructions are meant to say in effect, "I'd like to get to know you as well as possible in the short time we have together. Please tell me as frankly as you can what kind of person you really are deep down under the skin."

To score the subject's responses, the scorer assigns each response a scale value from 1 to 5, depending on its judged degree of revealingness. (Level One disclosures are very revealing; those at Level Five are evasive.) The responses can be scored in a relatively objective manner if the scorer (1) makes himself thoroughly familiar with the descriptions which provide the rationale for the five levels, and (2) compares each response with typical examples provided for each level in the scoring-by-matching section.
of this manual. The sum of the individual scale values for all stems provides the index of self-disclosure.

In order to minimize the tendency to score all responses in light of the over-all impression made by the subject, each completion is to be scored independently of all others, except when there is a clear reference to a previous disclosure. When scoring a number of individuals, each stem should be scored for all subjects before proceeding on to the next stem, that is, all stems numbered 1 before going on to all stems numbered 2, etc. If, while scoring a particular stem, the scorer should find a response which, in and of itself, makes little sense, the immediately preceding completions should be re-read to see whether or not the subject is continuing a train of thought from a previous disclosure. For example, if a completion number 4 should read, "I often wish . . . and pray they didn't," it would make little sense, as it stands alone. But if this subject's completion number 3 is found to read, "Sexual thoughts . . . possess me all the time and make me guilty," then completion number 4 gains meaning and revealingness when viewed as a continuation of this previous disclosure.

The scorer may find on occasion that despite his best efforts, he cannot decide at which of two levels a response best fits. In order to achieve some consistency in such cases, the response should be scored at the higher level of self-disclosure.

The Five Scoring Levels

The question to be kept in mind is this: How much does this disclosure, taken alone, and at face value, contribute to an understanding of this person's private and personal world? Or, to shift the emphasis slightly, how willing has this person been to allow the examiner to know him as he sees himself?

Level One

He reveals basic feelings and emotions of a personally relevant nature about a central aspect of his private and personal life. This material is likely to play a major role, or have a fundamental effect, on the shaping of a large part of the subject's personal as well
as public experience. His point of reference is his own inner experience—his own subjective world. He speaks as an internal observer reporting on internal events, even when the comment also includes mention of the external world.

What is disclosed is likely to be the sort of thing which one would never know unless told, and which would ordinarily be told only to a close and trusted friend. There is no attempt to present himself in a socially desirable manner. Facades are absent, and as a result, core constructs by which he maintains his identity and existence, as well as areas of extreme conflict, are likely to be directly and frankly discussed. For instance, statements concerning his self-image, his approach to fundamental interpersonal relationships, sexual conflicts, severe family problems, and strong feelings of personal confusion are likely to be scored at this level.

This self-disclosure, taken alone, and at face value, contributes significantly to an understanding of the subject's personal world of experience.

Level Two

He expresses feelings and emotions of "secondary" importance and/or of a less personal nature than at Level One. He may hint at or speak in a qualified or more distant way about material which might otherwise fall within Level One. Distance from the core theme may be along a dimension of person, place, time, intensity, or frequency. Disclosures at this level, while personally important, often tend to be more content and situation specific than at Level One. That is, the content does not play as major a role over as wide an area of the subject's life.

The focus remains, however, on internal experience which seems of direct relevance to the person's personal life. What is revealed would not ordinarily be said to casual acquaintances. He does not necessarily present himself in socially favorable terms. He seems to be honestly trying to express himself about important aspects of his subjective world, but is unwilling or unable to reach the degree of openness expressed at Level One. He does, however, purposely reveal something important and fundamental about his basic personality.
Level Three

He reveals important facts and/or details of an "external" nature. Material revealed at this level probably plays a major role in the shaping of the subject's public life. The focus of attention is generally not on his subjective inner experience, but rather on people and events in the world outside of himself, things happening to him, and things which he does. When feelings or emotions are expressed, they do not seem deep-seated or closely tied to the core constructs by which he maintains his identity and existence.

Although what is revealed is probably important to the subject and his public life, it might be revealed to a casual acquaintance, and in general would not prove embarrassing if publicly known. Some guardedness may be apparent, and personal statements of a socially undesirable nature tend to be avoided. Although this material may help in coming to know the subject, he is (purposely) revealing little or nothing of significance about his private, experiential world.

