A FACTOR ANALYTIC STUDY OF SEMANTIC STRUCTURES OF CLOSED, OPEN, AND MEDIUM BELIEF-DISBELIEF SYSTEMS

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ABSTRACT

A FACTOR ANALYTIC STUDY OF SEMANTIC STRUCTURES OF CLOSED, OPEN, AND MEDIUM BELIEF-DISBELIEF SYSTEMS

by Daniel Francis Wozniak

The purpose of the study was to describe the semantic structure and semantic differential scale position usage associated with differences in cognitive structure as indexed along a closed-open belief-disbelief continuum.

According to Osgood, one of the basic ways in which individuals or groups might differ would be in the underlying dimensions of judgment they use in differentiating connotatively among concepts. Results of previous factor analytic studies of semantic structure suggest that judgmental frames tend toward maximal simplicity but that differences from the general tendency occur and could be associated with personality variables.

Rokeach theory research findings associate differences in cognitive structure with differences in cognitive processing styles characterized as a tendency toward simplicity for closed belief systems and a tendency toward multidimensionality or complexity for open belief systems.

In the present study, it was hypothesized that samples of individuals differing in cognitive structure would differ in the nature and the number of semantic structure dimensions required to account for judgments. Structures were defined as similar in nature to the extent that (1) similar scales, similarly loaded, described the factors, and (2) the factors were identified as similar on the basis of inspection and computation of indices of factorial similarity. The number of

factors extracted, using the Kiel-Wrigley criterion to limit factoring, served as an index of simplicity or multidimensionality of semantic space--the structure with the fewest factors defined as tending toward simplicity. In scale position usage, it was expected that closed more than open subjects would tend toward 1 and 7 scale positions which were assumed to be simplest and easiest to make and indicative of dichotomous, black-white type of judgments. Open more than closed subjects were expected to tend toward 2, 3, 5, and 6 positions assumed to be most difficult to make and indicative of relatively more discriminating and finely graded types of judgment. Open more than closed groups also were expected to tend to use the 4 position assumed to be intermediate in difficulty and indicative of maximal conflict or ambivalent types of judgments.

Cognitive structure differences were indexed in terms of responses to the Rokeach 40-item Form E Scale which is assumed to measure the relative degree of closedness or openness of a belief-disbelief system. Subjects, 241 college freshmen, were categorized into closed, open, and medium types on the basis of their Rokeach scale scores.

The semantic differential consisted of 19 stimulus concepts and 40 scales with seven positions between each pair of bipolar adjectives. Concepts were chosen to represent categories used in the Osgood Thesaurus study of semantic structures and five adjective pairs were selected to represent each of the eight dimensions yielded in the Thesaurus study factor analysis.

Data for the three groups were computed separately. Methods of analysis included computing means and standard deviations for the 19

concepts and 40 scales for each group and correlations for each scale with every other scale for each group. Each of the correlation matrices was factor analyzed by the Principal Axes method with Varimax rotations.

As far as the evidence was developed in the study, it appeared that the semantic structures of samples of individuals at the closed and open ends of the belief-disbelief continuum tended to be similar but different from the structure of individuals at the middle of the continuum. Factors for closed and open samples were identified as evaluative, dynamism, predictability, and sensory-ennui. For the medium group the factors were identified as evaluative, activity, potency, and tautness. Of the three experimental types, the medium group's dimensions most resembled the Thesaurus study major dimensions (evaluative, activity, and potency).

Using the Kiel-Wrigley criterion, six factors were extracted for closed, five for open, and four for medium groups. In scale position usage, closed more than open systems tended to make 1 and 7 responses and open more than closed tended to use the 4 position. No statistically significant differences were found between open and closed tendencies to utilize 2, 3, 5, and 6 positions. Differences between closed and open subjects in their meanings of highly favorable and highly unfavorable concepts were statistically significant along the evaluative dimension but not along other dimensions.

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By

Daniel Francis Wozniak

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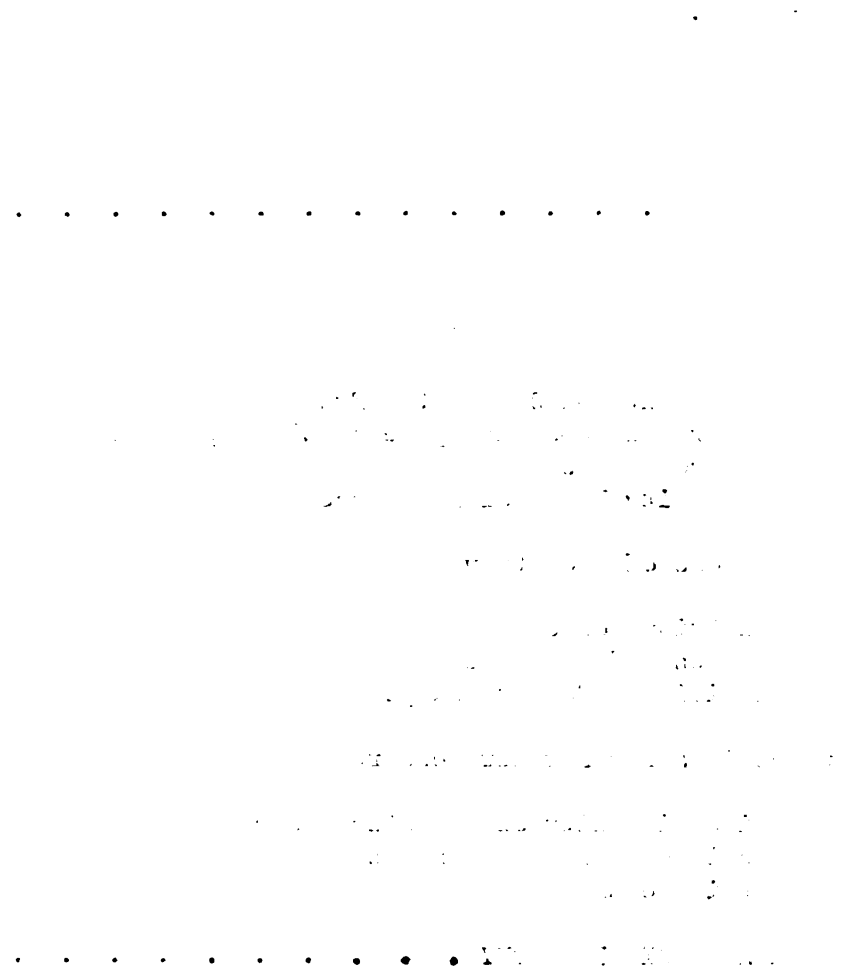

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CHAPTER I

INTRODUCTION

The purpose of this study is to describe the semantic structure associated with differences in structure of the belief-disbelief system.

Specific objectives are:

1. To describe the dimensions of semantic space of three groups of college undergraduate students differentiated on the basis of relative closedness or openness of the belief-disbelief system structure (closed, medium, and open groups).

2. To describe their semantic differential scale checking behaviors.

3. To describe the meanings for selected concepts for closed and open types.

Questions explored by the study include:

1. Will the semantic differential differentiate closed, medium, and open belief-disbelief system individuals?

2. Will the location of a belief structure along the closed-open continuum permit predictions regarding the semantic dimensions employed in making meaningful connotative judgments of given categories of concepts?

3. To what extent are dimensions of semantic space found in other factorial studies using college undergraduates generalizable to similar subjects differentiated in terms of relative closedness or openness of the belief-disbelief system?

In the present investigation, it is hypothesized that differences in cognitive structure as indexed by the degree of closedness or openness of a belief-disbelief system are associated with differences in semantic structure.

These differences are expected in the number, and nature of dimensions employed in making meaningful connotative judgments of

concepts. Also, differences in relative closedness or openness along the belief-disbelief continuum are associated with differences in scale position usage on the semantic differential. Relatively closed individuals should tend toward dichotomous polarized responses rather than toward more discriminating judgments.

Relatively closed and open system individuals should differ in their meanings toward specific concepts. Profiles for examining these meaning differences are presented in a later chapter of this study.

Instruments used were the Rokeach 40-item scale which indexed the relative degree of closedness or openness of the belief-disbelief system and the semantic differential using 19 concepts and 40 adjective-pair scale items.

Responses from 241 college freshman English students were analyzed using the following methods:

1. Computing means and standard deviations for each concept and across concepts on each scale for the three types.
2. Computing interscale correlations for each scale for the three groups.
3. Computing Principal Axes factor analysis with Varimax rotations.
4. Computing indices of factorial similarity.
5. Computing frequency of scale positon usage across selected concepts for each group.
6. Drawing meaning comparison profiles for each concept for each group.

Description of Major Constructs

Closed and Open Belief-Disbelief System Construct

Rokeach's (1960) cognitive organization model consists of three major dimensions: belief-disbelief, central-peripheral and time. Each has a number of characteristics and properties but all are reducible to a single dimension--organization along an closed-open dimension.

Belief-Disbelief Dimension. Rokeach's theoretical framework assumes that the structure of a person's beliefs consists of two independent parts--a belief system and several disbelief subsystems collectively called disbelief system. It is assumed that the belief-disbelief system represents an organization of all beliefs and disbeliefs, sets, or expectancies which are verbal or nonverbal, implicit or explicit, conscious or unconscious and which represent the individual's cognitive map of the world--each man's total framework for understanding the social and physical universe.

The belief system represents all of the beliefs, sets, expectations, or hypotheses, conscious, unconscious, or preconscious that a person at a given time accepts as true of his world.

The disbelief system represents a series of subsystems which contain all of the disbeliefs, sets, expectancies, conscious and unconscious that a person at a given time rejects as false. These disbelief subsystems are assumed to fall along a continuum, their places on that continuum determined by the degree of similarity to the belief system.

Central-Peripheral Dimension. Rokeach (1960) sees the belief-disbelief system organized in terms of three regions: central, intermediate, and peripheral. The central region represents primitive

beliefs--all those a person has acquired about the nature of the world, the nature of the self, and the generalized other. Other beliefs, intermediate and peripheral, are assumed to emerge from primitive beliefs.

The intermediate region represents the beliefs a person has about the nature of positive and negative authority and the people who line up with authority and on whom he depends to help form a picture of the world.

The peripheral region represents the beliefs derived from authority which fill out the individual's details of his world map.

Time Dimension. The time dimension refers to a person's beliefs about the past, present, and future and the way they are related. A broad time perspective individual bases his beliefs and anticipation about the future upon an awareness of his past and present. A narrow time perspective individual is preoccupied with either the past, present, or future.

Structural Interconnections Among Beliefs. Another property of the belief-disbelief system is the relative degree of isolation or communication among beliefs and disbeliefs. One end of the continuum represents no communication (high degree of isolation) and the other end represents high communication (low degree of isolation) among beliefs and disbeliefs.

Differentiation, articulation, or richness of detail is another way belief-disbelief systems may vary. The degree of discrepancy in knowledge, things believed and disbelieved, may be considered an index of relative degree of differentiation of beliefs as compared with the disbelief system.

Definition of Relative Closedness or Openness. It is assumed that the three dimensions (belief-disbelief, central-peripheral, and time) are all intercorrelated to such an extent that they are all reducible to a single dimension: organization of the total cognitive system along a continuum from closed to open.

With respect to organization along the belief-disbelief continuum, the characteristics which define a system as either open or closed include:

1. In open systems the magnitude of rejection of disbelief subsystems is relatively low at each point along the continuum while in closed systems the magnitude of rejection of disbelief subsystems is relatively high at each point along the disbelief continuum.

2. In open systems there is communication of parts within and between belief and disbelief systems, while in closed systems there is isolation of parts within and between belief and disbelief systems.

3. In open systems there is relatively little discrepancy in the degree of differentiation between belief and disbelief systems. In closed systems there is relatively great discrepancy in the degree of differentiation between belief and disbelief systems.

4. In open systems there is relatively high differentiation within the disbelief system. In the closed system there is relatively little differentiation within the disbelief system.

With respect to the organization along the central-peripheral dimension, the characteristics defining a system as closed or open include:

1. In open systems the specific content of primitive beliefs is that the world or the situation one is in at a particular moment, is a friendly one, while the closed system primitive belief content is that the world, and/or the situation is a threatening one.

2. In open systems the formal content of beliefs about authority and about people who adhere to systems of authority is to the effect that people are not to be evaluated according to their agreement or disagreement

with such authority. In closed systems, the formal content of beliefs about authority and about people who adhere to systems of authority is that authority is absolute and that people are to be accepted and rejected according to their agreement or disagreement with such authority.

3. The structure of beliefs and disbeliefs for the open system perceived to emanate from authority is that its substructures are in relative communication with each other. For closed systems the structure of beliefs and disbeliefs perceived to emanate from authority is that its substructures are in relative isolation from each other.

With respect to the time-perspective dimension, open systems have a relatively broad time perspective, while closed systems have a relatively narrow, future-oriented time perspective.

Measurement of Closedness or Openness. Rokeach devised the "dogmatism scale" whose primary purpose was to measure individual differences in closedness and openness of belief systems. It is also designed to measure general authoritarianism and general intolerance. The scale purports to measure not only closed systems of thinking and believing but also the rejection of ideas and people perceived to threaten a closed system.

High scorers on the Rokeach scale are defined as relatively closed belief-disbelief systems and low scorers imply a relatively open system.

Definition of Meaning

In this study, meaning is defined within the general framework of learning theory--Osgood's mediation hypothesis--as a cognitive state identified with a representational or symbolic mediation process that takes place between a stimulation and an overt response in a sign-producing organism. Meaning is a psychological process which a sign evokes after the organism receives a sign-stimulus and before the

organism produces a sign-response. (See Osgood, Suci, and Tannenbaum, 1957, ch. 1 and Osgood, 1953, ch. 16 and pp. 680-727).

Stated in more formal language (Osgood, Suci, and Tannenbaum, 1957, p. 6):

> Whenever some stimulus other than the significate is contiguous with the significate, it will acquire an increment of association with some portion of the total behavior elicited by the significate as a representational mediation process.

Significate is the term applied to any stimulus which in a given situation regularly and reliably produces a predictable pattern of behavior. The sign is the "other stimulus" which acquires an increment of association with some portion of the total behavior elicited by the significate.

In the words of Osgood et al. (Osgood, Suci, and Tannenbaum, 1957, p. 7):

> A pattern of stimulation which is not the significate is a sign of that significate if it evokes in the organism a mediating process, this process (a) being some fractional part of the total behavior elicited by the significate and (b) producing responses which would not occur without previous contiguity of non-significate and significate patterns.

Measurement of Meaning. Since meaning, defined here as a representational mediation process, is internal and cannot be observed directly, overt instrumental responses can be used as indices of these internal processes. Osgood, Suci, and Tannenbaum (1957, chs. 1, 2, 3) use an instrument called the semantic differential to index the meaning of a sign. The semantic differential is an attempt to use language output as an index of meaning or mediating processes. It restricts the language output of the respondent by eliciting responses within a frame of adjectival bipolar scales. Since the assumption is made that meanings vary multidimensionally, an attempt is made to include scales

that represent these multidimensional ways.

Appendix A contains the semantic differential used in this study. Between each of 40 bipolar adjectives appear seven scale positions. The point of origin is "0" or the center point on the 1 to 7 scale. Since a multidimensional semantic space is postulated, each scale[1] is represented as a straight line function passing through a point of origin.

Meaning is defined as the position in the semantic space which is chosen by successive selection of positions along each individual scale.

In summary, (Osgood, Suci, Tannenbaum, 1957, p. 31) meaning in this study is defined as a representational mediation process, a complex reaction divisible into some unknown but finite number of components. This definition is coordinated with the instrument--the semantic differential--by identifying this complex mediation reaction with a point in a multidimensional space. The projections of the scales onto the various dimensions of the semantic space are assumed to correspond to what component mediating reactions are associated with the sign and with what degree of intensity.

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[1]An important assumption made by Osgood and associates is that the adjective pairs defined by the experimenters as antagonistic also are defined as polar opposites by respondents. A study by Danbury (1963a) suggests that given one adjective respondents may define its antonym differently from the experimenter's choice based on logical or other grounds. Osgood and associates (Osgood, Suci, and Tannenbaum, 1957, p. 327) admit that one of the difficult methodological problems unsuccessfully dealt with so far is to demonstrate that the polar terms are true psychological opposites, that is, fall at equal distances from the origin of the semantic space and in opposite direction along a single straight line passing through the origin.

Background of the Problem

Personality and Cognitive Behavior

Krech and Crutchfield (1948, pp. 136-139, 111-112) observed that individuals differ in the complexity of their cognitive structures ranging from simple undifferentiated structure with relative isolation or lack of intercommunication among structures to a highly differentiated and complex structure with high intercommunication among structures.

These properties, complexity versus simplicity, intercommunication versus isolation, influence the rate of cognitive reorganization, creative thinking, and ingenuity in problem solving. The processes of thinking, problem solving, learning, forgetting and the sudden appearance of new goals and insights are regarded as special cases of cognitive reorganization.

In general, the more simple, undifferentiated, and isolated any cognitive structure is the less available it is for reorganization and the less creative and ingenious will the solution attempts be (Krech and Crutchfield, 1948, p. 141).

Krech and Crutchfield (1948, pp. 136-137) state:

> Since every cognitive organization is determined by the relations existing among all the individual parts, a single new perception would have a relative decisive effect on a major structure that was simple, undifferentiated, and isolated from other structures, but it would have a relatively minor effect on the completely differentiated structure that was in communication with other structures.

Presumably, a change in the simple, undifferentiated and isolated system is more traumatic or fundamental a reorganization therefore would be met with more resistance.

The simple, undifferentiated, and isolated structure more than the complex, differentiated, and intercommunication structure tends to have

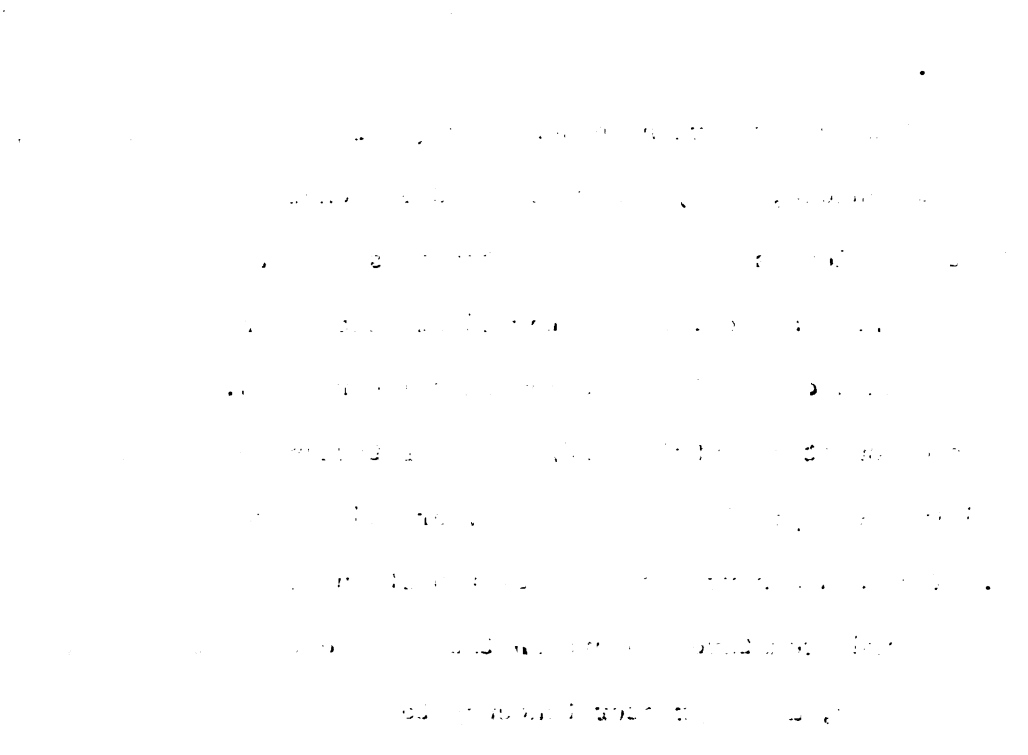
a narrower focus of attention, fewer different items are involved, and those items are relatively segregated from the rest of the field. In problem solving, the more simple, undifferentiated, and isolated any structure, the less available it is for reorganization and the less creative and ingenious will the solution attempts be. If an individual's cognitive structures are isolated and rigid and thus do not change, his actions cannot change and his strivings to achieve his goals will be characterized by sterotypy (Krech and Crutchfield, 1948, pp. 138-141).

Work on the authoritarian personality (Adorno, Frenkel-Brunswik, Levinson, and Sanford, 1950) generated studies generally supporting the notion that individuals high in authoritarianism or ethnocentrism as measured by F and E scales, tended toward simplicity in cognitive activity more than did individuals low in the variables.

High and low ethnocentrics and/or authoritarians were found to be more rigid in their problem solving behavior and concrete in their thinking. They had a narrower grasp of a particular subject, displayed a tendency toward premature closure in their perceptual processes, distortions in memory, and a greater tendency to be intolerant of ambiguity (Rokeach, 1960, p. 16).

Authoritarian oriented persons tend to display characteristic mechanisms which result in a simplification of the psychological world. The work of Else Frenkel-Brunswik (1949) suggests that the mechanisms include tendencies:

1. Toward emotional and perceptual cognitive intolerance of ambiguity.
2. To resort to black-white solutions and judgments.



3. To be intolerant of good and bad qualities in the same person (ambivalence).

4. To reject or accept people in an unqualified manner.

5. To arrive at premature closure in ambiguous situations.

6. To arrive at premature closure as to valuative aspects, often at the neglect of reality.

7. To seek unqualified and unambiguous over-all acceptance or rejection of people.

The low ethnocentrism scorer more than the high scorer tends to display a general tendency to expose himself to broad experience--emotional, cognitive, and perceptual--even at the risk of having to modify one's preconceived notions and of having to sustain conflicts (Adorno, Frenkel-Frunswick, Levinson, and Sanford, 1950, p. 463).

In an experimental situation in which Navy recruits responded to tape recorded voices of a superior, authoritarians responded more to the position of the stimulus person while non-authoritarians were more sensitive to the psychological cues available in the situation (Fidelman, 1963, p. 19).

In short, individuals with simple, undifferentiated, isolated cognitive structures, and/or individuals high in authoritarianism and/or ethnocentrism tend toward cognitive process styles which are simple, narrow, constricted, undifferentiated, dichotomous, and evaluative.

Individuals with complex, highly differentiated cognitive structures that are not isolated and/or individuals low in authoritarianism and/or ethnocentrism tend toward cognitive process styles which are complex, multidimensional, discriminative, broad, and non-evaluative.

Individuals who differ in simplicity and complexity of cognitive structure and cognitive process styles might be expected to differ in

semantic structure, scale checking behaviors, and meaning toward specific concepts.

A study by Suci (1955), reported in a later section of this thesis, in which he derived hypotheses from authoritarian theory, sheds light on differences between high and low ethnocentrics in semantic structure.

Rokeach's (1960, pp. 11-18) reformulation, extension, broadening, and refinement of the authoritarian personality theory has taken a long step toward systematizing the relationship between the authoritarian personality syndrome and cognitive activity. In the Rokeach theoretical conceptualization similar kinds of cognitive simplification and narrowing processes (as observed above) are presumed to occur.

Closed and Open Systems and Cognitive Functioning Styles

Rokeach and associates (Rokeach, 1960) have investigated the cognitive and emotional behaviors of individuals who differ in cognitive structure along the closed and open dimension.

Characterizing cognitive functioning styles demonstrated in those investigations in terms of simplicity and complexity or multidimensionality, closed systems tend toward simplicity and open system individuals tend toward complexity or multidimensionality in conceptual, perceptual, aesthetic, time perspective, ideological, interpersonal, communication, and emotional areas of cognitive activity.

The behaviors of closed and open system individuals in one group of conceptual studies--the Doodlebug experiments--underscore this characterization. Rokeach and associates (Rokeach, McGoveny, and Denny, 1960; Rokeach and Vidulich, 1960; and Vidulich, 1956) set up an artificial cosmology in which a miniature belief system was at odds with one ordinarily employed in everyday life. The subjects were required

to manipulate in their heads a set of rules for solving problems (Rokeach, 1960, pp. 173, 181, 257). They found that closed systems took longer to solve the problems than did open systems; that closed systems were less able to integrate beliefs into new systems; that closed systems were less able to remember the different beliefs to be integrated than open systems; and that closed systems tended to emotionally reject the problem more than open systems.

Closed system individuals, less able to entertain newness in ideas, people, beliefs, or information which may contradict or appear inconsistent with old and cherished beliefs, are less able to take multiple elements into account at the same time and integrate them into new systems. Instead closed systems eliminate inconsistent elements through narrowing, forgetting, or emotional rejection. Behind the rejection of newness is the closed system's resistance to change, the strong motivation to preserve the system at all costs. The open system, on the other hand, is more willing to reconcile beliefs with the existing system and to change it as needed to fit in with new information.

In two other experimental situations using variations of the Doodlebug Problem, this tendency of closed individuals toward simplicity in cognitive processing is also evident. Rokeach and associates (Rokeach, Oram, Laffey, and Denny, 1960) demonstrated that non-integrative thinking is characteristic of closed individuals and integrative thinking is associated with open individuals. In non-integrative (isolated or party-line) thinking peripheral beliefs are interconnected only through the intermediate or authority belief region.

A change in a peripheral belief results only on instruction from the closed individual's authority figures and such a party-line change

does not affect other beliefs in the peripheral region. A "genuine" change involves realignment of the total system since beliefs are not isolated from each other.

The experimenters, attempting to observe the effects of isolation on the synthesizing processes, focused on the psychological effects on the thinker when materials of thought are presented or not presented on a silver platter.

In the first experiment, the new beliefs were given all at once at the beginning on a "silver platter," while in the second experiment the new beliefs were presented gradually rather than all at once. As expected, the closed group solved the problem faster in the silver-platter experiment than in the working-through experiment. But the open individuals took just as long under both conditions. In the working-through condition, closed subjects took longer than open subjects.

Party-line changes, more simple or less multidimensional than genuine changes, were characteristic of the closed system individuals. The closed system individuals worked more efficiently in the silver-platter handout situation because it was more simple to grasp and swallow whole than to synthesize the beliefs into a new system. Closed subjects did not have to reconcile new beliefs with old ones in the silver-platter situation thereby removing a major obstacle to synthesis leading to the formation of a new system.

Open subjects resisted having beliefs forced on them without first working through these beliefs cognitively thus accounting for the longer time taken in the silver-platter situation.

In an experiment by Levy and Rokeach (1960), a perceptual task was used to study perceptual synthesis with similar results: closed systems

tending toward simplicity in the cognitive process and open systems toward multidimensionality. The experimenters found significant differences in the time required for closed and open system individuals to integrate perceptual stimuli into a new field of synthesis. Closed and open subjects did not differ in their ability to perceive analytically.

This study, like others, tended to support the notion that differences between closed and open systems were due to personality rather than intelligence differences.

Mikol (1958) in a study designed to extend the scope and generality of the notions already developed about the organization of closed and open cognitive systems found that in aesthetic functioning closed subjects were less able to understand and appreciate new modern music and its composer than were open systems.

Closed systems were unreceptive to newness of musical experience but no differences were found between closed and open individuals in their appreciation of more conventional music.

A striking finding of the Mikol experiment was that open individuals knew more about serious music than closed individuals in the absence of differences in formal training.

Closed individuals are less tolerant of incongruent elements within the belief system in the area of ideology than open individuals. Rokeach and associates (Rokeach, 1960, pp. 291-311) in studying the organization of the disbelief system had students and clergy, adherents to one of six Christian religions, rank religions in order of similarity to the subject's own religion.

The results indicated that the more dissimilar the belief system (religion) from one's own the more it was rejected, and when members of

different religions were classified into closed or open systems, it was found that closed systems tended to reject every disbelief system along the similarity continuum to a greater extent than did open individuals. The more dissimilar a faith to one's own, the more it is rejected by all systems but closed systems consistently reject more than do open systems all disbelief subsystems along the total range of the similarity continuum.

According to Rokeach's theoretical conceptualization, (Rokeach, 1960, pp. 366-367) closed systems tend toward simplification of the time perspective. The more closed the belief-disbelief system, the more narrow is the time perspective and the less are the psychological past, present and future adequately represented in a person's behavior. Rokeach and Bonier (Rokeach, 1960) found that closed systems were more future oriented and less present oriented than open systems. When a person is future oriented to the point of sacrificing an appreciation of the past and present, his future orientation is narrow.

A study by Fidelman (1963) in affective interpersonal behavior, indexed by the individual's ability to perceive and understand the feelings of others, also emphasizes the simplicity-multidimensionality differences in closed and open cognitive styles. He found that relatively closed individuals were less accurate in their ability to perceive and understand the feelings of others that were open systems.

Fidelman reasoned that since closed systems need to avoid ambiguities, their interpersonal world is much less differentiated, and the subtle nuances of interpersonal experiences, the "fine" discriminations of feelings of others are missed and lost.

Vidulich (1958) as a measure of the narrowing notion in the Rokeach

theoretical framework had subjects name on five separate indices all personal acquaintances, public persons and groups who were perceived as favoring or opposing their own positions on an integration topic. Relatively closed systems were found to have fewer negative belief referents than subjects with relatively open systems. The discrepancy was interpreted as being mainly a function of reduced awareness of public persons opposing the closed subjects' beliefs.

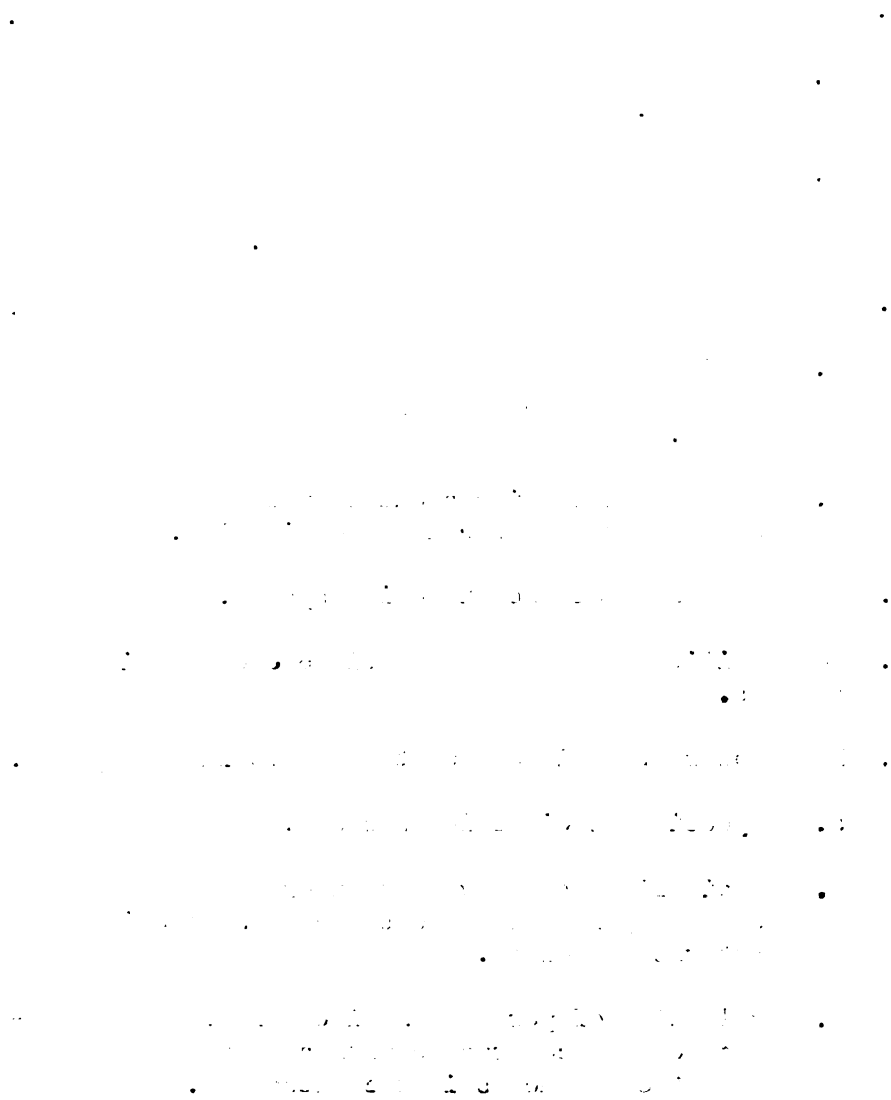
Research findings in the communication situation are consistent with the cognitive styles associated with open and closed systems observed in other studies. Powell's (1961) findings supported the Rokeach hypothesis that open and closed individuals differ in their ability to differentiate information about source from information the source attempts to communicate in a message. The findings were interpreted as supporting the Rokeach notion that open systems evaluate and act upon the content and evaluate and act upon the information about the source on the respective intrinsic merits of each. Closed systems act on the basis of source and content aggregate interaction without discrimination. They tend to simplify the cognitive situation by "lumping" rather than relying on more discriminative and differentiating cognitive behaviors in making judgments.

In summary, differences in cognitive behaviors associated with differences in cognitive structure show a general tendency toward "simplicity" in cognitive process styles on the part of the closed system more than the open system. This holds for a variety of psychological situations: conceptual, perceptual, aesthetic, time perception, ideological, interpersonal, communication, and emotional.

The closed system tendency toward simplification or lack of

multidimensionality can be characterized in terms of the following behaviors observed in the studies above:

1. Elimination from consideration of relevant elements.
    a. Forgetting rather than remembering relevant elements.
    b. Narrowing through selective avoidance of contact with elements perceived as incongruent with the belief system.
2. Failure to make fine discriminations among elements.
    a. Lumping rather than making discrimination between a person and a person holding the belief.
    b. Lumping information about source and information the source is communicating.
3. Less knowledge of the disbelief system.
4. Less ability to integrate multiple elements into new systems.
5. Less tolerant of incongruent elements in the system.
    a. Rejection of disbelief systems.
    b. Considering as equivalent diverse belief content (elements) if forced to shake loose previous patterns of belief.
    c. Evaluation of persons and ideas in terms of congruence or incongruence with authority rather than other elements in the situation.
    d. Greater emotional rejection of a situation demanding the shaking loose of previous belief patterns.
6. Tendency toward simplicity rather than complexity in changes in belief system.
    a. Party-line change in peripheral beliefs related to authority rather than genuine change involving the total system of beliefs.
    b. Silver-platter acceptance rather than working through individual elements.



c. Tendency not to evaluate information on its own merits but on conformity with authority.

d. Greater sensitivity to communication, warnings, promises issued by own authorities.

e. Using as a criterion power of authority to mete out reward and punishment rather than cognitive correctness of elements.

7. Reluctance to change the system--tendency to protect system at all costs.

8. Less ability to distinguish between and evaluate independently the substantive content of a message and the source of the message.

Tendency Toward Simplicity in Semantic Structure

An underlying notion about human thinking explored by Osgood and associates (Osgood and Tannenbaum, 1955) is that judgmental frames of reference tend toward maximal simplicity. In terms of linguistic behavior, responses to the semantic differential, this general tendency toward simplicity manifests itself in:

1. The multidimensionality of meaning.

   a. Few versus many dimensions or factors utilized (in a number of studies, three factors: evaluation, potency, and activity account for most of the variance).

   b. Unequal versus equal emphasis in the use of factors or dimensions (the evaluative dimension accounts for one-half to three-quarters of the variance in some studies).

   c. The nature of dimensions used (generally, evaluative, potency, and activity).

2. Polarization versus more discriminative judgments on individual adjective-pair scale positions.

3. Concept clusters which represent relatively undifferentiated "good" and clusters of relatively "bad" concepts.

Osgood and Tannenbaum (1955) also observed individual differences

from the general tendency toward maximal simplicity in the judgmental frame of reference.

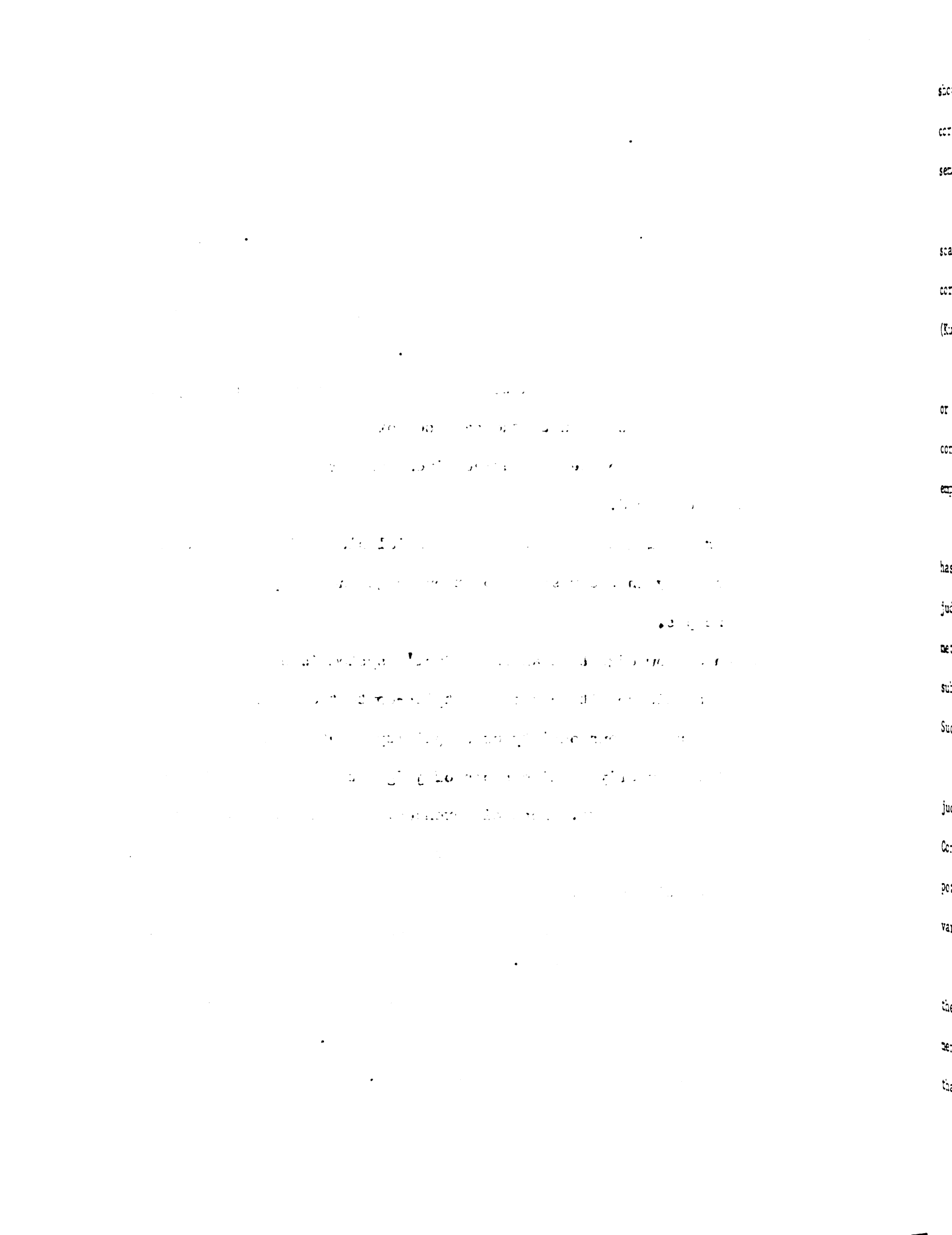
Differences in Semantic Structure

Osgood et al. (Osgood, Suci, and Tannenbaum, 1957, p. 222) state that the most basic ways in which individuals or groups could differ cognitively would be in terms of the underlying dimensions of judgment they use in differentiating among concepts. They could differ (1) in the number of factors required to account for their judgments, (2) in the relative weights given to the same set of factors, such as one group giving more weight to the evaluative dimension, or (3) in the nature of the factors employed.

Research using the semantic differential also indicates that individuals may vary in their scale position usage and in specific meanings toward concepts.

Given a knowledge that an individual's system is either closed or open and that his cognitive process style--content of thinking--will tend toward multidimensionality or simplicity, what statements can be made about the underlying dimensions of judgments he uses in differentiating among concepts? What differences, if any, can be expected of closed and open individuals? What is the nature of semantic structure, the scale position usage, and meanings toward specific concepts of individuals categorized as either closed or open belief-disbelief systems?

Dimensionality of Meaning. In cases where scale positions chosen by subjects for two or more scales are identical or similar, Osgood and associates (Osgood, Suci, and Tannenbaum, 1957, ch. 1) assume that the scales are associated with the same dimension. If the scales are functionally equivalent--correlate highly with each other--then one



should be able to explain scale-by-scale profiles by clustering highly correlated scales with each other. In a number of studies using the semantic differential this was done using factor analysis.

This procedure of correlating scale items produces clusters of scales having within-cluster correlations and low between-cluster correlations, showing a relative independence among scale clusters (Kumata, 1958, pp. 5-8).

These clusters represent factors or dimensions and the organization or structure of these dimensions for an individual or group for given concepts can be identified and described in terms of number, nature and emphasis of dimensions.

The use of scales, the frame within which concepts can be judged, has been analyzed in a number of studies across a multitude of concepts judged, a number of different factor analysis methods used, different methods of sampling, different subject characteristics, and groups of subjects in different cultures. These studies are reviewed in Osgood, Suci, and Tannenbaum (1957) and Kumata (1958).

In analyzing the use of scales--the frame within which concepts are judged--the same or near-same factors keep emerging in repeated studies. Consistently, the dominant dimension is an evaluative one which with a potency factor and an activity factor account for most of the total variance.

An analysis of a number of factorial studies suggests that although there are pervasive consistencies among different groups in the dimensionality of semantic space, there are interesting variations within that structure.