Level Four

He discloses facts and/or details of "secondary" importance and of an "external" nature. This material probably plays a relatively minor role in a limited area of the subject's life, and would appear to have little or no lasting effect on his moment to moment personal experience. His point of reference is clearly the external world, and he may speak as a detached, nominally interested external observer.

Guardedness is often apparent, and socially undesirable statements are almost nonexistent. What is revealed might easily be said to a stranger or made public without embarrassment. Problems, when they are mentioned at all, are never deep-seated or in any manner incapacitating. If feelings or emotions are expressed, they are distant from the core constructs by which the subject's identity and existence are defined. Minor incidents, facts, wants, beliefs, etc., may be disclosed, but their sphere of influence is quite likely to be content and situation specific, and relatively trivial when compared with what might be said about central areas of a person's personal or public life.
Vague or highly qualified reference may be made to material which might otherwise fall within Level Three. The subject may reveal strong negative attitudes, but only in socially approved ways.

Level Four statements help give the examiner very little, if any, understanding of the subject's personal and private world.

**Level Five**

Essentially neutral, meaningless, or grossly evasive material is offered at this level. Omissions are scored at this level, as well as stereotype answers, cliches, catch phrases, etc. The subject represents himself as having no real problems.

Statements at this level give the examiner no understanding of the subject's personal or public life.

**Scoring-by-Matching**

In the following pages, the protocol and the examples for scoring each stem are presented.
INSTRUCTIONS: This sentence completion blank is designed to help gain an understanding of your basic feelings concerning yourself and your personal world. Please complete these sentences to express your real feelings, trying to be as frank as possible about matters which are personally important to you.

Try to do every sentence. Be sure to make a complete sentence.

1. Sometimes I _________________________________
2. I can’t ______________________________________
3. Sexual thoughts ________________________________
4. I often wish __________________________________
5. There have been times when ______________________
6. My biggest problem is __________________________
7. I secretly ______________________________________
8. I feel _________________________________________
9. Loneliness _____________________________________
10. I feel guilty ___________________________________
11. I have an emotional need to ______________________
12. I regret ______________________________________
13. I hate _________________________________________
14. I am afraid ___________________________________
15. I _____________________________________________
16. I am best when _______________________________
17. I am worst when ______________________________
18. I need _______________________________________
19. I punish myself _________________________________
20. I am hurt when ________________________________
1. Sometimes I

1. like now, I completely lose faith in myself. have this feeling of extreme inferiority. wonder who I really am. become very depressed about matters I can't control. seriously wonder if life is worth living. feel so dumb.

2. think that it becomes hopeless. feel left out. feel that other people think I'm a snob. worry about getting old. feel like breaking things. feel like being left alone. want to run and hide on a quiet hill.

3. worry about something that has already happened. like to get drunk. feel unsure about what I really want to do after college. feel that I don't study and comprehend to my fullest capacity. wish I had completed college. get into things that I don't know anything about. think I'll never get anything done. try to do too much. wish I were out of school and working.

4. can't understand certain things. just feel like doing something different. can't concentrate on my studies. can't get enough sleep. think I should get better grades.

5. think Russia will overtake us in GNP. sleep. do some things--other times others. think sentence completion blanks should be outlawed. think only of you. wear a suit of silk on Sunday. wish I had a new car.
2. I can't _____

1. cope with reality once I get sexually aroused.  find a purpose in my life.  seem to understand myself.  give my parents the love they demand.  seem to fall in love or give anything of myself.  get over the terrible feeling of emptiness caused by the death of my father.  accept unqualifiedly our expected child.

2. really make up my mind what's right and wrong.  understand why I feel like I do sometimes.  argue with people--I usually remain quiet and cold.  stand people who waste time and especially if it's my time.  objectively discuss myself and my problems.  think as I would like to.  stand to have people mad at me.

3. do so well as I would like to at times.  stand sarcastic people.  understand why the world is full of hate and prejudice.  always do what I feel like doing.  do what I think I can do.  apply myself to what I should be doing.