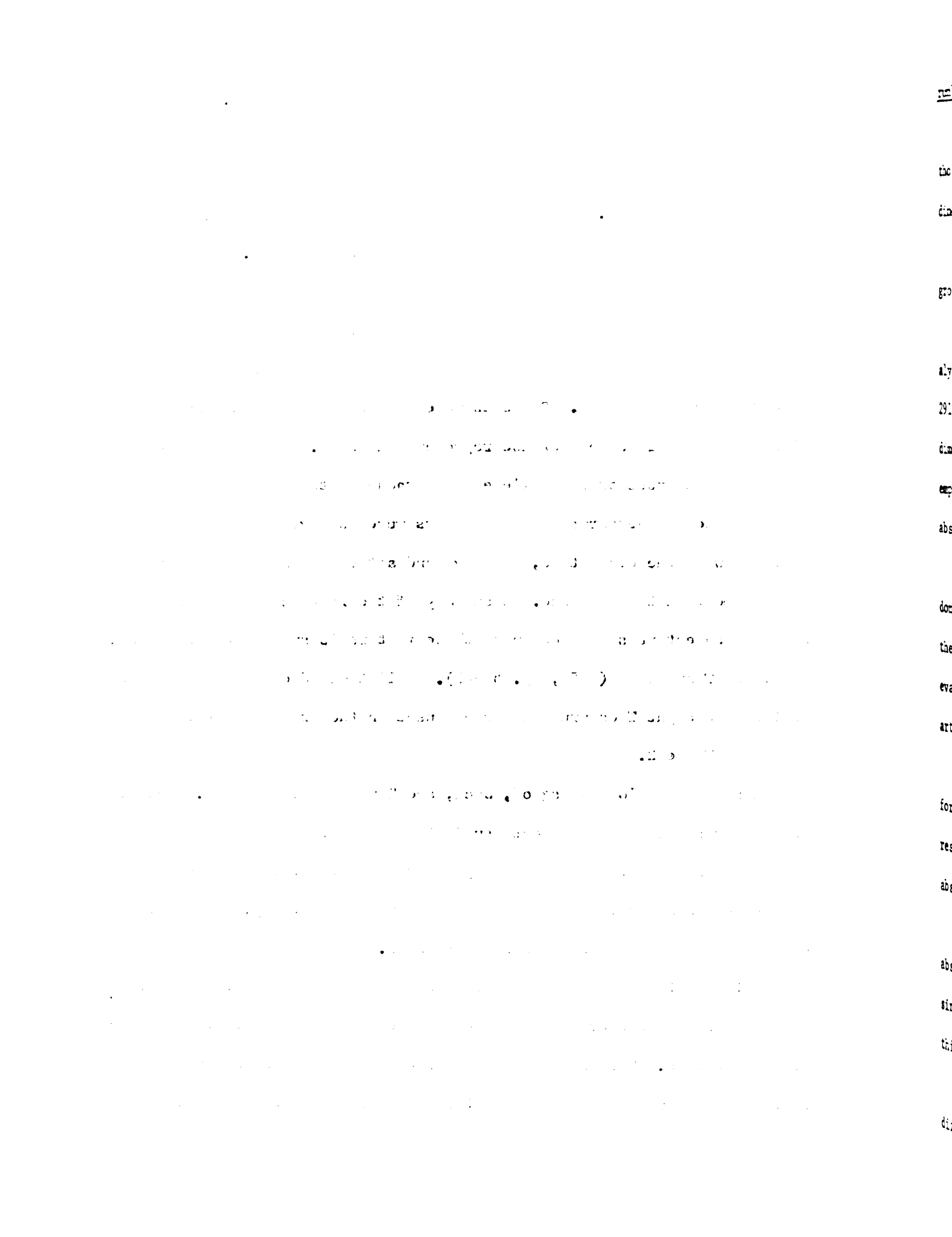
Osgood, Suci, and Tannenbaum (1957, ch. 2) report three studies in

which the dimensions yielded by factor analysis were similar. In the first two studies of meaningful judgments, the evaluative factor was dominant accounting for 70 per cent of the common variance, almost half of the total variance. The two studies also agree on two other factors yielded in the analyses identified as potency and activity.

In a third investigation, the Thesaurus study, also designed to explore the dimensions of semantic space, adjective pairs were chosen through an exhaustive process from the Roget Thesaurus with 76 of 289 adjective pairs retained. Concepts were chosen to represent a number of different categories to increase representativeness. The semantic differential responses of 100 college undergraduate students to the concepts in which the 76 Thesaurus adjective pairs were used yielded eight factors, with the evaluative, potency, and activity dimensions accounting for most of the variance. A summary of the factors yielded and specific adjective scales defining those factors is summarized in Osgood, Suci, and Tannenbaum (1957, pp. 51-61). A list of adjective pairs representing the eight Thesaurus dimensions used in the present investigation appear in Table 2.

A study by Solomon (Osgood, Suci, and Tannenbaum, 1957, pp. 67-68), using Navy sonar men, in effect, subjects representing a "sonar culture," which differs from the types of subjects used in the three studies above, yielded dominant factors identified as evaluation, potency, and activity even though concepts used were sonar signals.

Although the potency and activity dimensions resembled those in the Thesaurus study, the evaluative dimension resembled an "aesthetic" evaluative dimension. The influence of the sonar culture upon what was considered "good" was demonstrated by the use of scales such as <u>wide</u>, <u>deep</u>,



rumbling, large among the favorable evaluative scales.

The Solomon study also yielded additional factors which differ from those found in the Thesaurus study: clarity, security, and detection--dimensions peculiar to the sonar culture.

The study indicates the influence of scale-concept interaction and group-concept interaction.

Individuals classified as artists or non-artists in a factor analysis study by Tucker (Osgood, Suci, and Tannenbaum, 1957, pp. 68-70, 291-293) differ from the Thesaurus college group in terms of emphasis of dimensions. Also, artists differed from non-artists in the nature and emphasis of factors used in making judgments of representational and abstract art.

In judging all paintings, artists and non-artists produced three dominant factors: activity, evaluation and potency. Artists emphasized the activity factor which accounted for 46 per cent of the variance, evaluation accounted for 17 per cent, and potency for 10 per cent. Non-artists used similar factors but in more equal proportions.

In judging abstract paintings, the evaluative dimension accounted for 79 per cent of the total variance while for the non-artists the responses were more or less random indicating no frame of reference for abstract art.

The artists displayed a high polarity and emotional reaction to abstract paintings which collapsed the semantic space about a dominant single dimension. It is as if artists had resolved their judgments on this category of concepts.

In a two-part study, Kumata (1958) checked for the influence of differences in language and influence of culture plus language on the

semantic structure. Using bilingual Japanese and Korean students in the United States, and monolingual American college students, a factor analysis of their responses to the semantic differential showed that language used did not produce different dimensions of scale usage.

Indices of factorial similarity showed that the first two factors, which accounted for about 70 per cent of the total variance, were highly similar across all groups and languages. These were identified as evaluative and dynamism dimensions.

In the monolingual study, monolingual college students in Japan and the United States responded to the semantic differential. Scales were selected from the Thesaurus word list. Factor analysis produced three highly similar dimensions for the total group analysis. The first three factors accounted for about 70 per cent of the total variance for both groups. In the analysis by sex, two highly similar factors across all sub-groups appeared with an identifiable third factor for all groups but these did not approach similarity by the index of factorial similarity measure in some of the sub-group comparisons.

The three factors were: evaluative, dynamism, and novelty.

Also, in this study, differences in usage of certain scales as a function of culture were found.

The factors yielded in the Kumata studies differ in nature and emphasis from previous factorial studies. Although the Kumata studies produced a dominant evaluative dimension, the second dimension, dynamism, was a combination of the potency-activity dimensions of previous studies. Also, the first Kumata study failed to produce an identifiable third factor while the second study produced a novelty factor which resembles the novelty dimension of the Thesaurus study in terms of

defining scales but differs in the emphasis given this factor.

The semantic structures of college undergraduates, Navy sonar men, artists and non-artists, and members of different cultures show similarity to the evaluative-potency-activity pattern of other factor studies. But the studies cited suggest that groups may differ in terms of nature, emphasis, and also number of factors identified. The differences may not be attributable to differences in group characteristics but they do suggest ways in which groups may vary on the dominant theme.

Personality and Semantic Structure. Of major interest to the present research is a study by Suci (1952). Using authoritarian personality theory, Suci predicted differences between high and low ethnocentrics in semantic judgment. High and low ethnocentrics differed in their ratings of various ethnic concepts on the evaluative scale of the semantic differential. High ethnocentrics fused the potency and activity dimensions into a single dynamism factor suggesting a difference in the nature and number of factors employed. However, Suci's findings did not support his major hypothesis that high and low ethnocentrics would differ in their dependence on the evaluative factor in judging ethnic concepts.

Although suggestive of differences, the Suci results are not conclusive where ethnocentrism is a major personality variable. The study raises a question important to the present research: Would an improved authoritarian personality theory such as developed by Rokeach accentuate differences between personality types in semantic judgment?

Scale Position Usage

Osgood (1941) found three "difficulty" levels in thinking: the simplest and easiest to make were the all-nothing, black-white, extreme 1 and 7 judgments; the most complex and most difficult were those

defined by Osgood as being the more discriminating and finely graded 2, 3, 5, 6 judgments; those intermediate in difficulty were the middle, 4 positions. Ease of judgment was measured in judgment time of individual adjective scale items.

Individual characteristics associated with these scale checking behaviors included occupation, education, and intelligence "with the more critical thinkers making a more discriminatory use of the entire scale."

Although no hypotheses regarding individual characteristic variables were tested in the Stanger-Osgood (Osgood, Suci, and Tannenbaum, 1957, p. 226) study of social sterotypes, the data suggest that more intelligent subjects, or better educated ones (college versus laymen) used 2, 3, 5 and 6 positions more frequently than polar extreme 1 and 7 scales or the neutral 4 position. Osgood, Suci, and Tannenbaum (1957, pp. 155-156) observed that more "emotional" subjects (American Legion members) utilized polar 1 and 7 or 4 positions more frequently than the more discriminatory 2, 3, 5 and 6 positions. To these subjects, things were either all-nothing or neither.

In a study by Lyons and Solomon (Osgood, Suci and Tannenbaum, 1957, pp. 155-159), polarized responses correlated with judgment reaction latency, an index of overt behavior, found females consistently and significantly quicker than males--making polar judgments, 1 and 7, more consistently than males. For both sexes, it took less time to make 1 and 7 judgments, therefore it was assumed that these judgments were more simple and easy than 2, 3, 5 and 6 responses. Also, latencies for evaluatively favorable judgments were shorter than latencies for less favorable opposites.

The results were interpreted as supporting the basic theoretical

assumptions that extremeness of judgment on the semantic differential is a valid measure of strength with which signs are associated with representational mediation processes.

Quevillon (1962) compared scale-checking behaviors of three MMPI personality defined groups. Although the trend was not in the predicted direction and not statistically significant, her first MMPI group used polar positions more than her normal or second MMPI groups. The second MMPI group had the smallest proportion of polar judgments. All three groups were similar in the use of the 4 position.

Workers in a Triandis (1958) study showed a general tendency toward simplification of the cognitive field through polarized, intense, responses on individual scales while managers tended to display more discriminating and refined judgments using 2, 3, 5 and 6 positions more consistently. Both groups defined as normal, presumably differed in income, job level, and education.

Bopp (1955) found that schizophrenics more than normals tended toward simplification (1 and 7 responses) and used the 4 position more often than normals.

Kerrick (1954) found differences between high and low intelligence with low intelligence subjects tending toward 1 and 7 responses and high intelligence subjects using 4 and 2, 3, 5 and 6 positions more.

Wolking (1959) found no reliable difference between a maladjusted adolescent group and a normal control group in the tendency to restrict ratings to one position of the seven point scale. But maladjusted subjects had more constricted ratings in terms of variability than normals.

In a Luria (1959) study, a therapy group used 1 and 7 and 4 positions less than a control group.

No differences were found between high and low anxiety (as indexed by the Taylor Manifest Anxiety Scale) on polarized versus more discriminating responses in the Kerrick (1954) study reported above. The effect of anxiety level on high IQ subjects was to make them use polar positions more often and to make low IQ subjects use discriminating positions relatively more.

Kumata (1958) found cultural differences in the usage of scale positions with Japanese students using extreme 1 and 7 positions much less than American students. Japanese used the middle position more than Americans and American students used the 2 and 6 positions more than any other group. Japanese females used the next two neutral positions, 3 and 5, much less than other groups. American males distributed their responses equally over the scale positions, and American females used extreme and middle positions much more. For the Japanese group, females marked extreme positions more than males and males marked 3 and 5 positions more than females.

In terms of middle position usage, Osgood, Suci and Tannenbaum (1957, p. 228) state that the more equal the reaction tendencies, the slower will be the judgments, also the check marks will be nearer to the center of the scale. In response conflict situations, one resolution is to rather promptly select a "neither" or "don't know" alternative. Psychologically, polar judgments mean lack of conflict and center positions mean maximum conflict--conflict which can be resolved by "going out of the field" with a prompt 4 judgment.

On the basis of the above studies, the following general statements can be made:

1. Polarization of judgments on the semantic differential (distance from origin) is a valid measure of the strength with which signs are associated with representational processes.

2. Individuals differ in scale position checking behaviors, certain individuals characteristically checking extreme or polar positions and others making use of the entire scale.

3. Different positions are associated with different levels of difficulty of response and simplicity or complexity of judgment, with differences in judgment time, and with differences in degree of judgment conflict.

    a. More polar positions, 1 and 7, require the shortest judgment times, and 2, 3, 5, 6 positions require the longest judgment times, with the 4 position intermediate.

    b. In terms of difficulty, 1 and 7 are easiest, 4 next in difficulty, and 2, 3, 5, 6 most difficult.

    c. In terms of conflict, 1 and 7 show least conflict, 4 position most conflict, and 2, 3, 5 and 6 positions showing increasing conflict.

4. Individual characteristics associated with differences in scale checking behaviors include sex, anxiety, intelligence, personality (MMPI), therapy, maladjustment, mental illness, emotional thinking, sophistication of thinking, and culture.

While differences appear among groups in several studies, significant variables producing these differences are not clearly isolated and appear to differ from one another. The Rokeach theoretical conceptualization provides a basis for making predictions of differential scale usage for different personality types.

Statement of the Problem

Studies using the semantic differential have demonstrated consistently that judgmental frames of reference tend toward maximal simplicity but that there are individual differences within this general

tendency and that these differences may be associated with individual characteristic variables.

Simplicity and complexity or multidimensionality in semantic structure is defined in terms of the number of factors needed to account for judgments. Given two semantic structures, the one employing fewer factors is defined as tending toward simplicity and the one employing more factors is defined as tending toward complexity.

In scale checking behaviors, simplicity may be defined as simple, easy, non-discriminating, dichotomous, black-white, all-nothing types of judgments showing least conflict and operationalized as 1 and 7 positions on the semantic differential. Complexity or multidimensionality in judgment can be defined as complex, difficult, discriminating, more finely graded judgments showing increasing conflict and operationalized as 2, 3, 5 and 6 positions. The 4 position is a "neither" type of response which is intermediate in difficulty and complexity and shows the greatest conflict in judgment of bipolar pairs of antagonistic adjectives.

The Rokeach studies suggest that the closed belief-disbelief system individual tends toward simplification rather than multidimensionality in cognitive processing style. Characteristically, closed individuals should tend to lump rather than discriminate, make extreme rejecting or accepting judgments rather than decisions indicating more tolerance of incongruent, ambivalent, or conflicting elements within the system, and they should tend toward non-integrative rather than integrative thinking.

In the structure of semantic space we would expect relatively closed belief-disbelief system individuals to tend toward simplicity

with fewer factors in making meaningful judgments than relatively open belief-disbelief system individuals. They should use more polar, extreme, less discriminating scale positions (1 and 7) than open belief-disbelief system individuals and fewer intermediary 2, 3, 5 and 6 scale positions (Osgood, Suci, and Tannenbaum, 1957, pp. 225-236; and Osgood, 1941).

Closed belief-disbelief systems being less tolerant of incongruent, ambivalent, conflicting elements within the cognitive framework than open belief-disbelief systems would be expected to use the middle (4) positions, defined as indicating maximum conflict by Osgood et al. less frequently than open systems. Closed systems should tend toward resolving conflicts in terms of a more dichotomous response--black-white, all-nothing, accepting-rejecting.

Stated as hypotheses:

1. Differences in cognitive structure as indexed along a closed-open belief-disbelief system continuum are associated with differences in semantic space in terms of its nature and dimensionality.

2. Differences in cognitive structure as indexed along a closed-open belief-disbelief system continuum are associated with differences in scale position usage.

Although individuals in the present study were divided into groups representing the ends and the middle of the closed-open belief-disbelief system continuum, no hypotheses are stated for the middle group. The theoretical framework and studies of Rokeach (1960, pp. 359-360), like the authoritarian personality studies (Adorno, Frenkel-Brunswik, Levinson, and Sanford, 1950), provide little theory or empirical research on which to base predictions. The major concern of Rokeach and Adorno et al. has been with extreme high and low scorers.

CHAPTER II

DESIGN AND PROCEDURE

Design

This study was designed to accomplish two objectives: to describe the dimensionality of semantic structure of groups varying in cognitive structure along a closed-open belief-disbelief system continuum and to test hypotheses relating to scale checking behaviors of the groups.

Instruments Used

Index of Closed and Open Belief-Disbelief Systems. The index of the relative degree of closedness or openness of the belief-disbelief system used in this study was Rokeach's 40-item Form E scale. The scale appears in the test booklet in Appendix A.

Following Rokeach[2] (1960, p. 88) individual scales were scored and scores were totaled for each subject. Subjects were placed into three groups based on their total score.

The 241 subjects made 81 different scores. Respondents were divided into three categories containing approximately equal numbers of subjects. The group defined as "closed" contained the 81 subjects making the 32 highest scores. The group defined as "open" contained 79

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[2]The scale is discussed fully in Rokeach (1960) including description of scale items, scoring procedures, and reliability of the instrument.

individuals who made the 32 lowest scores. The group defined as "medium," or "middle," contained 81 subjects representing 17 middle scores.

For convenience, the three experimental categories of subjects referred to without qualification as closed (high scorers), open (low scorers), and medium or middle (middle scorers) belief-disbelief system groups or individuals. In the strict sense, the terms closed, open, and medium or middle refer only to the relative position along the continuum of high and low scores made by individuals in the present study.

Also for convenience, a number of synonyms are used interchangeably for the sample of subjects used in the study. All of the terms are defined as referring to the following condition:

> A sample of individuals, which represent this study's experimental subjects, drawn from a population of college students and categorized into closed, open, and medium types (assumed to have different cognitive structures as indexed by the closed-open continuum) on the basis of their scores on the Rokeach instrument.

Those synonyms are: "group," "individuals," "subjects," "systems," "sample," "category," and "type." They may be used in the singular or plural with or without the adjective "experimental" preceding them in the following fashion: "closed group," "open individuals," or "medium systems."

Since the data in this study relating to semantic structure are based on the contributions of all subjects as a group and not on single individuals, the use of the term "individual or individuals" is not to be construed as referring to the contributions of subjects singly or separately.

Also, the term "group" is not used in reference to any sociological concept under study. Both terms, "individual and group," are

used in the sense defined above.

Scores of respondents retained in the analysis of data ranged from 91 to 202. The mean score for the total group was 155.86 which suggests that the sample used in the present study was somewhat more closed than other groups used in other studies.

Table 1 compares means of Rokeach (1960, p. 90), Maryo (1958), and Powell (1961) groups with the group mean in the present study. With the exception of the Rokeach English workers, VA domicilary groups, and the Powell group, the present study has the highest mean reported. It is slightly higher than the highest total group mean in the Maryo study.

Table 1. Mean group scores obtained on the Rokeach 40-item Form E scale.

Rokeach validation study groups:	Mean	N
English colleges II	152.8	80
English workers	175.8	60
Ohio State U. I	142.6	22
Ohio State U. II	143.8	28
Ohio State U. III	142.6	21
Ohio State U. IV	141.5	29
Ohio State U. V	141.3	58
Ohio State U. V (retest)	143.2	
VA domiciliary	183.2	80
Maryo religious groups:		
Baptist	151.48	29
Catholic	155.48	104
Episcopalian	145.74	31
Lutheran	149.90	49
Methodist	145.48	84
Presbyterian	147.23	56
Powell study group:	158.36	76
Present study:	155.86	241

Semantic Differential Index of Meaning. The semantic differential used in the present study consisted of 19 stimulus nouns[3] and 40 bipolar adjective pairs with seven scale positions between reciprocally antagonistic adjectives.

Concepts and adjective pairs used in this study are listed in Table 2. Concepts were chosen to represent categories used in the Thesaurus study (Osgood, Suci, and Tannenbaum, 1957, p. 49). Categories include: person concepts, physical objects, abstract concepts, event concepts, and insitution concepts.

Five adjective pairs, most of them from the Thesaurus list, were selected to represent each of the dimensions yielded in the Thesaurus factor analysis. In this thesis, reference is made to Thesaurus list or sample. It is assumed that the list of adjectives used in this study represents the dimensions of the Thesaurus study since the same or equivalent adjectives are used.

Subjects

Two hundred and sixty-four University of West Virginia freshman English students completed all or some part of the test instruments with 241 instruments remaining in the final analysis. Since the instruments were administered in two booklets on two different class days, absences either on the first or second test day required that several partially completed tests be eliminated.

Subjects were not paid.

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[3]In the original selection, 20 concept nouns were chosen, however, a printing error in the semantic differential required that the concept KNIFE be eliminated.

Table 2. Stimulus nouns and adjective pairs used in the study.

Concepts and Categories	Adjective Pairs and Dimensions	
	Evaluation	Aggressiveness
Persons	good-bad	aggressive-defensive
	fair-unfair	leading-following
MY MOTHER	kind-cruel	propelled-drawn
ME	heavenly-hellish	impelling-resisting
JOHN F. KENNEDY	clean-dirty	boisterous-shy
NIKITA KHRUSHCHEV		
	Potency	Novelty
Physical Objects		
	strong-weak	unusual-usual
ENGINE	large-small	new-old
SNOW	hard-soft	youthful-mature
BOULDER	heavy-light	unexpected-expected
	severe-lenient	advanced-retarded
Abstract Concepts		
	Activity	Receptivity
MODERN ART		
SIN	active-passive	sensitive-insensitive
LEADERSHIP	fast-slow	colorful-colorless
SOCIALISM	excitable-calm	interesting-boring
	complex-simple	savory-tasteless
Event Concepts	hot-cold	refreshed-weary
	Stability	
SYMPHONY		
BIRTH	sober-drunk	
DEATH	stable-changeable	
WAR WITH RUSSIA	sane-insane	
	careful-careless	
Institutions	loyal-disloyal	
	Tautness	
HOSPITAL		
PRISON	angular-rounded	
UNITED STATES	straight-curved	
COMMUNIST CHINA	sharp-blunt	
	tingling-numb	
	direct-indirect	

Procedure

The Rokeach 40-item scale and the 19 concepts and 40 adjective pairs were administered in two booklets in two 50-minute periods on separate days. (Appendix A contains the test booklets used).

Booklet 1, "Public Opinion Problem," contained the Rokeach scale and 19 concepts with 20 adjective pairs per concept. Booklet 2, "Meaning Problem," contained 19 concepts and 20 adjective pairs--different adjective pairs from the ones appearing in booklet 1. Thirty-eight sheets were made up with a concept appearing at the top of each page in capital letters. One half of the adjective pairs (20) appeared below each concept. For each concept, two lists of adjective pairs were prepared, Sheets A and B. The order of concepts was randomized (A and B sheets) in each test booklet. Adjective pairs were randomized by dimensions attempting to avoid clusters of adjectives representing the same Thesaurus dimension on one page. Also, adjective pairs were randomized in terms of adjective order. For example, combinations such as <u>good-bad</u> were presented as <u>bad-good</u>.

The instruments were administered by regular class instructors who received an information sheet (Appendix B) describing the nature of the test situation, the nature of the test, and containing a set of instructions to be read to subjects prior to administering the instruments to the test groups.

Further orientation of instructors was made available on a voluntary basis. The investigator and a representative of the University of West Virginia staff, familiar with the testing procedure, were available in the English department office to answer questions.

Instructions to be read to test groups by instructors and detailed printed instructions accompanying the instruments were designed to minimize subject error in completing the instruments and to maximize the testing time available to the subject.

Detailed instructions to subjects were patterned after those used by a number of investigators in other semantic differential studies. Instructions for responding to the Rokeach scale were patterned after Rokeach's (1960, pp. 72-73) procedure.

The two booklets were administered in a pretest to a small number of individuals representing different age, and education levels (junior high, high school, college and adult). An estimate of the time necessary to complete each booklet was noted. After completion of the booklets, the pretest subjects were interviewed regarding the instruction sheet and other aspects of the test situation. Although pretest subjects were given only the printed instructions and were not allowed to ask questions until completing both booklets, all subjects completed the booklets without difficulty within the 50-minute time period allowed for each booklet (ranging from 12 to 25 minutes per instrument). On the basis of the pretest it was concluded that the administrators of the test would give minimum additional instructions to the total test group but would answer individual questions during the test period.

Method of Analysis

The following methods of analysis were used in the study:

1. Means and standard deviations for each concept on each scale for each of the three groups were computed. These appear in Appendix C.

2. Frequency of scale position usage by each subject in closed and open groups on a sample of concepts was computed.

3. Means and standard deviations across concepts for each scale for each of the groups were computed. These appear in Appendix D.

4. Correlations for each scale with every other scale for each group were computed. These are presented in Appendix E.

5. Principal Axes factor analysis with Varimax rotations were completed.

6. Indices of factorial similarity were computed and appear in Table 16 and Appendix H.

Factor Analysis

Factor analysis used in this study is designed to determine the least number of dimensions or factors which will account for the relationship among a large number of variables. It provides a mathematical model which can be used to describe certain areas of nature (Fruchter, 1954). Comparisons were made of the connotative judgmental dimensions of closed, open, and medium individuals using this technique.

CHAPTER III

RESULTS

Data for the three groups were computed separately. In each case, the means and standard deviations of the 40 adjective-pair scales were computed and scales intercorrelated. Means and standard deviations appear in Appendix D and intercorrelations in Appendix E. Each of the correlation matrices were factor analyzed by the Principal Axes method with Varimax rotations. Unities were used in the diagonals of the correlation matrices which were submitted to Principal Axes factor analysis.

Each solution for each individual type (closed, open, and medium) was examined and compared with all other solutions. This included six solutions for closed, five for open, and four for medium individuals. The four-factor solution was chosen for each group as being the most comparable across types. A summary of factors identified for each solution appears in Appendix F.

Criteria for Semantic Structure Comparison

As has been noted previously, Osgood, Suci, and Tannenbaum (1957, p. 222) state that one of the most basic ways in which individuals or groups could differ cognitively would be in terms of the underlying dimensions of judgment they use in differentiating among concepts. They suggest that individuals or groups could differ in:

1. The nature of the factors used.
2. The relative weights given to the same set of factors.

For example, one group might give much more weight to the evaluative factor.

3. The number of factors required to account for their judgments.

However, Osgood et al. have not completely operationalized their criteria since there are no satisfactory tests of significance of factors, factor loadings, or tests of invariance among factors. Following suggestions by Harman (1960), Burt (1952), and Henrysson (1960), the criteria stated below were used in this study in comparing semantic structure among the three experimental types of subjects.

Semantic structures were defined as similar to the extent that:

1. Nature of semantic structure.

   a. Scales describing the factors were similar and similarly loaded.

   b. Factors were identified as similar on the basis of observation and on the basis of the calculation of indices of factorial similarity.

2. Number of factors. Using the Kiel-Wrigley (1960) (Kiel, 1963) criterion, the number of factors extracted is similar.

3. Relative weights given the same set of factors. Since no satisfactory index of relative weight or emphasis given a dimension is available in factor analytic terms, no comparison was made on the basis of weight.

   However, a comparison was made of the relative amount of variance accounted for by the factors which in certain other factor analytic studies using the semantic differential was considered an index of weight.

Using the above criteria, rotated matrices for each group were interpreted and comparisons of semantic structures were made among the three groups.

In the following sections, the results of the factor analysis for each experimental type are reported separately with factors identified and described. A comparison is then made of the semantic structure of

closed, open, and medium individual types.

For clarity in reporting, each relevant segment of each factor matrix has been tabled separately and appears in the text. The total matrices may be found in Appendix G. To facilitate reading, scales have been reflected and numbers rounded in the text but not in the original matrices.

Results of the Factor Analyses

Description of Semantic Structure for Closed Individuals

Evaluative Dimension. Factor I is identified as an evaluative dimension, an attitudinal variable, however, the scales suggest that closed individuals are also concerned with aspects of power and stability in making evaluative or attitudinal judgments (Table 3).

Table 3. Scales defining evaluative dimension (Factor I) for CLOSED belief-disbelief system individuals.

Scales Defining Factors	Factor Loadings I	II	III	IV	h^2
clean-dirty	.82	-.01	.11	-.11	.70
kind-cruel	.81	.06	.16	-.13	.70
good-bad	.80	.15	.21	-.12	.71
heavenly-hellish	.75	-.01	.22	-.03	.61
fair-unfair	.74	.10	.26	-.15	.65
sane-insane	.73	.11	.27	-.14	.64
soft-hard	.69	-.31	.02	-.07	-.58
loyal-disloyal	.69	.30	.20	-.04	.61
light-heavy	.65	.31	.14	.06	.54
lenient-severe	.64	-.08	.11	.07	-.44

Closed individuals use soft, light, lenient (Thesaurus potency adjectives), sane, and loyal (Thesaurus stability adjectives) in an evaluative way. A concept judged as being favorable is soft, light,

lenient, sane, and loyal in addition to being clean, kind, good, heavenly, and fair.

Except for the use of the scales suggesting power and stability, closed individuals used all five of the Thesaurus study adjectives selected as representing the Thesaurus evaluative dimension (Table 2).

Although the dimension was identified as evaluative, closed individuals do not consider all scales as purely evaluative. The most pure scales are clean and kind but good, the Thesaurus pivotal scale (Osgood, Suci, and Tannenbaum, 1957, p. 52), is partly a predictability adjective (Factor III) for closed individuals as are heavenly and fair. Lenient, a Thesaurus potency scale, is also purely evaluative.

Soft and light are partly dynamism (Factor II); loyal is partly dynamism and partly predictability. Sane is partly a predictability scale.

Dynamism Dimension. The closed individuals' concern with power and strength becomes more clear in Factor II identified as a dynamism dimension. The adjectives used, strong, advanced, large, fast, leading, and mature, indicate a concern with a dynamic strength or leadership quality (Table 4).

Table 4. Scales defining dynamism dimension (Factor II) for CLOSED belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings I	II	III	IV	h^2
strong-weak	.09	.68	.13	-.14	.50
advanced-retarded	.47	.52	-.07	.23	.56
large-small	-.37	.51	-.07	-.02	.41
fast-slow	.03	.51	-.32	-.23	.42
mature-youthful	-.23	.46	.29	.23	.41
leading-following	.14	.46	-.04	-.31	.33

It is as if closed individuals were concerned with estimating the force potential of a concept--using a combination of scales suggesting strength or power with scales suggesting activity, forward movement, and leadership. Closed individuals associate a notion of maturity with activity and strength in their judgments along this dimension.

Closed individuals show an independence from the Thesaurus use of adjectives combining into a dynamism dimension strong and large, Thesaurus potency adjectives, advanced and mature, novelty scales, fast, an activity scale, and leading, an aggressiveness scale.

Strong is most purely a dynamism adjective for closed individuals. But advanced is also partly an evaluative and a sensory-ennui (Factor IV) scale. Fast is also partly predictability; mature is partly an evaluative scale, a predictability, and a sensory-ennui scale. Leading is partly a sensory-ennui scale.

Predictability Dimension. Along with an evaluative and dynamism estimate of a concept, closed individuals make a predictability estimate in their judgments (Table 5).

Table 5. Scales defining predictability dimension (Factor III) for CLOSED belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings				
	I	II	III	IV	h^2
usual-unusual	.06	-.05	.59	-.05	.36
expected-unexpected	.14	-.07	.50	-.23	.32
calm-excitable	.19	.10	.42	.38	.37
direct-indirect	.19	.16	.36	.32	.30
rounded-angular	.06	-.06	.34	.05	.13
simple-complex	-.06	-.22	.32	.30	.24

Factor III, identified as a predictability dimension, has usual and rounded as the purest predictability scales while expected, calm and direct distribute their meaning to the sensory-ennui dimension. Simple is partly sensory-ennui and dynamism.

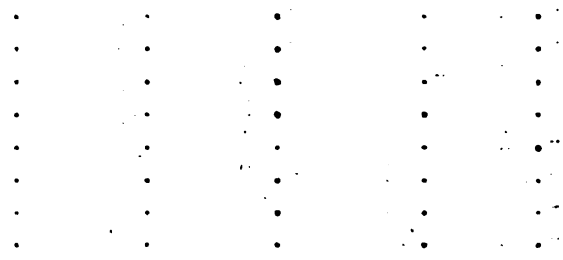
Sensory-Ennui Dimension. The adjectives numb, resisting, cold, blunt, and tasteless suggest a concreteness of judgment operationalized in terms of physical senses (Table 6). The adjectives boring and passive seem to summarize the result of sensory judgments.

Table 6. Scales defining a sensory-ennui dimension (Factor IV) for CLOSED belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings				
	I	II	III	IV	h^2
numb-tingling	-.41	.11	-.03	.55	.48
resisting-impelling	-.10	-.03	-.17	.53	.33
cold-hot	.05	-.17	.01	.53	.31
blunt-sharp	-.16	-.02	.13	.53	.32
boring-interesting	-.41	-.08	.01	.51	.44
tasteless-savory	-.51	-.02	-.02	.51	.52
passive-active	-.12	-.41	.36	.45	.52
drawn-propelled	-.12	-.24	.02	.37	.21

Resisting, cold, and blunt are purely sensory-ennui adjectives. But numb is also heavily evaluative as are boring and tasteless. Passive is also partly a predictability scale.

The Thesaurus list classifies numb and blunt as tautness, cold and passive as activity, boring and tasteless as receptivity, and resisting as aggressiveness.



Description of Semantic Structure for Open Individuals

Evaluative Dimension. For open individuals, Factor I is also an evaluative dimension, but in Thesaurus terms, only three of the first five scales are evaluative adjectives. Like closed individuals, open systems use soft and light evaluatively but unlike closed individuals they do not use sane and loyal in this dimension (Table 7).

Table 7. Scales defining an evaluative dimension (Factor I) for OPEN belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings I	II	III	IV	h^2
kind-cruel	.75	.30	-.17	-.13	.70
clean-dirty	.72	.24	-.13	-.08	.60
soft-hard	.71	-.10	.05	-.04	.51
heavenly-hellish	.70	.15	-.16	-.02	.53
light-heavy	.68	-.14	.15	-.00	.51
good-bad	.66	.33	-.26	-.15	.64
fair-unfair	.63	.36	-.20	-.10	.58

Open individuals regard heavenly as a purely evaluative scale and soft and light, both Thesaurus potency scales, as purely evaluative. Kind and clean are also partly dynamism scales, and good and fair are partly dynamism and partly predictability.

Dynamism Dimension. In their second factor, open individuals display a concern for aspects of force in their judgment of concepts combining scales that suggest strength or power with activity, and movement (Table 8).

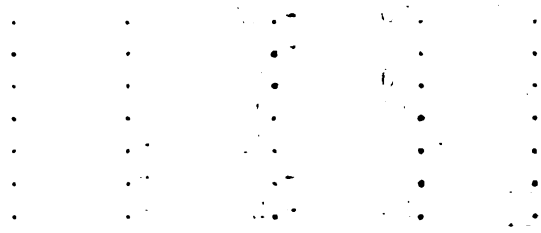


Table 8. Scales defining a dynamism dimension (Factor II) for OPEN belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings I	II	III	IV	h^2
strong-weak	.12	.64	-.18	-.20	.50
advanced-retarded	.24	.60	-.06	-.30	.51
fast-slow	-.06	.56	.36	-.12	.47
active-passive	.05	.56	.38	-.23	.52
sober-drunk	.31	.52	-.19	.05	.41
loyal-disloyal	.44	.50	-.32	-.16	.57
direct-indirect	.08	.46	-.16	-.07	.24
straight-curved	.17	.43	-.02	.11	.22

The factor is identified as dynamism and is highly similar to the dynamism dimension of closed individuals. However, loyal, a closed system evaluative scale, is an aspect of dynamism for open systems who also use active, sober, direct and straight in making judgments along this dimension.

For open individuals, strong is purely a dynamism adjective. But advanced is partly evaluative and partly sensory-ennui. Fast is partly predictability; active is partly predictability and partly sensory-ennui. Sober is partly evaluative.

Along this dimension, open system individuals utilize adjectives which represent primarily three Thesaurus dimensions: potency (strong), novelty (advanced), and activity (fast, active).

Predictability Dimension. Factor III resembles the closed individuals' predictability dimension (Table 9). It is also identified as predictability.

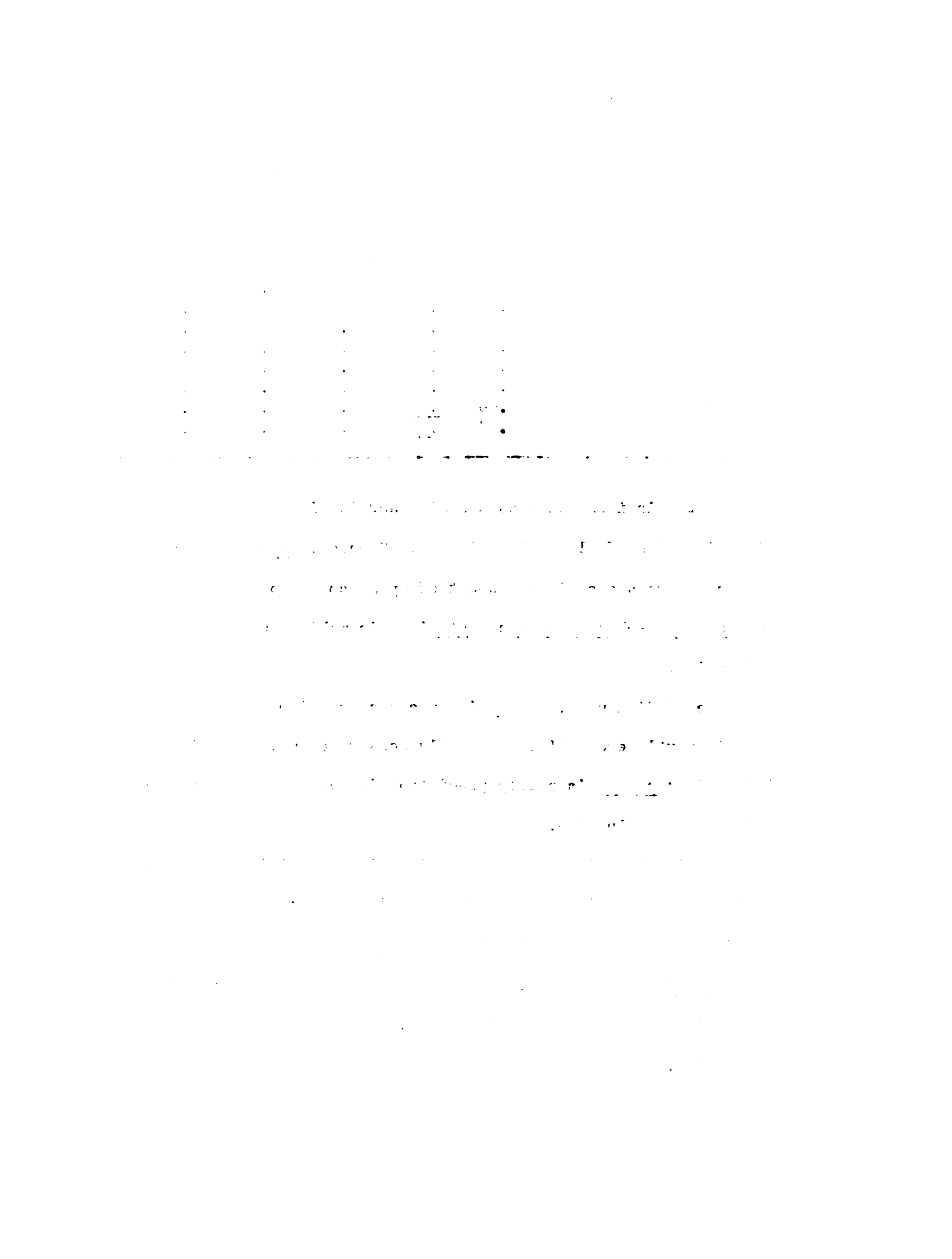


Table 9. Scales defining a predictability dimension (Factor III) for OPEN belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings				
	I	II	III	IV	h^2
changeable-stable	-.07	-.22	.60	-.08	.42
calm-excitable	.14	.00	-.54	.21	.36
usual-unusual	.04	.06	-.53	.09	.29
mature-youthful	-.32	.21	-.49	.00	.39
expected-unexpected	.02	.02	-.37	-.08	.15

Closed and open individuals both use usual, expected, and calm in making judgments along this dimension but open individuals also include stable and mature while closed individuals use direct, rounded and simple.

Usual is purely a predictability adjective for open system individuals. Calm is also a sensory-ennui scale; changeable is also a dynamism adjective; mature is also an evaluative and a dynamism scale.

In the Thesaurus list, these adjectives represent stability (stable), activity (excitable), and novelty (unusual).

Sensory-Ennui Dimension. This dimension resembles the closed individuals' sensory-ennui dimension. Both closed and open individuals use numb, resisting, cold, blunt, boring, tasteless, and drawn along this dimension (Table 10).

In addition, open individuals use following and complex while closed individuals use passive.

Table 10. Scales defining a sensory-ennui dimension (Factor IV) for OPEN belief-disbelief system individuals.

Scales Defining Factors	Factor Loadings I	II	III	IV	h^2
drawn-propelled	-.05	-.04	.11	.62	.40
blunt-sharp	-.16	.08	-.11	.55	.35
resisting-impelling	-.03	.03	.16	.55	.33
following-leading	-.04	-.32	.14	.48	.35
numb-tingling	-.36	-.08	-.24	.48	.42
tasteless-savory	-.46	-.13	-.12	.47	.47
cold-hot	.12	-.22	-.20	.46	.32
boring-interesting	-.32	-.27	-.07	.43	.37
simple-complex	-.02	-.30	-.25	-.38	.30

For open individuals drawn, blunt, and resisting are purely sensory-ennui scales while following is also partly a dynamism scale; numb is partly evaluative and partly predictability. Boring is partly evaluative and partly dynamism.

In terms of purely sensory-ennui scales, both closed and open individuals agree on resisting and blunt as the purest scales along this dimension.

Description of Semantic Structure for Medium Individuals

Evaluative Dimension. Regardless of position along the belief-disbelief continuum in terms of cognitive organization, a high similarity on the evaluative or attitudinal dimension is evident among the three types of individuals.

However, the use of loyal, sane (like closed individuals) and careful suggests a concern with an element of stability in the medium system evaluative judgment of a concept (Table 11).

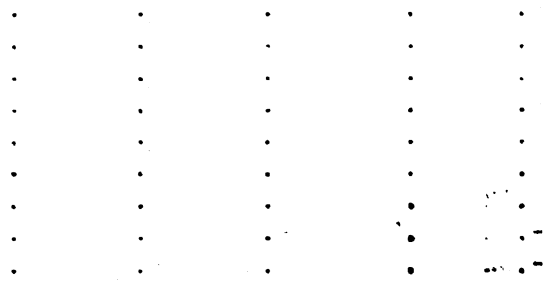


Table 11. Scales defining an evaluative dimension (Factor I) for MEDIUM belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings I	II	III	IV	h^2
good-bad	.83	.09	-.15	.00	.71
kind-cruel	.82	.09	-.23	.03	.74
clean-dirty	.77	.09	-.29	.01	.69
loyal-disloyal	.77	.11	.05	.07	.61
sane-insane	.77	.11	-.06	.16	.63
fair-unfair	.75	.08	-.12	.18	.62
heavenly-hellish	.72	-.09	-.29	.03	.60
careful-careless	.64	.20	.13	.08	.48

For medium individuals, good, loyal, sane and fair are pure evaluative scales but kind, clean, and heavenly are also potency scales. On the other hand, closed individuals regard clean, kind, and lenient as purely evaluative scales and open individuals regard heavenly, soft, and light as purely evaluative.