4. understand math, try as I might.  express my thoughts on paper.  see going out when one has work to be done.  understand why people come to school just to fool around.  always do things the way I plan them.  stand boring classes and busy work.  seem to keep my checkbook balanced.

5. agree.  understand my English instructor.  eat a lot and laugh too.  understand this questionnaire.  ski very well yet, but I'm making progress.  think on Mondays.  fly.  wait till finals are over.
3. Sexual thoughts

1. dominate my mind, bother me and I dream about intercourse a lot, leave me bewildered, make me feel troubled, bring back too many bad memories, make me wish that I was married and could do whatever I wanted to do sexually and whenever I wanted to do it, make me ashamed and guilty as a Catholic.

2. interfere with religious and personal ideals, sometimes bother me, get to me just before I fall asleep, sometimes come to mind when I'm away from my girl, often interrupt my thinking on other topics, are with me frequently, but rejected.

3. should be allowed freer expression, occur when I see a sharp woman, occur frequently, have at times taken a good deal of my time, are encouraged in me by some foreign movies, sometimes make it harder for me to study.

4. stimulate dating, are natural, have their time and place, are prevalent in the world today, don't bother me, are included in my thinking like anyone else's, are not more significant to me than the average, bother me only slightly.

5. are sexual thoughts, occur to everyone at one time or another, are often funny, occur, are just thoughts, are good with popcorn, are the opiate of the people, are personal.
4. I often wish

1. I were a man (woman). I could communicate to other people the depth of my own experience. I could freely express my sexual lust for my boyfriend. that I didn’t feel guilty about masturbation when I do it. that I wouldn’t hate my parents as I do after I fight with them.

2. I was smart. I could feel at ease all the time. I could leave everything for a short while. I understood myself better. that I was more sure of myself. that I was more of an extrovert. that I were better looking than I am.

3. I were home with my girl (boyfriend). that I could see into the future. I were more capable. I was assured of a successful future. I didn’t procrastinate. that I could forget this nonsense about a college degree and just go into my father’s business.

4. I had already graduated. I could be a famous track star. I had a lot of money. I had enough money to do with as I pleased. to improve my grades. I were a senior in Graduate School.

5. I could just take an exciting trip. to do various and sundry things. that I had my own airplane. two plus two equalled five. there were more hours in the day.
5. There have been times when

1. I could have killed my mother. I wanted to kill myself. I felt everyone hated me. I have hated myself. I doubt my goals because they are in some of their facets the dramatic opposite of my beliefs. I felt worthless.

2. I just didn't give a damn about anything. I have questioned life in general. It was difficult to carry on. I could just sit and cry for an hour. I wish I could be someone else. I've felt that life is intolerable. I have wanted to talk to a psychiatrist whom I have faith will understand me. I have felt anxious.

3. I wanted to give up (school) and go home. I should have thought before speaking. I doubted that I am learning anything new. I wanted to be on my own. I wish I were doing something important. I wish I pushed myself harder.

4. I wanted to go home. I almost have. I just felt like giving up studying. my mind wanders. I feel I may fail out of college. I have cried. I feel like everything is going perfectly. I have had too many things to do. I wish I were finished with school. I was working to my capacity and did well.

5. I thought I wouldn't do something. dogs barked. there wasn't any time. I have wanted to move to California.
6. My biggest problem is _____

1. trying to prove to my mother that her faith in me wasn't wasted. that of running from myself. lack of love and emotional functions. trying to honestly evaluate myself. that I think too much about my faults.

2. finding a purpose for my life. indecisiveness. being so soft-hearted. finding a goal. keeping my mind away from home and on my studies. not being very smart. indecision as to my role as a young adult. deciding my future. thinking too much and always having to have an answer for everything. my relations with other people.

3. lack of education. what to do next. trying to think and talk logically and intelligently. at times--being shy when meeting someone. being away from my girl. accomplishing all that is before me.

4. money. procrastination. getting down to studying. getting good grades. keeping a study schedule. getting tired when I have too much to do. budgeting my time. avoiding the draft. having a good time out of life.

5. not getting enough sleep. peanut butter sticking to the roof of my mouth. reading pace. I don't have any big problems. filling out ambiguous questionnaires.
7. I secretly ____

1. envy others. hide my true feelings. dread the thought of death. feel confused. wish to fall in love. despise myself. feel emotions more deeply than I show outwardly. am quite afraid of interpersonal relations.

2. wish to be admired. hide my true feelings at times. wish I could change some of my traits and habits. tell some little lies sometimes. wish I could "stand up for my rights" more than I do. have done things in my life that society would frown upon. wonder if what I feel is authentic. don't like to conform.

3. would like to get married as soon as possible. wish to do many things which I probably never will. want to be called brilliant. would like to do something really daring. wish I were older with everything settled. wish I weighed less. feel society is a mess.

4. would like to own a small business. wish I had started college sooner. would like to be a lawyer or a psychiatrist. admire people with a variety of talent. think much of college is unnecessary. am bored at football games. wish that life could always be filled with happiness.

5. will not answer questions. plan to change my study habits. don't. prefer hot rods to sports cars. use the restroom. don't have many secrets. like bright ties.
8. I feel_____

1. lonely. as though I am alone in the world. that other people look
down on me. that a lot of my problems would be solved if I knew
what to do with my life. unsure of what makes life worth living.
a need to love people and have people love me. like a misfit.
like no one really cares.

2. strange about my existence on earth. uncertain about my future.
ridiculous sometimes. frighteningly alone at times. scared when
I go someplace alone for the first time. insecure with strange
people. that I am a good but not significant person. nervous
today.

3. older in years than I am. like I will never make it through school.
a need for more education and capital. proud to be myself. my
parents have brought me up very well. sometimes that I'll never
meet the right guy (girl). that I should strive to be realistic.
extremes--happy, dejected, etc.

4. people should be more tolerant of each other. tired most of the
time. as though I can graduate from college. very enthusiastic
about my new job. as though I'm not trying hard enough.
pressed for time and money. that the average person is completely
wrapped up in himself.

5. there are problems facing every American. that college is
important. like taking a long trip. happiest when happy--saddest
when sad. with my hands.
9. Loneliness

1. is constantly with me. only bothers me at night when I wish I could be in the arms of the one I love. makes me feel like dying. bugs hell out of me. is something I almost constantly feel although I have many "real" friends. is one of my biggest problems.

2. makes me unhappy and discouraged. has caused me to get into trouble. would be the last thing in the world that I would want. sometimes strikes me for both my roommates are engaged. sometimes causes me to get the "blues". I sometimes actually reject and sometimes I actually seek. I know it. is inherent in my type of personality.

3. is a death that is slow and painful. is only my imagination. is a very depressing feeling. occurs now and then but really quite seldom. is a feeling I try to overcome. is something I experience occasionally and do not like. is a boyfriend 900 miles away.

4. is common to everyone. is sometimes good. is felt by all sometime or another. is a problem that everyone has to solve for himself. surrounds us. is a natural feeling and not necessarily an unhappy one. is a problem with many. is frustrating, but is the best time for introspection.

5. is probably a very sad feeling. I never experience it. is not my problem. is a human trait. is relative. can teach us something. is never a part of my being.
10. I feel guilty_____

1. about hurting my mother's feelings. about playing with people's emotions. when I do not do what pleases my parents and what is decreed by my religion. about my secret thoughts and desires which I don't fully understand. when I hurt someone purposely. when I have had intercourse with someone I don't love.

2. about sex without love. about going against my parents. not knowing Christianity. rather seldom but when I do it is intense guilt. when I hurt people. when I do something which is socially not acceptable and then rationalize my way out of it.

3. about events in my past. about not exploiting my abilities fully. when I lose my temper. less often now. when I don't fulfill responsibilities that are mine. about being selfish at times. when I do not attend church regularly.

4. about not studying. when I get bad grades. once in a while (if I do something I'm sorry for). about wasting money. about not getting all A's. about not using my time effectively. because I didn't kiss my wife goodbye this A.M. very rarely.

5. about nothing. when I cut classes. when I come to class unprepared. that I don't feel guilty. when I take the last potato in the stew.
11. I have an emotional need to ______

1. find someone to trust. become a Christian. be understood. justify every action I make. verbally attack others. have someone completely understand me.

2. feel superior. talk over my problems. be alone so I can think. be with people very much. feel appreciated by my parents. be ahead of others--to win the game. have others like and accept me. find direction, not security, but direction.