There is considerable agreement among the three types in the use of scales on the evaluative dimension. All three types use all of the Thesaurus evaluative scales along their evaluative dimensions although only the closed group includes them among the first five heaviest loadings.

Closed and medium individuals use sane and loyal evaluatively while open individuals consider loyal a dynamism adjective. Closed and open individuals consider soft and light evaluative scales while medium individuals do not.

Activity Dimension. Three of the scales taken from the Thesaurus sample as representing the activity dimension appear among the first five scales on this factor for medium individuals. They are active, fast, and hot (Table 12).

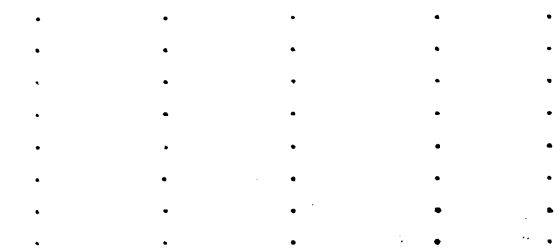


Table 12. Scales defining an activity dimension (Factor II) for MEDIUM belief-disbelief system individuals.

Scales Defining Factors	Factor Loadings				
	I	II	III	IV	h^2
active-passive	.13	.68	.00	-.03	.48
fast-slow	.04	.63	.13	-.05	.42
hot-cold	-.06	.55	.02	.10	.32
advanced-retarded	.50	.53	.12	.03	.54
boisterous-shy	-.22	.52	.19	-.09	.36
complex-simple	.12	.50	-.05	.10	.28
tingling-numb	.31	.47	-.32	-.01	.42
excitable-calm	-.24	.46	-.24	-.28	.41
interesting-boring	.36	.46	-.12	.06	.37
colorful-colorless	.43	.46	-.29	-.20	.51
savory-tasteless	.41	.45	-.19	.09	.42
sharp-blunt	.06	.45	-.22	.12	.27
leading-following	.33	.41	.20	-.07	.32

The factor is identified as an activity dimension and of the three experimental types most clearly resembles the Thesaurus activity dimension. This factor is also quite different from any of the dimensions in the closed or open structures.

For medium individuals, active, fast, hot, and complex are the purest activity adjectives. Advanced and boisterous are considered partly evaluative. However, all three types use advanced and fast among the scales on their second factors. Open and medium individuals both use active on the second factor.

Potency Dimension. For medium individuals, Factor III is identified as a potency dimension closely resembling the Thesaurus dimension (Table 13). It is also quite different from any of the dimensions in the closed or open individual structures.

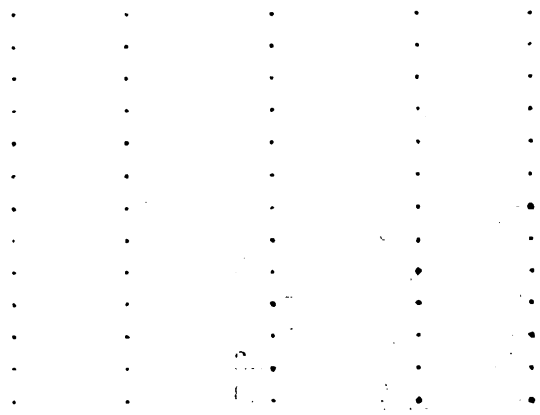


Table 13. Scales defining a potency dimension (Factor III) for MEDIUM belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings I	II	III	IV	h^2
heavy-light	-.38	.05	.61	.00	.52
mature-youthful	-.02	-.09	.59	.14	.38
strong-weak	.28	.37	.57	-.09	.54
hard-soft	-.46	.06	.54	.02	.51
large-small	-.22	.25	.50	-.08	.37
old-new	-.27	-.25	.44	.11	.34
stable-changeable	.30	-.30	.35	.33	.42

Mature is the purest potency scale. Heavy, strong, and hard are considered partly evaluative scales. Large is partly evaluative and partly activity. Medium and open individuals both use mature on their third factors.

Tautness Dimension. The scales on Factor IV represents two dimensions on the Thesaurus list: tautness and novelty. Together the scales do not suggest a single dimension, however, with straight and angular (both tautness scales) most heavily loaded on this factor, the dimension is identified as tautness (Table 14).

Table 14. Scales defining a tautness dimension (Factor IV) for MEDIUM belief-disbelief system individuals.

Scales Defining Factor	Factor Loadings I	II	III	IV	h^2
straight-curved	.04	.17	-.01	.61	.40
angular-rounded	-.21	.26	-.11	.50	.38
usual-unusual	.18	-.19	.14	.48	.32
expected-unexpected	.17	-.08	.02	.47	.26

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Straight is a relatively pure tautness adjective; angular is also partly an evaluative and an activity scale.

Similarities and Differences in Semantic Structure

The semantic structures of two or more individual types are defined as similar to the extent that similar scales, similarly loaded, describe the factors, and to the extent that factors are identified as similar on the basis of inspection and computation of indices of factorial similarity. Table 15 summarizes the identified factors, the scales defining each factor, and scale loadings for each of the individual types.

An examination of the table shows both closed and open individuals use factors identified as evaluative, dynamism, predictability, and sensory-ennui. They use similar scales along these dimensions with similar but not equal loadings. The dimensions in the medium system semantic structure are identified as evaluative, activity, potency, and tautness.

All three types use a similar evaluative dimension. All five of the Thesaurus list evaluative scales appear among the adjectives describing this dimension for each of the types. For closed individuals these appear as the five most heavily loaded adjectives. Closed and open individuals use the Thesaurus potency adjectives, soft, and light, evaluatively. Closed individuals also use lenient in this way. Closed and medium individuals use the Thesaurus stability adjectives, sane and loyal on the evaluative dimension.

Using the Thesaurus study as a benchmark, none of the other closed and open dimensions resemble a purely Thesaurus dimension. Closed and open individuals tend to use adjectives in ways different from the Thesaurus list.

Table 15. Semantic structures of closed, open, and medium belief-disbelief system individuals with Thesaurus dimension classifications.

Closed Individuals			Open Individuals			Medium Individuals		
I Evaluative		Loading	I Evaluative		Loading	I Evaluative		Loading
clean	(E)	.82	kind	(E)	.75	good	(E)	.83
kind	(E)	.81	clean	(E)	.72	kind	(E)	.82
good	(E)	.80	soft	(P)	.71	clean	(E)	.77
heavenly	(E)	.75	heavenly	(E)	.70	loyal	(S)	.77
fair	(E)	.74	light	(P)	.68	sane	(S)	.77
sane	(S)	.73	good	(E)	.66	fair	(E)	.75
soft	(P)	.69	fair	(E)	.63	heavenly	(E)	.72
loyal	(S)	.69				careful	(S)	.64
light	(P)	.65						
lenient	(P)	.64						
II Dynamism			II Dynamism			II Activity		
strong	(P)	.68	strong	(P)	.64	active	(A)	.68
advanced	(N)	.52	advanced	(N)	.60	fast	(A)	.63
large	(P)	.51	fast	(A)	.56	hot	(A)	.55
fast	(A)	.51	active	(A)	.56	advanced	(N)	.53
mature	(N)	.46	sober	(S)	.52	boisterous	(Ag)	.52
leading	(Ag)	.46	loyal	(S)	.50	complex	(A)	.50
			direct	(T)	.46	tingling	(T)	.47
			straight	(T)	.43	excitable	(A)	.46
						interesting	(R)	.46
						colorful	(R)	.46
						savory	(R)	.45
						sharp	(T)	.45
						leading	(Ag)	.41
III Predictability			III Predictability			III Potency		
usual	(N)	.59	changeable	(S)	.60	heavy	(P)	.61
expected	(N)	.50	calm	(A)	-.54	mature	(N)	.59
calm	(A)	.42	usual	(N)	-.53	strong	(P)	.57
direct	(T)	.36	mature	(N)	-.49	hard	(P)	.54
rounded	(T)	.34	expected	(N)	-.37	large	(P)	.50
simple	(A)	.32				old	(N)	.44
						stable	(S)	.35
IV Sensory-Ennui			IV Sensory-Ennui			IV Tautness		
numb	(T)	.55	drawn	(Ag)	.62	straight	(T)	.61
resisting	(Ag)	.53	blunt	(T)	.55	angular	(T)	.50
cold	(A)	.53	resisting	(Ag)	.55	usual	(N)	.48
blunt	(T)	.53	following	(Ag)	.48	expected	(N)	.47
boring	(R)	.51	numb	(T)	.48			
tasteless	(R)	.51	tasteless	(R)	.47			
passive	(A)	.45	boring	(R)	.46			
drawn	(Ag)	.37	cold	(A)	.43			
			simple	(A)	-.38			

Key to Thesaurus dimensions:

E = Evaluative A = Activity T = Tautness N = Novelty
P = Potency S = Stability Ag = Aggressiveness R = Receptivity

The factors in the medium individuals' semantic structure closely resemble the Thesaurus dimensions. For example, all of the Thesaurus activity adjectives are among those describing the medium system activity dimension, and four Thesaurus potency scales describe the medium system potency dimension.

Factorial Similarity. Further support for the observed similarities and differences among factorial structures comes from a computation of indices of factorial similarity.

An approximate method for computing similarity among factors developed by several writers and discussed by Harman (1960) and Henrysson (1960) was used to determine indices of similarities among factors in this study. A lower limit of good fit of .75 was computed.[4]

A comparison of each factor on any one factor analysis with each factor of all other analyses was made. Table 16 presents comparison among the individual types on Factors I, II, III, and IV. Other comparisons appear in Appendix H.

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[4]The formula used for computing indices of factorial similarity was:

$$\sigma p\ q = \frac{\Sigma 1\ a\ j\ p,\ 2\ a\ j\ q}{\sqrt{(\Sigma 1\ a^2\ j\ q)\ (\Sigma 2\ a^2\ j\ p)}}$$

The formula for computing the lower limit of good fit was:

$$\frac{1 + \frac{1}{\sqrt{k}}}{2}$$

Table 16. Indices of factorial similarity.

Comparisons	Factors			
	I	II	III	IV
Closed/Open	.981	.859	.915	.917
Closed/Medium	.962	.599	.286	.341
Open/Medium	.910	.679	.303	-.019

The semantic structures of closed and open system individuals appear to be similar since the indices are above .75, the lower limit of good fit determined for this study.

The indices suggest similarity among all groups on the first factor (evaluative), and differences between closed and medium and open and medium individuals on all other factors with indices falling below the .75 figure.

Number of Factors

Semantic structures were defined as similar to the extent that the number of factors extracted was similar.

Using the Kiel-Wrigley (1960) criterion,[5] the number of factors extracted for each of the three individual types varied. Six were considered significant for closed individuals, five for open individuals, and four for medium individuals. In other words, a sample of closed

[5]The Kiel-Wrigley criterion states that the maximum number of factors is reached when each factor has at least three variables which load highest on that particular factor.

individuals utilizes more dimensions in accounting for its judgments than samples of open or medium individuals. And a sample of open individuals uses more dimensions than a sample of medium individuals.

Variance Accounted For

In terms of the per cent of total and common variance accounted for by the four factors, the evaluative factor (I) accounted for most variance for each of the three individual types (Table 17).

Table 17. Percentage of total and common variance accounted for by each factor.

	Factors							
	I		II		III		IV	
	Variance							
Groups:	Total	Common	Total	Common	Total	Common	Total	Common
Closed	21.6	49.9	7.3	16.8	6.1	14.0	8.4	19.3
Open	16.2	39.7	9.9	24.2	7.0	17.1	7.7	18.9
Medium	19.1	44.8	11.7	27.6	7.4	17.4	4.3	10.0

For closed individuals, the evaluative factor (I) accounted for most of the total and common variance (21.6 and 49.9) with medium individuals next (19.1 and 44.8) and open individuals last (16.2 and 39.7).

The first three factors accounted for most of the total and common variance for the medium individuals which follows the trend of other studies in which evaluative, activity, and potency are the major dimensions extracted and identified.

Semantic Structure and Cognitive Structure

Scales used by closed and open individuals are similar on each dimension and loadings are similar but not equal. Factors are identified as being similar and each factor met the criterion of similarity with indices above the lower limit of good fit established for the study. Except for a similar evaluative dimension, scales used by medium individuals are different from those used by closed and open individuals. Factors, other than evaluative, were identified as being different and did not meet the criterion of similarity with indices failing to reach the lower level of good fit.

The criteria for configurational invariance which include different population using the same test battery are met by the closed and open individuals' factorial structures (Henryssson, 1960, pp. 46, 111-122). The closed individuals show more variance (Appendix I) than open individuals and this should result in a corresponding increase in the size of loadings for closed individuals. However, the configuration or pattern of loading remains fairly similar. The formula used for computing the indices of similarity is applicable to cases of configurational invariance.

With respect to the first hypothesis that differences in cognitive structure as indexed along a closed-open belief-disbelief system continuum are associated with differences in semantic structure, a number of conclusions may be stated.

As far as the evidence was developed in this study, it appears that:

1. The semantic structures of samples of closed and open belief-disbelief system individuals tend to be similar in nature.

2. The semantic structures of samples of individuals at the ends of the continuum tend to differ from the semantic structure of individuals at the middle.

3. Using the Kiel-Wrigley criterion, samples of individuals at the closed and open ends of the continuum tend to require more factors to account for their judgments than samples of medium individuals. Samples of open individuals tend to use fewer factors than samples of closed systems but more than samples of medium individuals.

4. The evaluative dimension accounts for more total variance of the closed individual sample than samples of open and medium individuals.

Description of Concept Meanings

Similarity of factor structures between closed and open belief-disbelief system individuals does not mean that each rates individual concepts in the same way. Using the total group means, presented in Appendix C, profiles were drawn for scale-by-scale comparison among the three experimental types. The profiles for MY MOTHER and COMMUNIST CHINA are presented in Figures 1 and 2 in the text while profiles for other concepts appear in Appendix J.

Closed individuals are represented by a solid line in the profiles, open individuals by a broken line, and medium individuals by a dotted line. The "1" score appears at the left and the "7" score at the right of each profile.

Rokeach and Kemp (Rokeach, 1960, pp. 357-359) found that closed and open individuals differed in the degree of ambivalence expressed toward mother with closed individuals expressing less ambivalence and more glorification than open individuals. Therefore, one would expect differences in meaning to be reflected in semantic differential scores on scales used to judge the concept MY MOTHER. One would expect a

Figure 1. Mean judgment profile.

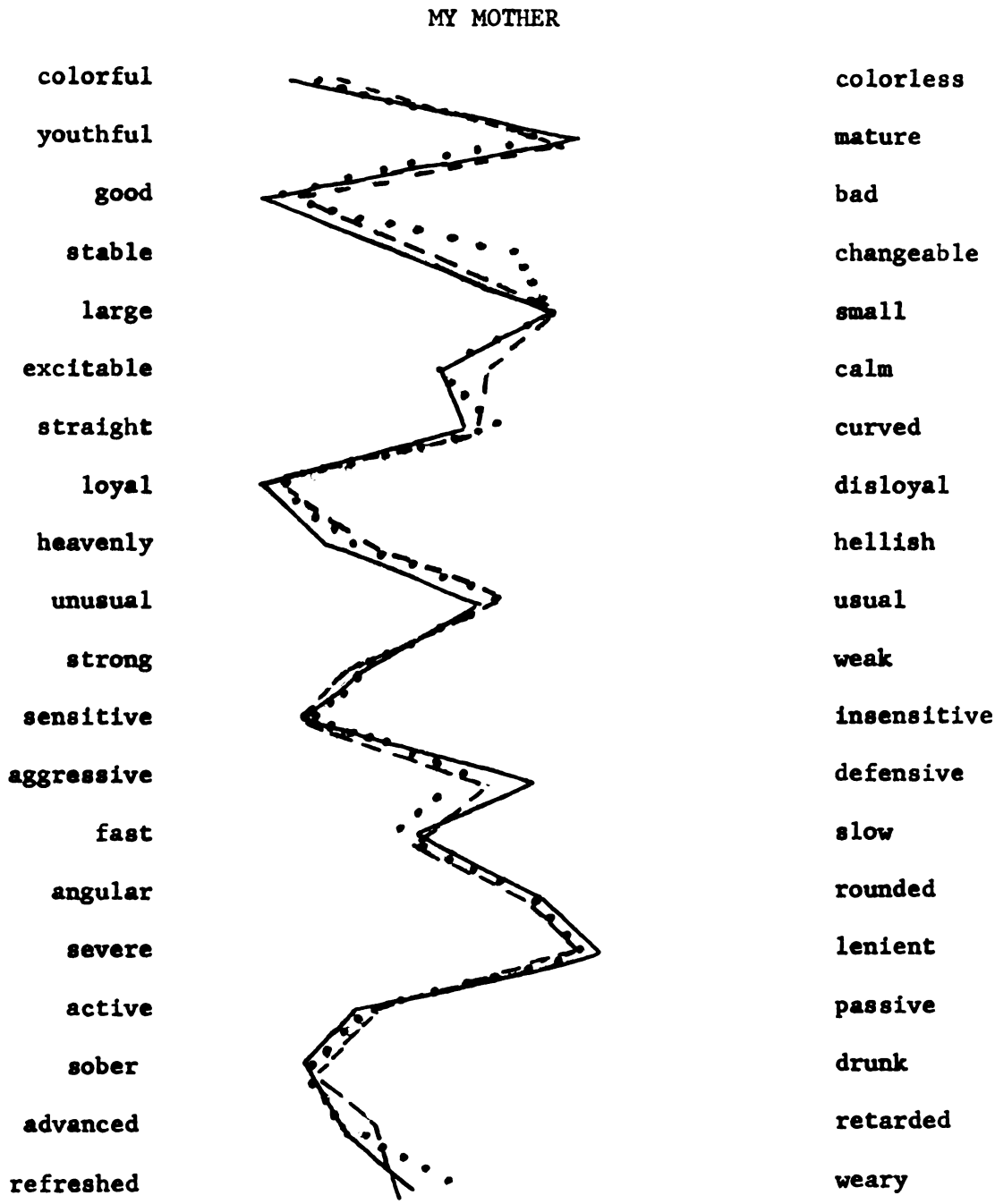
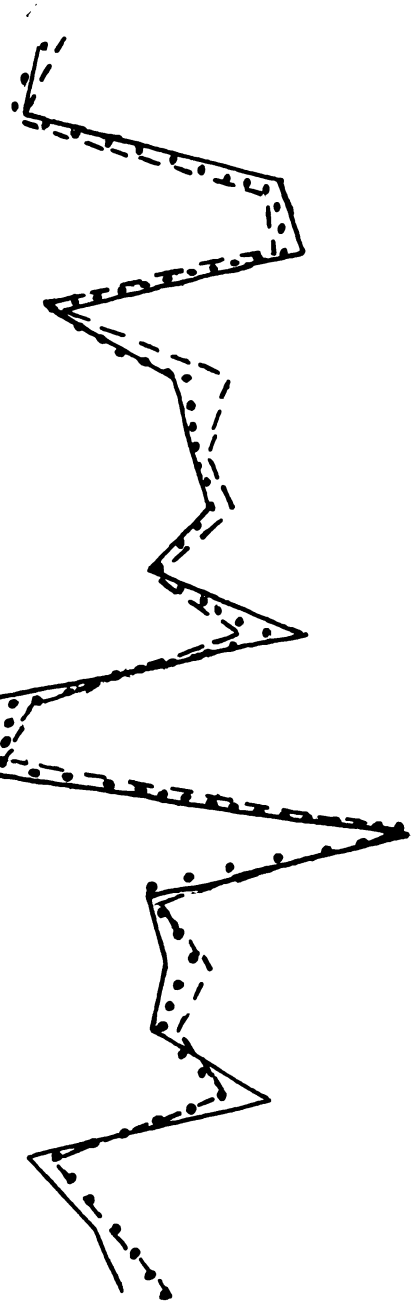


Figure 1. Continued

MY MOTHER

careful		careless
kind		cruel
new		old
heavy		light
interesting		boring
propelled		drawn
hot		cold
sharp		blunt
savory		tasteless
unexpected		expected
clean		dirty
sane		insane
hard		soft
complex		simple
impelling		resisting
tingling		numb
boisterous		shy
fair		unfair
direct		indirect
leading		following

Closed _____ Open ----- Medium . . . . .

higher positive evaluation on scales representing the evaluative dimension for closed individuals than for open individuals.

Figure 1, showing the profile for MY MOTHER, shows that on all dimensions and scales, closed and open individuals show a great similarity in responses. However, slight differences are evident.

For example, on the evaluative dimension, closed and open individuals tend to see MY MOTHER in similar degrees of good, heavenly, kind, clean and fair. But the tendency for closed individuals is to see MY MOTHER as more good, heavenly, kind, clean and fair than open individuals.

The question is: are these slight differences in mean judgment statistically significant? Following suggestions by Osgood, Suci, and Tannenbaum (1957, ch. 3), one adjective pair was chosen to represent each of the dimensions of semantic space of closed and open individuals. A t-test was applied to determine whether differences in judgments were statistically significant.

To represent the evaluative dimension, the scale clean was chosen. Other scales which appear on this dimension for both closed and open individuals are: kind, heavenly, light, good, soft, and fair. The scale strong was selected to represent the dynamism dimension. Other scales which appear for both individual types are advanced and fast. To represent predictability usual was used (other scales used by both types are expected and calm). To represent sensory-ennui, blunt was chosen (other scales are numb, resisting, boring, cold, drawn, and tasteless).

Differences between closed and open individuals on other dimensions were not statistically significant.