3. let myself "go" at times. gain more education. make more friends. be equal to or superior to others. succeed. achieve satisfaction through friends and success. help any person appealing for support and help. be around people. be independent. feel important.

4. keep going. have good discussions. satisfy my mind by learning. always think of others. meet girls. feel that I am making a contribution. take off a year without having to worry about every penny.

5. be nervous on mid-terms. get up and take a walk between studying subjects. drive around not doing anything. live. scratch.
12. I regret _____

1. breaking someone's heart or having someone break mine. that I can't live until I want to die. growing up. that I cope with my problems so poorly. that I am unable to open myself up to anyone. my parents' disappointment in me.

2. that I am not smarter. wrong or bad things I say to people without thinking. that my parents no longer agree with me always. throwing away two chances for a happy marriage. having to bother people with my problems. not standing up for what I believe at all times. that I was not more appreciative of my parents when I was younger.

3. my high school days and attitudes. I haven't taken full advantage of all the opportunities I've had. that I have disliked some people. not having written home more often. not being friendly with many types of people. that I didn't have direction when I entered college.

4. not having studied harder in high school. that I have a poor vocabulary. that I have wasted my first year of college. not being able to see everything at once. not going to school in Cleveland. joining the army. wasting time.

5. only three things in my life. not studying 5 years ago. I didn't take math in high school. that I have but one life to give for my country. signing up for this. not having more hours per day to do things. nothing I have ever done in my life. nothing. that I am so tired.
13. I hate _____

1. anyone who crosses me and will never forget it. people who always gripe at me and tell me what to do. myself. myself when I fail to cope with life.

2. to feel lonely and frustrated. not having a beautiful "Hollywood" body. being made a fool of. to be humiliated. it when I try to say one thing--but it comes out another. to have people dislike me. when hate is needed to fulfill a man's need. to think of the stupid things I've done.

3. hypocrisy and society's values. doing things that I know I can't do. being told lies. people who hate me. to do things wrong. not having any definite plans for the future. to associate with people who aren't stimulating. to hurt other people. the thought of all the misery in the world I am doing nothing about.

4. loudmouths. war. to go into any kind of military service. people who over-rate themselves--phonies. the idea of religious intolerance. people who do not have any consideration for others. leaving my girl to come to school.

5. nothing. interruptions. liver. to use the word "hate". to be behind in my studies. having my car refuse to start on cold mornings. very few things.
14. I am afraid ______

1. of destroying myself spiritually. that I won't make my parents proud of me. to be alone. I will die early in life. to become too dependent on one thing or one person. of not being wanted. of being alone in the world without friends.

2. that I will not be able to succeed in life. to express my religious beliefs because I am uncertain of my own ideas. to admit the truth sometimes. I sometimes drift away from spiritual devotion. to let myself go. I may lose the respect of my peers (but I doubt if I ever will). sometimes to assert myself. of not understanding my motives. that I will never marry.

3. that I will not have enough excitement in life. that I don't apply myself when I should. many times of saying the wrong thing. that I am missing something by spending my youth in school. when I'm not always doing the right thing. of the possibility of not choosing the right girl to marry.

4. to see what my friends will be like. of what people do to themselves. only during the time of war. of anything (bugs, insects, animals) that crawls. that I might have trouble with finals. I'm slipping academically. of walking in dark alleys at night. of a nuclear war.

5. of nothing. to take my sociology mid-term Thursday. that I am boring you with this. that I nor anyone else knows the "Truth". only of snakes. before tests. of petticoat laces and pussycat faces.
1. I lack the confidence needed to help me succeed in life. wish I knew if I am really mature enough to make my own decisions (which are contrary to my parents') about school, vacations, and marriage. I am the most important person to myself. I have an emphatic need to respect myself above all else.

2. I often feel as though I think about life too much. I am searching for greater self-understanding. I want most out of life what God wants me to be. I want to be happy, i.e., satisfied with myself. I am a person who thinks, talks, and acts as no other--I am an individual. I was happiest between the ages of 1-12.

3. I want to be liked and an asset to society and my family as long as I live. I wish I could become well talented in some field. I have very basic goals in life that I am proud of. I love to talk and listen to people. I know I can do college work and will try my best because I don't mind work if I know there is a goal. I want to be happy. I believe that "sorry" is one of the most futile words in our language. I am very confused about where to go after graduation.

4. I like girls (boys). I have no real personal problems about school. I will make it through college--if not this time I will come back. I hope I can pass, meet girls, and get at least a 3 point. I play the game as hard as I can. I want to graduate from Ohio State University. I would like to travel all around and meet many new people, etc. I am a Catholic. I am a woman. I hope that I will get into work that I will really enjoy.

5. I think that many factors have helped to influence my study habits and my outlook of college. I enjoyed taking Psychology 411 this quarter. I am looking forward to the dance next Friday. I know not whence I came nor where I will go. I am. I would most of all like "A" in Kiesler's course. I love warm weather and all that goes with it.
16. I am best when ____

1. another person and myself are able to communicate. I can dominate a conversation with peers or superiors. I can maintain my self-respect and integrity. I can trust my experience of the moment.

2. when I earn respect from someone important to me. I am sure of myself or of the knowledge which I possess. I am playing the "role". I am calm and have control over my actions. I am happy and relatively unguarded emotionally. I'm convinced and determined.

3. I'm happy for everything is going right my way. talking about or doing something with which I am familiar, look well and feel well. I think I'm doing my best. under some pressure. I'm with my friends. I have done a good job. leading or organizing something.

4. I am sticking to a schedule I have outlined. I am happy. I work to capacity. things are going my way.

5. I can entertain. I've had plenty of rest. I forget it. at a football game. sleeping. the lights are low.
17. I am worst when _____

1. I have been hurt and my defenses are up. I feel I have not been true with myself. I am desperately trying to impress someone, confused and uncertain about myself, overcome with worries and irritations. I am experiencing failure. I am "myself". I destroy.

2. I don't get my way. I have just done something well and tend to bask in laurels too long. I am among people who are indifferent to me. I'm depressed. I'm mad at myself. I have experienced failure. I am with a group of people.

3. I am in a bad mood. I don't understand something. I'm upset or sick. I have a lot on my mind. overconfident. under no pressure. in arguments, i.e., I usually lose. my mind is not on what I'm doing.

4. doing something uninteresting. I am tired or in a hurry. I have nothing to do. it's midnight and I don't like the people I'm with. I don't feel well physically. I am terribly tired.

5. get up on Monday morning. I try to figure it out. sitting in the "Playboy Club". I have had very little sleep. at an exam. guess? I think I'm at my worst. I haven't had my coffee at breakfast.
18. I need

1. to be wanted and appreciated, to feel secure and loved at all
times. the fellow I am dating, friends, love, respect, money,
education. God. to overcome an emptiness inside me. to respect
myself more.

2. approval. more self-confidence and money. other people.
direction. a wife with the same basic underlying understanding,
feelings, etc., that I have. to keep my close relationship with my
family and friends to be happy. to feel that life is worth it and I
am accomplishing something.

3. a good look at myself now and then. the companionship of others.
more ambition and skill. freedom to think. to be actively
involved in helping others. reinforcement. money, the answer to
all problems. to make things, to create and design.

4. to have a good time once in a while. more time. to complete
some of my responsibilities. variety. time to do what I really
want to do. many things. to start doing something.

5. to budget my time better. money for my fiancee's birthday gift.
the same things other people do. a ride to Florida over spring
vacation. a car. a ride to school on Mondays.
19. I punish myself ______

1. by trying to help others and then finding that I'm just being taken advantage of. most when I feel rejected or I have rejected someone else. too deeply and too often.

2. continually. constantly. for things I've said which I feel have hurt someone. over matters long ago past. for my own shortcomings. when I fail miserably to meet my expectations. for unintentionally hurting others.

3. by unnecessarily worrying about details which later are dismissed. whenever I make a bad mistake. for misconduct. when I don't meet my own goals. when I behave stupidly. by thinking too much.

4. very little. only if I think I need it. never that I am conscious of. when I don't study. less than most. as infrequently as possible. by dieting strenuously. by studying instead of going out on week-ends.