For closed individuals MY MOTHER is a significantly more positive concept than for open individuals. But both closed and open individuals regard MY MOTHER as fairly strong (closed 2.6, open 2.6) on the

dynamism dimension; fairly neutral (closed 3.9, open 4.1) on the scale usual representing predictability; and moderately sharp (closed 3.5, open 3.8) on the sensory-ennui dimension.

Since MY MOTHER represents a highly positive concept on the evaluative dimension (closed 1.4, open 1.8), closed and open individuals also were compared on a highly negative concept, COMMUNIST CHINA (closed 6.0, open 5.6).

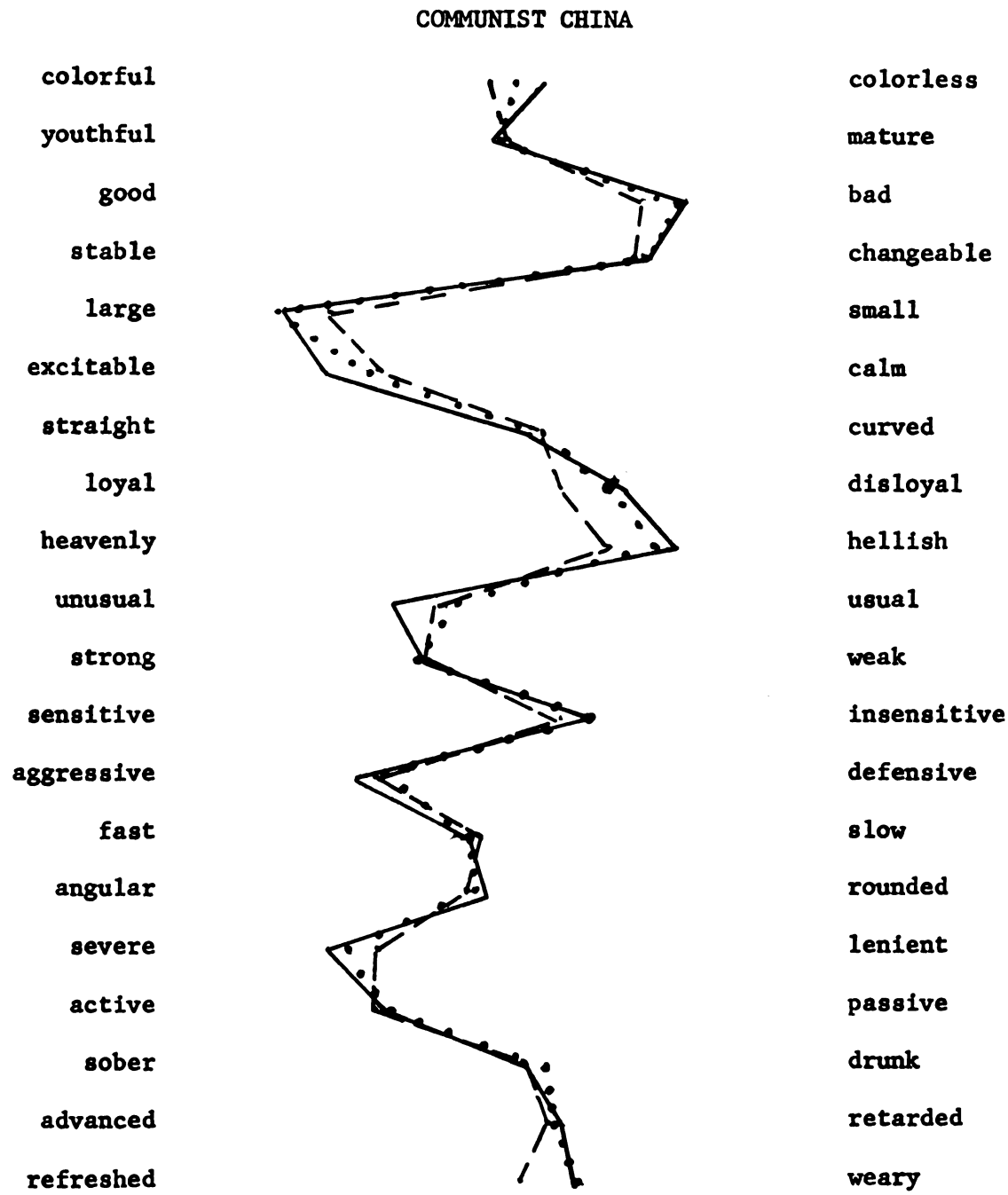
In general, the profile in Figure 2 suggests that for both closed and open individuals COMMUNIST CHINA represents a concept described by the adjectives bad, hellish, cruel, dirty, and unfair. However, in terms of the differences between closed and open individuals on these scales, it appears that closed individuals tend to regard COMMUNIST CHINA as more bad, hellish, cruel, dirty, and unfair than open individuals.

Using the same adjectives to represent the dimensions as in the case above, a t-test was applied to determine whether differences were statistically significant.

As in the case in which both individual types judged a concept regarded as highly positive, closed and open groups differed significantly in their meanings on the evaluative dimension but differences on other dimensions were not statistically significant.

For closed individuals COMMUNIST CHINA is a more negative concept than for open individuals on the evaluative dimension. But both regard COMMUNIST CHINA as moderately strong (closed 3.1, open 3.1) on the dynamism dimension; fairly unusual (closed 2.7, open 3.3) on the predictability dimension; and rather neutral (closed 4.2, open 4.1) on blunt representing sensory-ennui.

Figure 2. Mean judgment profiles

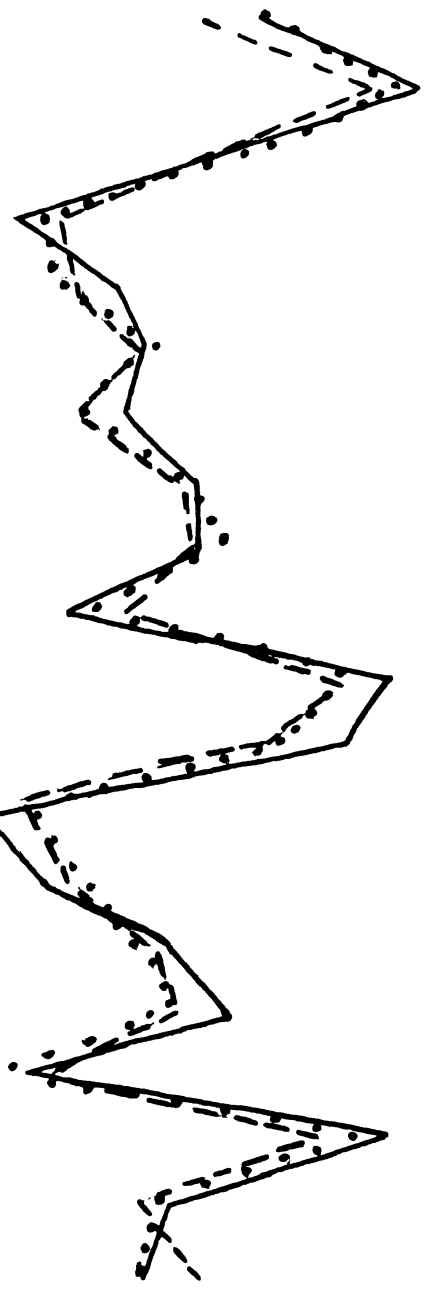


Key:

Closed _____ Open ----- Medium . . . . .

Figure 2 - continued

COMMUNIST CHINA



Careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Scale Position Usage

The hypothesis that closed more than open individuals tend toward dichotomous, maximal acceptance or rejection type of responses, operationalized in terms of 1 and 7 position usage on the semantic differential, was supported statistically. Using the median test, the X^2 figure (one degree of freedom) of 3.08 was statistically significant at the .05 (one-tail) level (Siegel, 1956).[6]

Further support for this hypothesis comes from an examination of the standard deviations across concepts for each of the individual types, presented in Appendix I. Scales of closed individuals consistently show a greater variance (33 out of 40 cases) than either open or medium individuals thus reflecting the tendency of closed systems to use positions at the ends of the scale.

Also supported was the hypothesis that open more than closed individuals would utilize judgments indicating maximal conflict operationalized in terms of 4 position usage on the semantic differential. The X^2 figure (one degree of freedom) of 3.60 was statistically significant at the .05 level (one-tail).

However, no significant difference was found between open and closed tendencies to utilize more discriminating judgments, operationalized in terms of 2, 3, 5, and 6 position responses on the semantic differential. The X^2 figure (one degree of freedom) of .156 was not statistically significant at the .05 level (one-tail).

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[6]Frequency of position usage for each individual in the closed and open categories was computed across the following concepts: NIKITA KHRUSHCHEV, ME, MY MOTHER, JOHN F. KENNEDY, SNOW, HOSPITAL, COMMUNIST CHINA, and WAR WITH RUSSIA.

On the basis of the evidence as developed here, it appears that both closed and open samples tend to display "extreme" types of response behaviors. The closed sample tends toward responses defined as representing dichotomous, maximal accepting and rejecting types of judgments and the open sample tends toward responses defined as representing maximal conflict judgments. Individuals or groups are defined as displaying extreme judgments if they tend to limit their responses primarily to polar (1 and 7) or middle (4) positions rather than making judgments described by Osgood et al. (Osgood, Suci, and Tannenbaum, 1957, pp. 226-236; and Osgood, 1941) as more discriminating and finely graded (2, 3, 5, and 6).

CHAPTER IV

DISCUSSION

Rokeach's theory postulates a cognitive organization model consisting of three dimensions: belief-disbelief, central-peripheral, and time, each with a number of properties but all reducible to a single dimension--organization along a closed-open continuum.

Differences in cognitive structure are assumed to be measurable by a 40 item scale which purports to index the location of individuals along the belief-disbelief continuum. The cognitive structures of individuals at the closed and open ends of that continuum are assumed to differ. The scale also is assumed to measure general authoritarianism, and general intolerance.

Individuals who accept all of the items on the scale (high scorers) are assumed to fall at the closed end of the belief-disbelief continuum. Individuals who reject all items (low scorers) are assumed to fall at the open end of the continuum.

The findings of research generated by the Rokeach theory associate differences in cognitive structure with differences in cognitive functioning. From the repeated behaviors of closed and open individuals in a variety of psychological situations--conceptual, perceptual, aesthetic, time perception, ideological, interpersonal, communication, and emotional--the cognitive processing styles of individuals at the extreme ends of the belief-disbelief continuum may be characterized as tending toward simplicity for closed individuals and toward complexity or

multidimensionality for open individuals.

These cognitive styles characteristic of closed more than open individuals are evident in tendencies toward:

1. Elimination from consideration of relevant elements.
2. Failure to make fine discriminations among elements.
3. Less knowledge of disbelief systems.
4. Less ability to integrate multiple elements into new systems.
5. Less tolerance of incongruent elements in the system.
6. Simplification and resistance to changes in the belief system.
7. Less ability to distinguish between and to evaluate independently the substantative content of a message and the source of the message.
8. Rejection of situations perceived as threatening to the belief system.

The following question represents the major focus of the study:

What are the characteristics of semantic structure and scale checking behaviors of samples of individuals who differ in cognitive structure (falling at two ends and the middle of the closed-open continuum) and cognitive processing styles?

Meaning was defined within the framework of Osgood's mediation theory as a representational mediation process, a complex reaction divisible into some unknown but finite number of components. This definition is coordinated with the semantic differential by identifying the complex mediation reaction with a point in a postulated multidimensional space. The projections of the scales onto the various dimensions of the semantic space are assumed to correspond to the component mediating reactions associated with the sign and to the degree of intensity.

The essential operation of measurement is the successive allocation of a concept to a series of descriptive scales defined by polar adjectives. The adjectives are selected to be representative of the major dimensions along which meaningful processes vary.

In order to determine what scales have these properties, a number of factor analytic studies were initiated by Osgood and others to determine what are the major dimensions of that semantic space.

The present study was designed to determine the major dimensions of semantic space for individuals categorized along a closed-open belief-disbelief system continuum.

In previously cited factor analytic studies using the semantic differential, it was demonstrated that judgmental frames tend toward maximal simplicity with evaluation, potency, and activity consistently arising as the major dimensions of semantic space across a variety of testing conditions, methodological differences, adjective pairs, concepts, and individual characteristic variables. However, Osgood and Tannenbaum (1955) have observed, as the literature cited previously suggests, that there are individual differences within this general tendency which may be associated with individual characteristic variables.

Using individual characteristic variables postulated by the Rokeach theory, it was hypothesized that:

1. Differences in cognitive structure as indexed along a closed-open belief-disbelief system continuum are associated with differences in semantic space in terms of its nature and dimensionality.

2. Differences in cognitive structure as indexed along a closed-open belief-disbelief system continuum are associated with differences in scale position usage.

Conclusions

With respect to the first hypothesis, to the extent that the evidence was developed here, it appears that:

1. Differences in cognitive structure as indexed along a closed-oepn belief-disbelief system continuum tend to be associated with differences in semantic structure.

    a. The semantic structure of samples of individuals at the closed and open ends of the continuum tend to be similar.

    b. The semantic structure of samples of individuals at the closed and open ends of the continuum tend to differ from the semantic structure of a sample of individuals at the middle of the continuum.

    c. Samples of individuals at the closed and open ends and the middle of the belief-disbelief continuum utilize a similar evaluative dimension in their semantic structures.

    d. A sample of individuals at the closed end of the continuum tends to require more factors to account for its judgments than samples of medium and open individuals.

    e. A sample of individuals at the open end of the continuum tends to require more factors to account for its judgments than a sample of medium individuals.

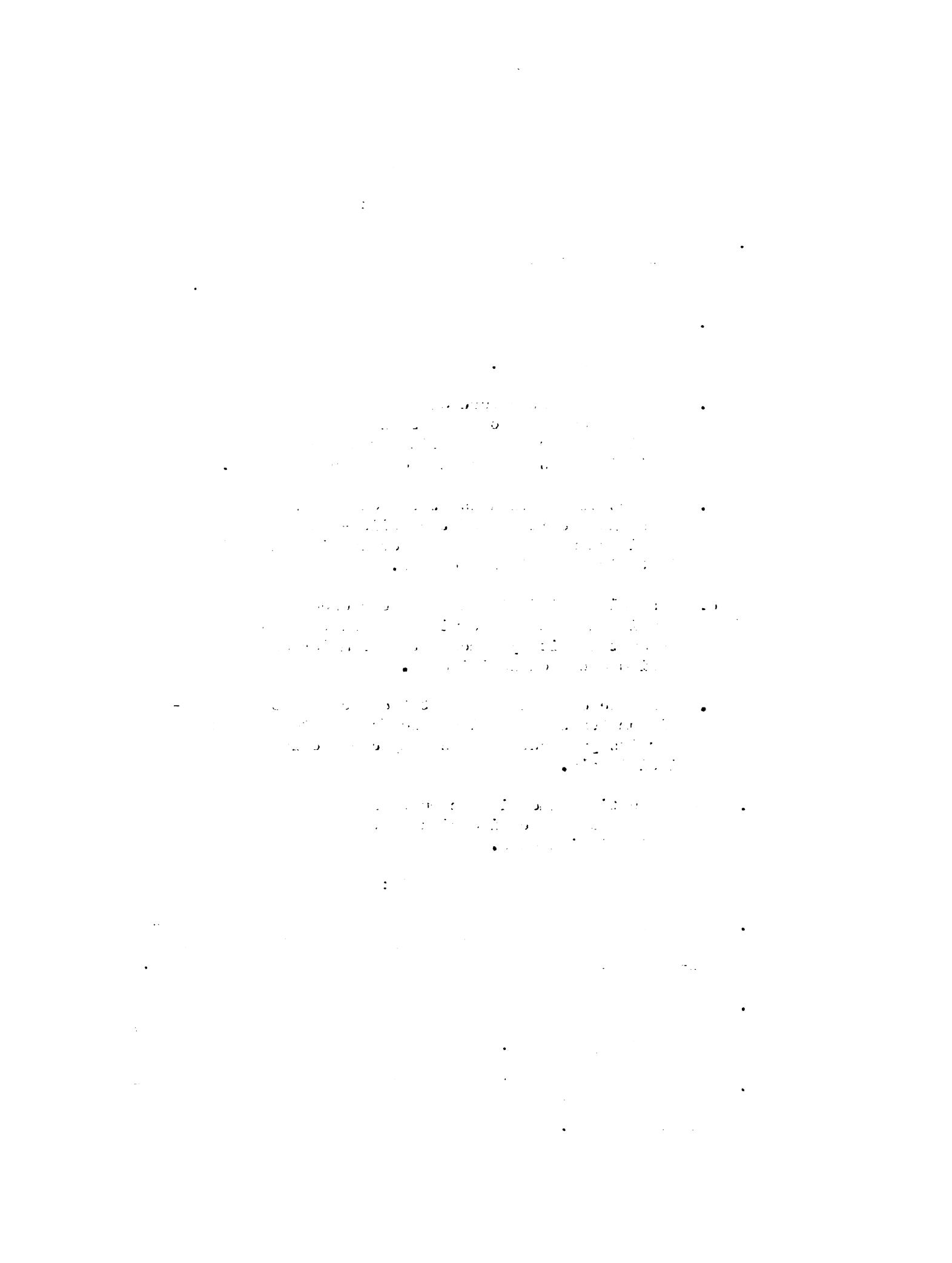
2. The evaluative dimension accounts for more total variance of a sample of closed individuals than samples of open and medium individuals.

With respect to the second hypothesis:

1. In terms of scale position usage a sample of closed individuals tends to respond in terms of more dichotomous, all-nothing, judgments than do open individuals (1 and 7).

2. A sample of open individuals tends to respond in terms of the middle position defined as an indication of ambivalent, conflicting judgments.

3. Samples of open and closed individuals do not differ significantly in their use of more discriminating positions (2, 3, 5 and 6).



In terms of differences in meaning on individual concepts, a comparison of samples of closed and open individuals in their meanings of a concept defined as highly positive and one defined as negative on the evaluative dimension, the closed sample and the open sample differ in their evaluative judgments, with the closed sample tending to make the more extreme judgments on the evaluative dimension but the two types do not differ in judgments on other dimensions.

Implications of the Findings

Recognizing the possible weaknesses of the present investigation,[7] some of which were dealt with below, and given the purpose and nature of factor analysis, the findings have implications for the theoretical framework which underlies this investigation.

Generality of Judgmental Frames

The findings of the present study tend to modify the generality that all individuals regardless of individual characteristic differences use the same basic semantic framework. Studies hypothesizing differences among individuals on the basis of characteristic attributes have found associated differences in meanings for concepts which have become signs under varying conditions of association. In analyzing these scales, the frame within which concepts are judged, a regularity in the ways of using scales has emerged which has led to the statement that these frames pervade all human thinking, that the same sort of

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[7]Including the fact that the results in this study as in other semantic differential factor analytic studies of semantic space are based on collective behavior of a sample of individuals rather than on individual behavior.

judgmental frames are operating in humans, regardless of differences in group attributes (Kumata, 1958, pp. 6-7, 111; Osgood, Suci, and Tannenbaum, 1957, pp. 38, 72-73).

The same or near-same factors keep emerging in repeated studies. These factors have been identified and labelled (Osgood, Suci, and Tannenbaum, 1957, pp. 72-73, 325-326):

1. Evaluative--an attitudinal variable in human thinking, based on a bedrock of rewards and punishments both achieved and anticipated.

2. Potency--concerned with power, and things associated with it like size, weight, toughness, etc.

3. Activity--concerned with quickness, excitement, warmth, agitation.

Since adjective scales used in the present study represent the dimensions found in the Thesaurus study, the use of scales in the present study is fairly comparable to the Thesaurus dimensions which conform to the Evaluation-Potency-Activity (EPA) model above.

The factors associated with individuals at the middle of the belief-disbelief continuum resemble the evaluative, potency, and activity dimensions of the Thesaurus study. Medium individuals used the following Thesaurus scales: evaluative--good, kind, clean, fair, and heavenly; activity--active, fast, hot, complex, and excitable; and potency--heavy, strong, hard, and large.

Individuals at the closed and open ends of the continuum differ in semantic structure from individuals at the middle and also from the EPA model. Except for the evaluative dimension, the closed and open individuals are fairly independent from the model in the use of scales.

For example, the closed and open individuals' second, third and fourth dimensions have been identified and labelled dynamism,

predictability, and sensory-ennui. Closed and open individuals in their dynamism (second) dimension use adjectives which represent potency, activity, novelty, stability, and aggressiveness Thesaurus dimensions.

The dynamism factor of closed and open individuals differs from any factor produced by the middle individuals and also differs from any single dimension in the Thesaurus study. However, previous studies have produced factors identified by the investigators as dynamism. Osgood, Suci, and Tannenbaum (1957, pp. 121-122, 145,172) state that a factor combining activity and potency adjectives and labeled dynamism is associated with political concepts judged.

In Kumata's (1958) bilingual study which used Thesaurus list adjectives, some similar to those used in the present study, the dynamism dimension was defined by adjectives which represented only potency and activity scales.

Closed and open individuals utilize adjectives which represent the following Thesaurus dimensions in their third and fourth factors: third (predictability) dimension--novelty and activity; fourth (sensory-ennui) dimension--aggressiveness, tautness, activity, and receptivity.

The findings in the present study support and extend the generality that all individuals regardless of individual characteristic differences use the same semantic structure to the following extent and in the following manner:

1. Samples of individuals with cognitive structures described as falling in the middle of a belief-disbelief continuum tend to use evaluative, potency, and activity dimensions similar to those observed in the Thesaurus and other factor analytic studies of semantic space.

2. Samples of individuals defined as differing in cognitive structure, described as falling at the ends and

the middle of a belief-disbelief continuum, tend to use a similar evaluative dimension in their semantic structures which is also similar to the evaluative dimension of the Thesaurus and other factor analytic studies.

However, the findings qualify and limit the generality to the following extent and in the following way:

1. Samples of individuals differing in cognitive structure as indexed along a belief-disbelief continuum tend to differ in semantic structure.

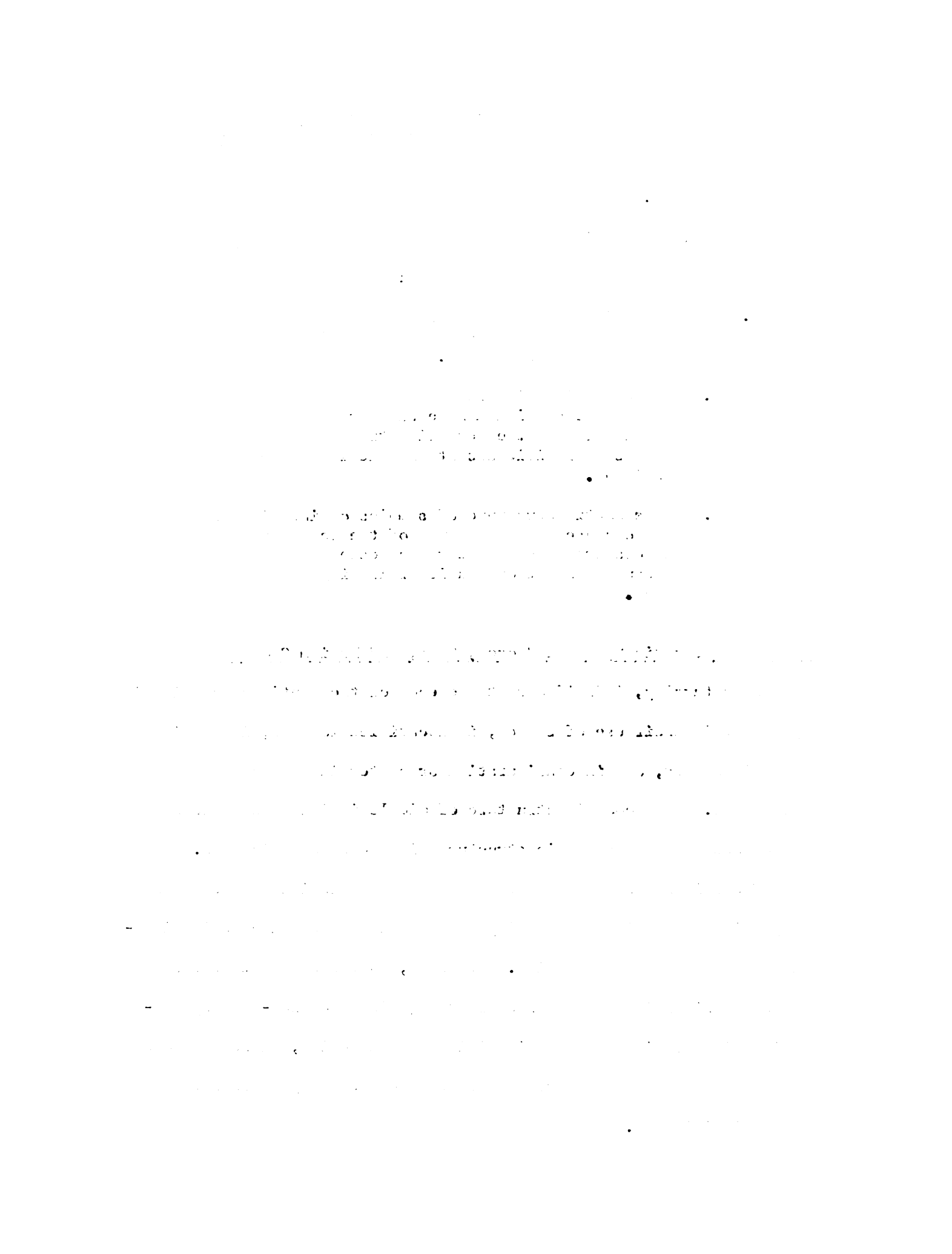
   a. Samples of individuals at the closed and open ends of the continuum have similar structures but differ from the semantic structure of samples of individuals at the middle of the continuum.

   b. The semantic structure of samples of individuals at the closed and open ends of the continuum differs from the structure suggested by the Thesaurus and other studies following the EPA model.

Nature of Semantic Space of Closed, Open, and Medium Groups

Structurally, individuals at the ends of the continuum are in high agreement in their use of scales, in identified factors, in loading on specific scales, and in configuration or patterning of factorial structures. The semantic structure of middle individuals differs from the closed and open semantic structures in the same basic ways.

The evidence suggests that closed and open individuals tend toward complexity or multidimensionality in semantic space while medium individuals tend toward simplicity. At least, to the extent that the number of significant factors extracted (using the Kiel-Wrigley criterion) is a valid index of simplicity or complexity, closed and open individuals tend to use more factors to account for judgments than do medium individuals.



The evaluative, dynamism, predictability, and sensory-ennui dimensionality of this semantic space suggests a judgmental framework concerned with authority in decision making, at least in the area of connotative meaning, for both closed and open individuals.

The evaluative dimension, an attitudinal variable based on a bedrock of rewards and punishments both achieved and anticipated, is assumed to be an index to approach or avoidance tendencies based on reward and punishment aspects of human thinking (Osgood, Suci, and Tannenbaum, 1957, pp. 72-75, 189-199). However, closed and open individuals seem to include elements of power in their evaluative or attitudinal judgments with closed individuals also including an element of stability in their attitudinal judgments.

A concern with more than static strength or power becomes more clear for both types in the dynamism dimension with scales suggesting strength or power combined with scales implying activity, forward movement, aggressiveness, and leadership--a sort of dynamic strength notion.

A third factor suggests a concern with estimating the predictability of a concept. In a fourth factor, identified as sensory-ennui, closed and open individuals indicate the tendency toward judgments in terms of physical senses with resultant overall feelings of interest or boredom.

For closed types, this judgmental framework is consistent with theory which suggests that closed individuals are susceptible to pressures of reward and punishment from external authority and are concerned with the power or ability of authority to mete out rewards and punishments. Closed individuals, motivated by pressures of rewards

and punishments arising from external authority, may assess the authority potential of a concept using the judgmental framework described above. However, the evidence as developed here indicates that since both closed and open individuals utilize similar semantic structures, their orientations toward authority may be highly similar.

The evidence also indicates that given the same basic frames within which closed and open individuals make meaningful judgments, they tend to differ in the outcomes of their specific decisions. For example, closed and open individuals tend to differ in their meanings of the concepts COMMUNIST CHINA and MY MOTHER along the evaluative dimension.

Presumably, there may be overt behaviors associated with such evaluative judgment differences on the semantic differential. One might expect Republican and Democratic voters using similar frames but making different evaluative judgments of candidates and issues in an election also to differ in their overt voting behaviors.

The implications are that closed and open individuals may be structurally similar--at least in the area of connotative meaning--but they may differ in specific decisions made within the same structure.

Structure-Content Distinction. A convenient way of viewing the similarities and differences in closed and open individuals' behavior is suggested by Rokeach who makes a distinction between structure and content when dealing with the properties of belief and disbelief systems.

For example, within the Rokeach conceptualization, a Communist and a Roman Catholic may be highly similar in the ways their beliefs and disbeliefs are organized but may differ drastically in the specific

content of their beliefs.

If both are classified as closed, their judgment of a concept like NIKITA KHRUSHCHEV on the scale good-bad may be expected to be structurally similar in terms of use of similar frames and in the extremeness of responses. But there should be differences in content: the Catholic might be expected to judge the concept as extremely unfavorable (bad) and the Communist to judge it as extremely favorable (good).

Scale Response Behaviors. Closed and open individuals tend to show this kind of structural similarity and content difference in their scale checking behaviors on the Rokeach 40-item scale and the semantic differential. On both instruments, both closed and open subjects choose scale positions which indicate a maximal type of response, yet, the consequences or significance of those responses are different.

In responding to the Rokeach scale, subjects are faced with six choices. They may show their degree of acceptance or rejection of an item by the amount of agreement or disagreement with that item along a six position scale. The choices range from +3 for maximal agreement to -3 for maximal disagreement. Between these maximal positions are choices showing different degrees of rejection or acceptance: +2, +1, -1, and -2. By adding four to each score produces a 7, 6, 5, 3, 2, 1 type of scale.

Within the Rokeach theoretical framework, individuals are placed into closed or open categories on the basis of maximal types of judgments: dichotomous, either-or, maximal accepting or maximal rejecting behaviors operationalized in terms of scores tending toward the +3 (7) or the -3 (1) ends of the scale.

Individuals at the middle of the belief-disbelief continuum possibly may display different patterns of scale checking responses. "Middle" scores might be derived by such patterns of checking as: +1 and/or -1, +3 and -2, or +2 and -3, +3 and -3.

On the semantic differential, the closed subjects tended toward maximal acceptance-rejection, either-or, all-nothing, good-bad types of responses operationalized in terms of 1 and 7 scale positions. Open subjects tended toward the middle (4) position defined as representing judgments of maximal conflict, a "don't know," neutral, or non-committal category--a sort of "it depends" type of response. Closed and open subjects did not differ in their use of 2, 3, 5, and 6 positions which are defined by Osgood et al. as representing more discriminating and finely graded types of judgments.

Developmental Consistencies. Within Osgood's mediation theory, closed and open individuals may have had certain experience consistencies in the socialization process to have developed a number of similar frames for decision making. Yet, within these experiences must have occurred certain idiosyncrasies of individual experience to account for differences between closed and open differences in specific meanings for specific concepts. This follows from our definition of meaning.

The meaning of a sign--the composition of the representational mediation process--is entirely dependent upon the nature of the total behavior occurring while the sign is being established. Given consistencies in human organization quite constant meanings are developed. However, the meanings which different individuals have for the same sign will vary to the extent that their behaviors toward the things signified have varied. The meanings of many signs will reflect the

idiosyncrasies of individual experience.

The material related to the development of closed and open systems, though limited, suggests that along at least one relevant dimension--the number and specificity of influences in childhood--closed and open individuals tend toward maximal types of responses. At one extreme, closed individuals reported highly specific influences by only the local clergyman and/or Boy Scout leader, while at the other extreme, open individuals reported a more generalized influence by a number of persons without specific references to a particular person or group.

Authority Frame of Reference

The basic structural similarities and content differences between closed and open individuals suggested above imply that perhaps the closed-open belief-disbelief continuum method of categorizing individuals provides the observer with a view of different sides of the same coin. It may be that closed and open individuals are both extreme types within a population.

It is as if closed and open individuals share the same basic cognitive map or judgmental frame of reference through which they view the world. The map contains similar relevant frames representing crucial decisions which the individual has learned he must make in a variety of situations. But it is in the outcome of the specific decisions made within the same frames which distinguishes closed from open individuals. It is this difference which the Rokeach scale seems to measure and the basis on which it seems to differentiate among individuals.

On the other hand, the map which medium individuals use may be quite different from that of closed and open individuals and may even suggest that perhaps another type of dimension may be involved.

The frame concerned with authority within this map appears to be highly relevant to closed individuals, as suggested by theory and performance in this study, and also to open individuals, as suggested by the findings. (Another index of its theoretical and empirical importance is the number of statements concerned with authority which are included in the Rokeach 40-item scale--16 items or 40 per cent of the total. Closed individuals are defined as those accepting the statements and open individuals are defined as those rejecting the statements.)

According to the Rokeach theoretical position, all individuals have a pantheon of positive and negative authorities on which they rely for information about the world that they themselves cannot obtain first-hand, but closed and open systems should differ in their theories of the way authorities function in the world. However, the findings suggest that closed and open systems both make relevant judgments within a similar framework--acceptance or rejection of ideas, people, facts, and presumably statements on the Rokeach scale--on the basis of congruity or incongruity with authority. And it may be a difference in the type of authority to which closed and open individuals are oriented that accounts for differential consequences of decisions made within the same judgmental framework. According to the Rokeach conceptualization, closed individuals are external or outside authority oriented tending toward responses indicating maximal acceptance of Rokeach scale items which imply external authority orientation. The closed individual's tendency toward dichotomous, all-nothing, maximal

accepting-rejecting types of responses on the semantic differential also may be related to this external authority orientation. The tendency toward 1 and 7 position responses may indicate an intense set in judgment of concepts, as if the respondent's mind were made up, his opinions already formed, and as if he had taken sides. Accounting for this clarity and decisiveness in judgment may be the individual's willingness to accept or reject on the basis of external authroity who provides his ready-made judgments. There is little ambiguity--outside authority says it is either so or not so, if an item is good or bad, if it requires a 1 or 7 response.

Open individuals tend to show maximal rejection of Rokeach scale items which imply an external authority orientation. It may be that open individuals, though concerned with externally imposed reinforcements or punishments, deal with external authority by challenging or rejecting it and statements attributed to it. This maximal rejection of external authority suggests that the open individual may turn inwardly--relying on himself--with the effect that he is his own principal authority in the pantheon.

In the maintenance of this internal orientation, the open individual may tend toward maximal utilization--perhaps even a preoccupation--of such tools and techniques as the application of logic, knowledge, internal consistency and validity of authority, forensic and other communication devices. Through the use of such cognitive and communication tools, the open individual may challenge or even devastate external authority and maintain self as the principal authority in the pantheon.

In terms of semantic differential behaviors, closed individuals, relying on external authority, come up with clearcut,

dichotomous, unambivalent judgments. Open individuals, rejecting external authority, come up with the opposite type of response--maximal ambivalence, conflict and indecision. It is as if the open individual, turning to the self authority, comes up with the response, "It depends"--on elements not present in the situation or the context of additional cues which the semantic differential situation fails to provide.

It may be that the medium individual, not limited to extreme positions on the Rokeach scale, and displaying a different semantic structure from closed and open individuals, may also display different patterns of responses perhaps even making more discriminating and finely graded judgments on the semantic differential. It might be that the medium individual's approach toward authority is more "rational" in that he may be less susceptible to irrelevant pressures of reward or punishment and may not be committed to maximal rejection or devastation of external authority.

Limitations of the Study

The conclusions based on the evidence as developed in this study and the speculations on the significance of the findings must be weighed in the light of a number of limitations of the study, some of which are stated below.

Distribution of Scores

Extreme Scorers.[8] Limiting the experimental subjects to the extreme ends of the closed-open continuum--the top 20 and the bottom 20

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[8]In the present study, the terms closed, open, and medium refer to the continuum described by Rokeach scale scores peculiar to the experimental group under study.

scorers on the Rokeach scale--might have produced other results. Studies by Rokeach and associates have tended to limit experimental subjects to such extreme ends of the score range.

For example, Rokeach, McGoveny, and Denny (1960, p. 185) from 109 respondents to the Rokeach scale selected the 30 highest (closed) and the 30 lowest (open) individuals for their experimental subjects.

Rokeach and Vidulich (1960, pp. 199-200) selected the 30 highest (closed) and the 30 lowest (open) subjects from 249 respondents to the Rokeach scale for their experimental subjects. Rokeach, Oram, Laffey, and Denny (1960, p. 231) used only the 20 high and 20 low scorers among 600 respondents to the Rokeach scale.

In the present study, the approximate top third and the approximate bottom third of 241 scorers were chosen to represent the closed and open ends of the continuum.

High Scoring Sample. The mean score on the Rokeach 40-item instrument for the total sample of subjects used in this study was higher than that for other experimental groups. This study's sample was more "closed" than other groups. A distribution of scores conforming more closely to that of other less "closed" groups might have produced different results. It may be that the open individuals in the present study are more like the "middle" scoring subjects of other studies tending to respond in terms of +1, -1, or other patterns of responses resulting in "middle" types of scores. This study's closed individuals may tend toward +3 positions and this study's medium individuals may tend toward scores between the +3 and "middle" type of scores.

Results may also have been different if the distribution of

distribution of scores in the present study approached the distribution of scores suggested by an absolute scale with closed tending toward +3, open toward -3 and middle choosing +1 positions.

Scales and Concepts

A high degree of scale-concept interaction has been found in studies using the semantic differential. The investigations cited above suggest also concept-scale-individual characteristic variable interaction (Osgood, Suci, and Tannenbaum, 1957, pp. 66-70, 87-188). Scales and concepts were chosen for this study to increase representativeness rather than scale-concept interaction. Choosing concepts and scales on some other basis may have produced different results. For example, Kumata (1958, p. 25) using bilingual Japanese and Korean students chose people, country, ideological, and nationality concepts for the purpose of differentiating among groups. His scales were selected for the most part from previous factorial studies to adequately represent the "three dominant factors" (evaluation, activity, and potency) and were also selected to be relevant to the types of concepts being measured.

Individual Factor Analyses

With respect to the number of factors required to account for their judgments, a more adequate test of differences between closed and open individuals--and therefore, a more adequate test of simplicity and complexity tendencies reflected in semantic structure--might include factoring scale variables whose scores depend on a single individual rather than a group.

Completing factor analyses of scales for each individual and computing the mean number of factors used to account for judgments across individuals representing each type (closed, open, and medium) would provide a less obscured picture of the number of dimensions required by each type to account for their judgments. In this fashion a distinction is made between factor spaces appropriate to groups and those appropriate to individuals.

The significance of this procedure may be illustrated as follows (Danbury, 1963b):

Condition 1. Given a group of N individuals, each subject using n scales to describe a single concept. A factor analysis of the n scales would produce k common factors. Contributing to the scale variance on which the factors rest are the gross behavior of subjects as a group. The k dimensions relate to a single concept but are produced by the gross behavior of the group. Obscured are the number of factors dependent upon each individual contributing to scale variance. In this case the number of factors is a function of the sample of subjects and the sample of scales. Adding or eliminating a subject or scale might affect the number of factors produced.

Condition 2. Given a group of N individuals, each subject using n scales to describe several concepts. Correlation and factor matrices could be computed by summing across both subjects and concepts.

Although the observations produced by CN observations vary around the grand scale mean, they can also be considered to vary around two other kinds of means: the scale mean where each of the C concepts is held constant; and the scale mean where each of the N subjects is held constant. In the first case, the variation is due to subject

variability, and in the second, it is due to the variability of the response arising from different concept stimuli. In the case of factors arising from CN observations, it is not possible to determine whether the k factors relate to all concepts or to all subjects.

If a group of individuals is tested with a number of concepts, the number of factors is a function of the sample of subjects, the sample of scales and the sample of concepts. Adding or deleting individuals, scales or concepts would influence the number of factors required to account for their judgments. Omitting either some subjects or some concepts might cause a factor to "disappear."

Condition 3. Given one subject using n scales to describe several concepts. The scale variance depends only upon the different responses each concept elicits from the subjects. Factors developed from this score matrix would relate to a single individual and would be produced by his gross reactions to a set of concepts. The number of factors is a function of the number of dimensions the subject uses to describe the concepts.

If he sees all of the concepts as differing only in a single dimension, then a single scale factor will be produced. If he uses different criteria in judging the concepts, k factors will be found. If he uses only a single dimension of judgment and sees all concepts as quite similar, the scale variance will be minimal along with the inter-scale correlations and the proportion of variance explained by the factors.

Factoring scale variables whose scores depend on a single individual, not a group, and determining how many dimensions each individual contributes might reveal differences between closed and open individuals

which conform to the simplicity-complexity tendencies predicted from the Rokeach theory.

Although few factor analytic studies using the semantic differential have made a distinction between factor spaces appropriate to groups and those appropriate to individuals, Osgood, Suci, and Tannenbaum (1957, p. 170) suggest that the most direct test of comparability of the semantic differential across subjects would be to run a series of separate factor analyses on a random sample of individual subjects.

A major criticism of this procedure has been the number of factor analyses which must be completed. However, using 20 highest, 20 lowest, and 20 middle scorers to represent each of the theoretical cognitive structure types, and using modern, high speed digital computers makes this type of procedure feasible.

Suggestions for Further Research

Theoretical and methodological issues raised within the context of the present investigation suggest areas for further research.

Dimensionality of Semantic Space

It was hypothesized that closed individuals would tend toward simplicity and open systems toward multidimensionality in semantic space. The findings indicate that medium indiviudals tend toward simplicity and that closed and open individuals tend toward multi-dimensionality. Since the findings in this study depended on group data, this hypothesis might be retested using scale variables whose scores depend on single individuals. These might be factored to determine how many dimensions each individual contributes.

Scale Checking Tendencies

The scale checking patterns on the Rokeach instrument appear to be reflected in the scale checking patterns on the semantic differential. Just how generalized is the tendency for marking polar, middle, or more intermediate positions is a question for further research.

The choices provided by both instruments are similar except that the Rokeach scale omits the middle "0" or what is a "4" position on the semantic differential.

In this study, on the semantic differential, closed systems tended toward polar positions while open individuals tended toward middle position responses. On the Rokeach instrument, since the total group tended to be high scorers--relatively closed--compared with other experimental groups, the possibility has been raised that this study's open group might compare with "middle" scorers of other studies where the sample was less "closed."

It might be that more "open" subjects (-3 scorers) would also tend toward polar (1 and 7) responses on the semantic differential. In other words, the polar (+3 and -3) responses of both closed and open individuals on the Rokeach scale might be reflected in polar (1 and 7) responses on the semantic differential. Of the middle Rokeach scale scorers, those who tend toward +1 or -1 also might tend toward "4" position responses. And it may be that individuals tending to score +1 and -1 on the Rokeach scale might tend toward 2 and 6 positions on the semantic differential.