5. never. when I have eaten too much. for eating crackers in bed. by hanging by my thumbs. by walking to school instead of buying a car.
20. I am hurt when ____

1. I am not appreciated by those I love. My friends forsake me for something better. I feel I am not wanted or needed. I feel insignificant. I have not had the integrity to be myself. I want to give love but the other person doesn't care for me. A dog dies, when the spirit of a girl is quieted, when a love I believed I had is shown to be false.

2. I am not appreciated. Someone else condemns me. I think I've been left out, I am ignored. I feel I have been used. People question my integrity. I am laughed at by a girl. I find someone doesn't trust me enough to confide in my thoughts and beliefs. My affection for someone isn't returned.

3. Something I want or plan for doesn't go my way. My work is not appreciated. Others misunderstand something I say or do. I discover people don't like me. Insulted. People I care for misinterpret something I want them to understand. People don't fulfill their promises to me.

4. I score low on any test. My desires are not fulfilled. I see the feelings of others hurt. Someone ridicules another in public.

5. Someone steps on my toe. I feel physical pain. I sit on a hard classroom chair.
APPENDIX B

Taped Auditory Task Instructions and Test

You are about to make some judgments to determine how accurately you can distinguish sounds from one another. In a few moments you will hear a practice set of three different tones. Listen carefully. You will be asked to judge if the middle tone is closer to the first or the third tone in pitch. If the middle tone is closer to the first in pitch than it is to the third, draw a line in the practice space on your answer sheet connecting the middle tone to the first tone. On the other hand, if the middle tone is closer to the third tone, draw a line from the middle to the third. The practice tones are about to begin: [three-second pause], 500 cycles per second (cps) for four seconds, (two-second pause), 1,000 cps for four seconds, (two-second pause), 1,300 cps for four seconds.] Now mark your judgment on the answer sheet. [fifteen-second pause.] The middle tone was closer to the third tone on this practice set, so you should have drawn a line between the middle and the third tone in the practice space. If you are at all unsure at this point about what you are being asked to do, signal the experimenter and he will answer your questions. (Pause 5 sec) If not, we are about to begin the first of nine trials. After you hear the tones, you will have a few moments to mark your judgment in the space for the appropriate trial on your answer sheet.

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97
This is trial 5:
  pause 1000 cps pause 1650 cps pause 500 cps pause
This is trial 6:
  pause 500 cps pause 1000 cps pause 1650 cps pause
This is trial 7:
  pause 4000 cps pause 1200 cps pause 2000 cps pause
This is trial 8:
  pause 2000 cps pause 4000 cps pause 1200 cps pause
This is trial 9:
  pause 1200 cps pause 2000 cps pause 4000 cps pause

You have completed the hearing part of this study. The experimenter will now give you instructions for making similar judgments using your senses of taste, smell, touch, and sight. Please take your earphones off now.
Auditory Judgment Answer Sheet

Name: 

Date: 

Listen carefully to the tape recording.

If the middle tone in a three-tone set is closer to the first tone in pitch than it is to the third, draw a line connecting the middle and first tones in the proper place on this answer sheet:

first  middle  third

If the middle tone is closer to the third, draw a line connecting these two:

first  middle  third

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APPENDIX C

**Visual Acuity**

(Rectangle size in inches within parentheses; correct answers underlined.)

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<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>C(1 X 2-7/8)</td>
<td>A(1 X 2-1/2)</td>
<td>B(1 X 2-3/4)</td>
</tr>
<tr>
<td>3</td>
<td>A(1/2 X 2-1/2)</td>
<td>B(1/2 X 2-3/4)</td>
<td>C(1/2 X 3-1/8)</td>
</tr>
<tr>
<td>4</td>
<td>B(1-1/2 X 1-3/4)</td>
<td>C(1-1/2 X 1-7/8)</td>
<td>A(1-1/2 X 1-1/2)</td>
</tr>
<tr>
<td>5</td>
<td>A(1 X 2-1/2)</td>
<td>B(1 X 2-3/4)</td>
<td>C(1 X 2-7/8)</td>
</tr>
<tr>
<td>6</td>
<td>B(1/2 X 2-3/4)</td>
<td>A(1/2 X 2-1/2)</td>
<td>C(1/2 X 3-1/8)</td>
</tr>
<tr>
<td>7</td>
<td>C(1-1/2 X 1-7/8)</td>
<td>A(1-1/2 X 1-1/2)</td>
<td>B(1-1/2 X 1-3/4)</td>
</tr>
<tr>
<td>8</td>
<td>B(1 X 2-3/4)</td>
<td>C(1 X 2-7/8)</td>
<td>A(1 X 2-1/2)</td>
</tr>
<tr>
<td>9</td>
<td>A(1/2 X 2-1/2)</td>
<td>C(1/2 X 3-1/8)</td>
<td>B(1/2 X 2-3/4)</td>
</tr>
</tbody>
</table>
APPENDIX D

Tactile Acuity

(Dowel diameter in inches; correct responses underlined.)

<table>
<thead>
<tr>
<th></th>
<th>Order</th>
<th>Repeat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial 1</td>
<td>1/8 1/4 3/16</td>
<td>1/8</td>
</tr>
<tr>
<td>Trial 2</td>
<td>3/16 1/4 1/8</td>
<td>1/4</td>
</tr>
<tr>
<td>Trial 3</td>
<td>3/16 1/8 1/4</td>
<td>3/16</td>
</tr>
<tr>
<td>Trial 4</td>
<td>1/2 5/8 3/8</td>
<td>1/2</td>
</tr>
<tr>
<td>Trial 5</td>
<td>5/8 3/8 1/2</td>
<td>3/8</td>
</tr>
<tr>
<td>Trial 6</td>
<td>3/8 5/8 1/2</td>
<td>5/8</td>
</tr>
<tr>
<td>Trial 7</td>
<td>3/4 1 5/8</td>
<td>1</td>
</tr>
<tr>
<td>Trial 8</td>
<td>5/8 1 3/4</td>
<td>5/8</td>
</tr>
<tr>
<td>Trial 9</td>
<td>3/4 5/8 1</td>
<td>3/4</td>
</tr>
</tbody>
</table>

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TACTILE STIMULUS BOARD

BOX FOR CONCEALING STIMULI

Experimenters end (open)

Subject's end
APPENDIX E

Olfactory Acuity

(Amount of sample and order of presentation; correct responses underlined.)

Each of the brown sixty-milliliter bottles held forty milliliters of solution. Numbers represent the amount of mouthwash in each bottle. Where necessary, distilled water was added to bring the volume in each bottle to forty milliliters.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Trial 1</td>
<td>Micrin</td>
</tr>
<tr>
<td>Trial 2</td>
<td>Listerine</td>
</tr>
<tr>
<td>Trial 3</td>
<td>Lavoris</td>
</tr>
<tr>
<td>Trial 4</td>
<td>Micrin</td>
</tr>
<tr>
<td>Trial 5</td>
<td>Listerine</td>
</tr>
<tr>
<td>Trial 6</td>
<td>Lavoris</td>
</tr>
<tr>
<td>Trial 7</td>
<td>Micrin</td>
</tr>
<tr>
<td>Trial 8</td>
<td>Listerine</td>
</tr>
<tr>
<td>Trial 9</td>
<td>Lavoris</td>
</tr>
</tbody>
</table>
APPENDIX F

Gustatory Acuity

(Concentration of sample and order of presentation; correct responses underlined.)

Numbers represent milliliters of Kool-Aid powder per four hundred milliliters of water.

<table>
<thead>
<tr>
<th>Flavor</th>
<th>Order</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3</td>
</tr>
<tr>
<td>Trial 1</td>
<td>orange</td>
</tr>
<tr>
<td>Trial 2</td>
<td>grape</td>
</tr>
<tr>
<td>Trial 3</td>
<td>punch</td>
</tr>
<tr>
<td>Trial 4</td>
<td>orange</td>
</tr>
<tr>
<td>Trial 5</td>
<td>grape</td>
</tr>
<tr>
<td>Trial 6</td>
<td>punch</td>
</tr>
<tr>
<td>Trial 7</td>
<td>orange</td>
</tr>
<tr>
<td>Trial 8</td>
<td>grape</td>
</tr>
<tr>
<td>Trial 9</td>
<td>punch</td>
</tr>
</tbody>
</table>

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