Attitude Change

Within the Rokeach conceptualization, all individuals have a pantheon of positive and negative authorities on which they rely for

information about the world they themselves cannot obtain first hand--or to get verification of information already possessed. Since the findings suggest that both closed and open individuals tend to rely on authority in decision making, it may be that in a congruity principle situation the authority judgmental framework may be highly relevant in determining amount and direction of attitude change. Since positive authorities guide the individual in what is true in the world and negative authorities in what is false, it may be that closed and open individuals make distinctions in terms of positive and negative authority and non-authority potential of persons and concepts.

This might be represented in semantic differential responses in such terms as:

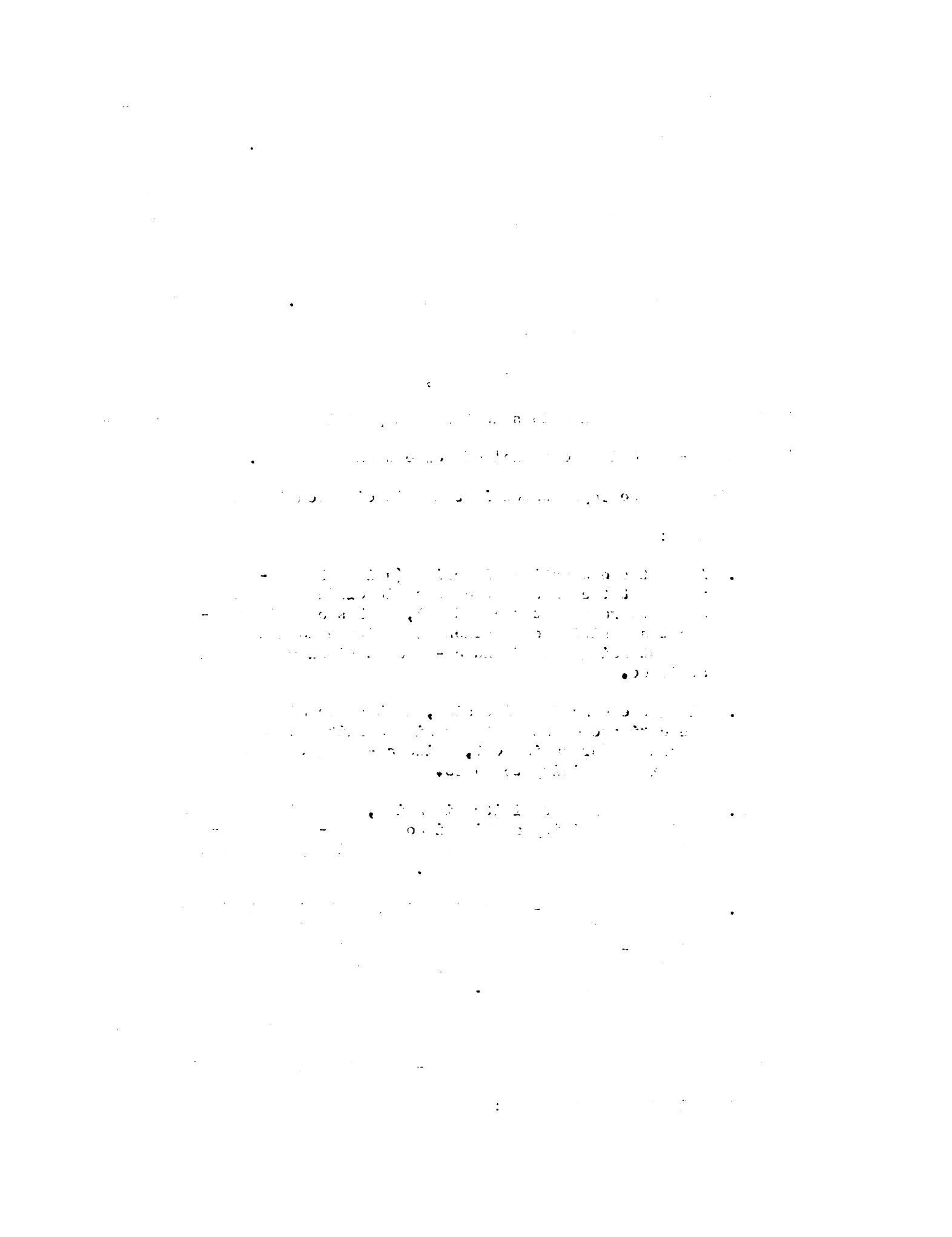
1. Along the evaluative dimension (using +3 and -3 to represent the ends of the semantic differential scale and 0 to represent the middle), a +3 score might reflect a positive evaluation or attitude toward the concept being judged and a -3 would signify a negative attitude.

2. Along the dynamism dimension, a +3 score might represent the estimate of strength or high ability to mete out reward and/or punishment, while a -3 might suggest relative inability to do so.

3. Along the predictability dimension, a +3 might suggest a high probability or likelihood and a -3 low probability that the concept or person being judged will mete out reward or punishment.

4. Along the sensory-ennui dimension, a +3 might indicate an expectation of pleasant feelings and high interest while a -3 might indicate an expectation of unpleasant feelings and boredom of an encounter with the person or concept being judged.

Limiting the example only to extreme scores and three dimensions, positive and negative authority or non-authority might be defined operationally in such terms as:



1. A person or concept is judged as high positive authority if a subject scores +3 on each of the three dimensions.

2. A person or concept is judged as high negative authority if the subject scores -3 on the evaluative dimension and +3 on dynamism and predictability.

3. Positive non-authority is defined as a +3 score on the evaluative dimension and a -3 on dynamism and predictability.

4. Negative non-authority is a -3 score on the evaluative dimension, and -3 scores on dynamism and predictability.

Whether a concept is defined as positive or negative authority or non-authority may be relevant in the attitude change situation to individuals categorized along the closed-open continuum. It is another area that might be explored in future research.

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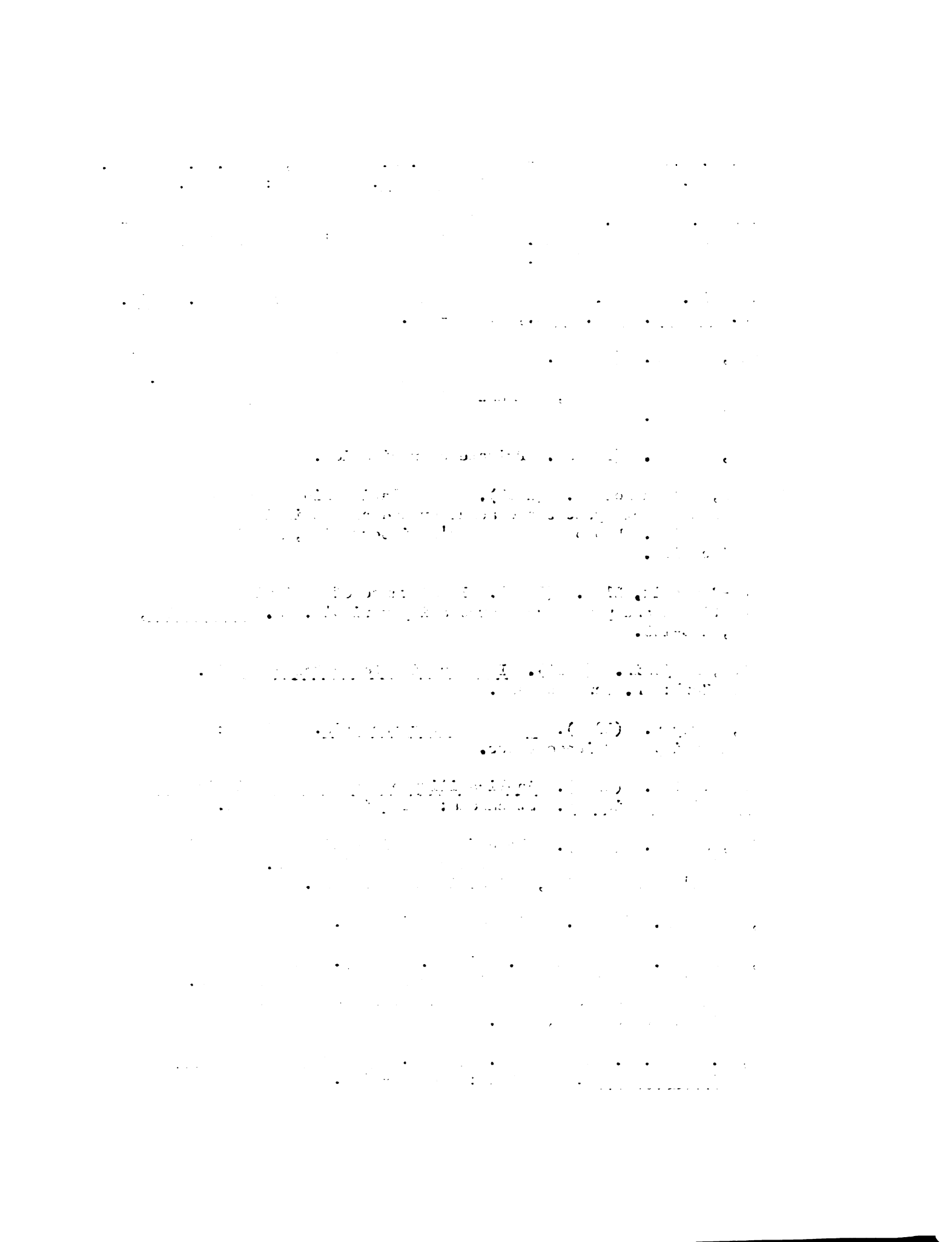

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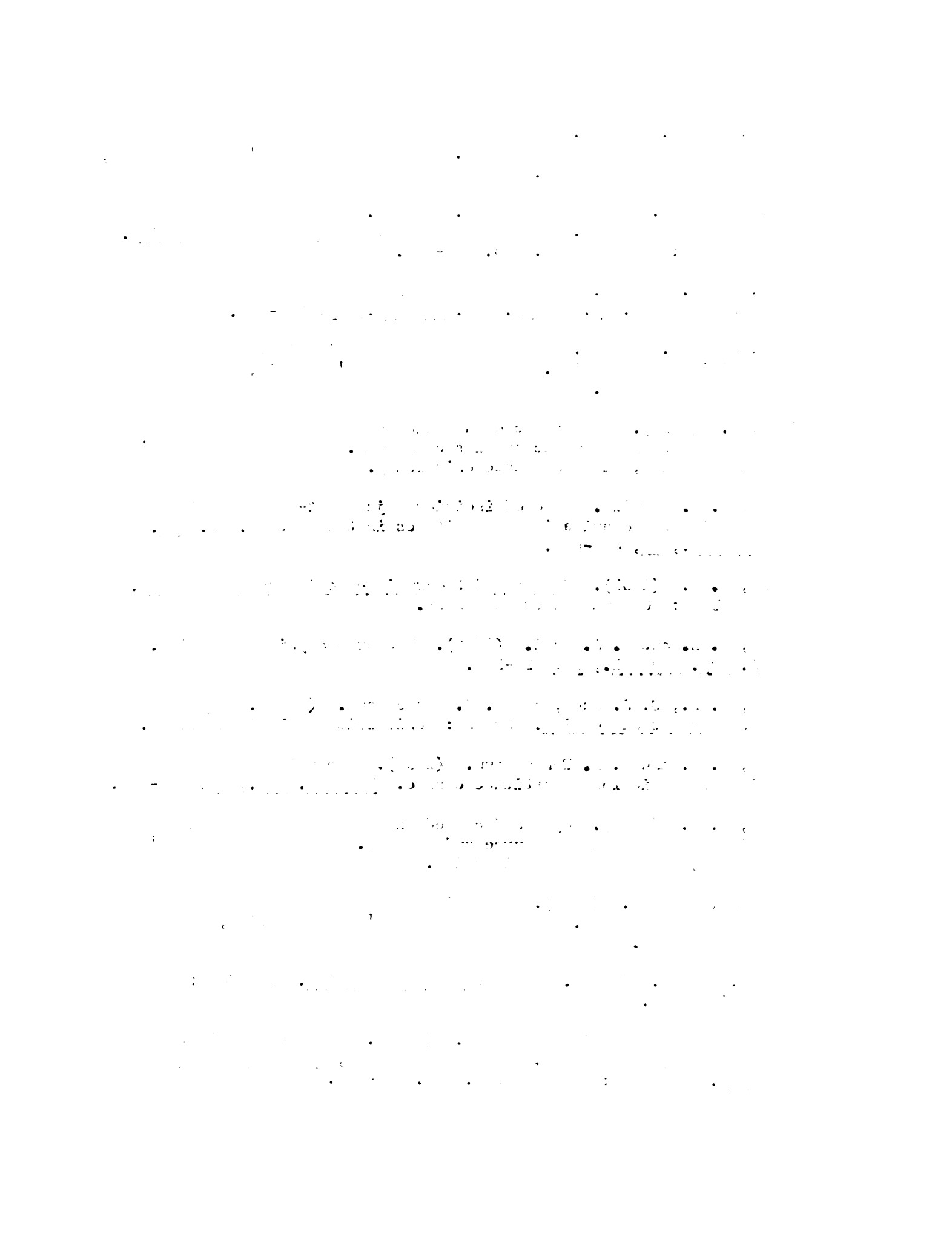

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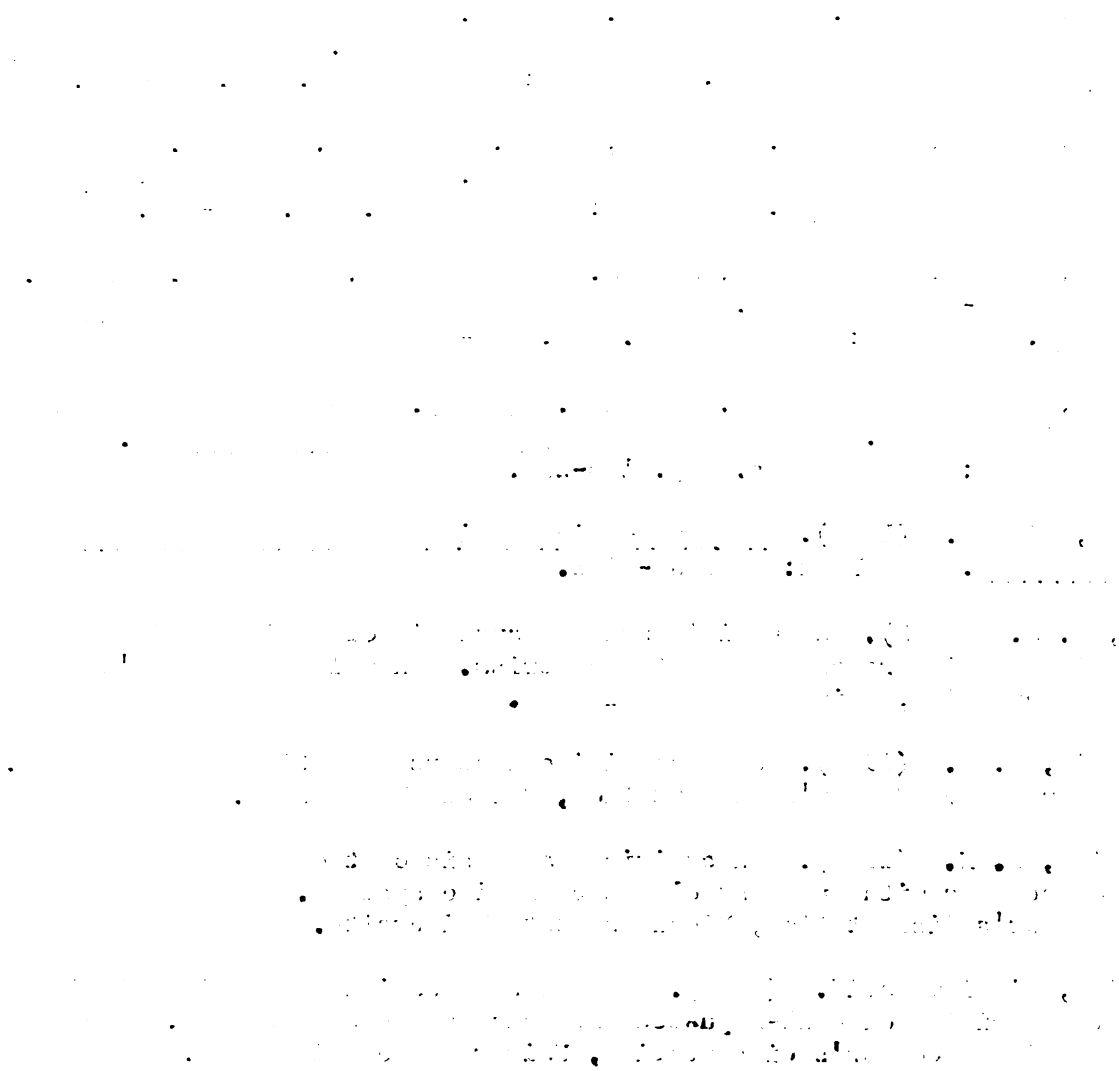


APPENDICES

APPENDIX A

Test booklets.

PUBLIC OPINION PROBLEM

Department of Communication
Michigan State University
East Lansing, Michigan

INSTRUCTIONS

This problem is part of a study of what different people think and feel about some important topics they often talk about.

The best answer to each statement below is your own personal feeling. We have tried to cover many different and opposing points of view. You may find yourself agreeing strongly with some of the statements and disagreeing just as strongly with others. Perhaps you will feel uncerta in about others.

Whether you agree or disagree with any statement, you can be sure that many people feel the same way as you do.

Here's what to do. In the line at the left of each statement, write how much you agree or disagree with it. Please mark every statement.

Write +1, +2, +3, or -1, -2, -3 depending on how you feel in each case. Here's what these numbers mean:

+1 I AGREE A LITTLE	-1 I DISAGREE A LITTLE
+2 I AGREE ON THE WHOLE	-2 I DISAGREE ON THE WHOLE
+3 I AGREE VERY MUCH	-3 I DISAGREE VERY MUCH

For example, if the statement reads:

"Most people are failures and it is the system which is responsible for this," and if you feel that you AGREE ON THE WHOLE with the statement, you would mark the statement +2 in the space at the left of it.

Work fairly rapidly, since it is your first impression that is the best answer. On the other hand, work carefully since it is your own personal opinions that are important.

NOW, PLEASE TURN THE PAGE AND MARK EACH STATEMENT ON THE BASIS OF HOW MUCH YOU PERSONALLY AGREE OR DISAGREE WITH THE STATEMENT.

Key

+1:	I AGREE A LITTLE	-1:	I DISAGREE A LITTLE
+2:	I AGREE ON THE WHOLE	-2:	I DISAGREE ON THE WHOLE
+3:	I AGREE VERY MUCH	-3:	I DISAGREE VERY MUCH

- - - -

Key

+1:	I AGREE A LITTLE	-1:	I DISAGREE A LITTLE
+2:	I AGREE ON THE WHOLE	-2:	I DISAGREE ON THE WHOLE
+3:	I AGREE VERY MUCH	-3:	I DISAGREE VERY MUCH

_____ 20. In times like these, a person must be pretty selfish if he considers primarily his own happiness.

_____ 21. In the history of mankind there have probably been just a handful of really great thinkers.

_____ 22. There are a number of people I have come to hate because of the things they stand for.

_____ 23. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, Beethoven, or Shakespeare.

_____ 24. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.

_____ 25. Even though freedom of speech is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.

_____ 26. To compromise with our political opponents is dangerous because it usually leads to betrayal of our own side.

_____ 27. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.

_____ 28. Of all the different philosophies which exist in this world there is probably only one which is correct.

_____ 29. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

_____ 30. The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.

_____ 31. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.

_____ 32. There are two kinds of people in this world: those who are for the truth and those who are against the truth.

_____ 33. The present is all too often full of unhappiness. It is only the future that counts.

_____ 34. My blood boils whenever a person stubbornly refuses to admit he's wrong.

_____ 35. If a man is to accomplish his mission in life it is necessary to gamble "all or nothing at all."

(TURN PAGE AND CONTINUE)

Key

+1:	I AGREE A LITTLE	-1:	I DISAGREE A LITTLE
+2:	I AGREE ON THE WHOLE	-2:	I DISAGREE ON THE WHOLE
+3:	I AGREE VERY MUCH	-3:	I DISAGREE VERY MUCH

- - - -

INSTRUCTIONS.

The purpose of this part of the study is to measure the meanings various people have for different things.

1. At the top of each page in this booklet you will find a word written in capital letters. It represents a concept or thing you are to judge. Read the concept then rate it against a series of scales which appear beneath it.

2. A scale looks like this:

fair___: ___: ___: ___: ___: ___: ___: unfair

3. Be sure you make your judgments on the basis of what the word means to you.

4. Here is how to use the scales:

a. If you feel that the word at the top of the page is very closely related to one end of the scale, you should place your check-mark like this:

fair _X_: ____: ____: ____: ____: ____: ____: unfair

OR

fair ____: ____: ____: ____: ____: ____: _X_: unfair

b. If you feel that the word is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark like this:

strong ____: _X_: ____: ____: ____: ____: ____: weak

OR

strong ____: ____: ____: ____: ____: _X_: ____: weak

c. If the word seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check like this:

active ___: ___: _X_: ___: ___: ___: ___: passive

OR

active ___: ___: ___: ___: _X_: ___: ___: passive

d. The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

e. If you consider the word to be neutral on the scale, both sides of the scale equally associated with the word, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

safe ____: ____: ____: __X__: ____: ____: ____: dangerous

f. IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

			THIS		NOT THIS	
____:	____:	____:	__X__:	____:	____:X____:	

(2) Be sure you check every scale for every concept. Do not omit any.

(3) Never put more than one check-mark on a single scale.

5. Sometimes you may feel as though you've had the same item before on the test. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the test. Make each item a separate and independent judgment.

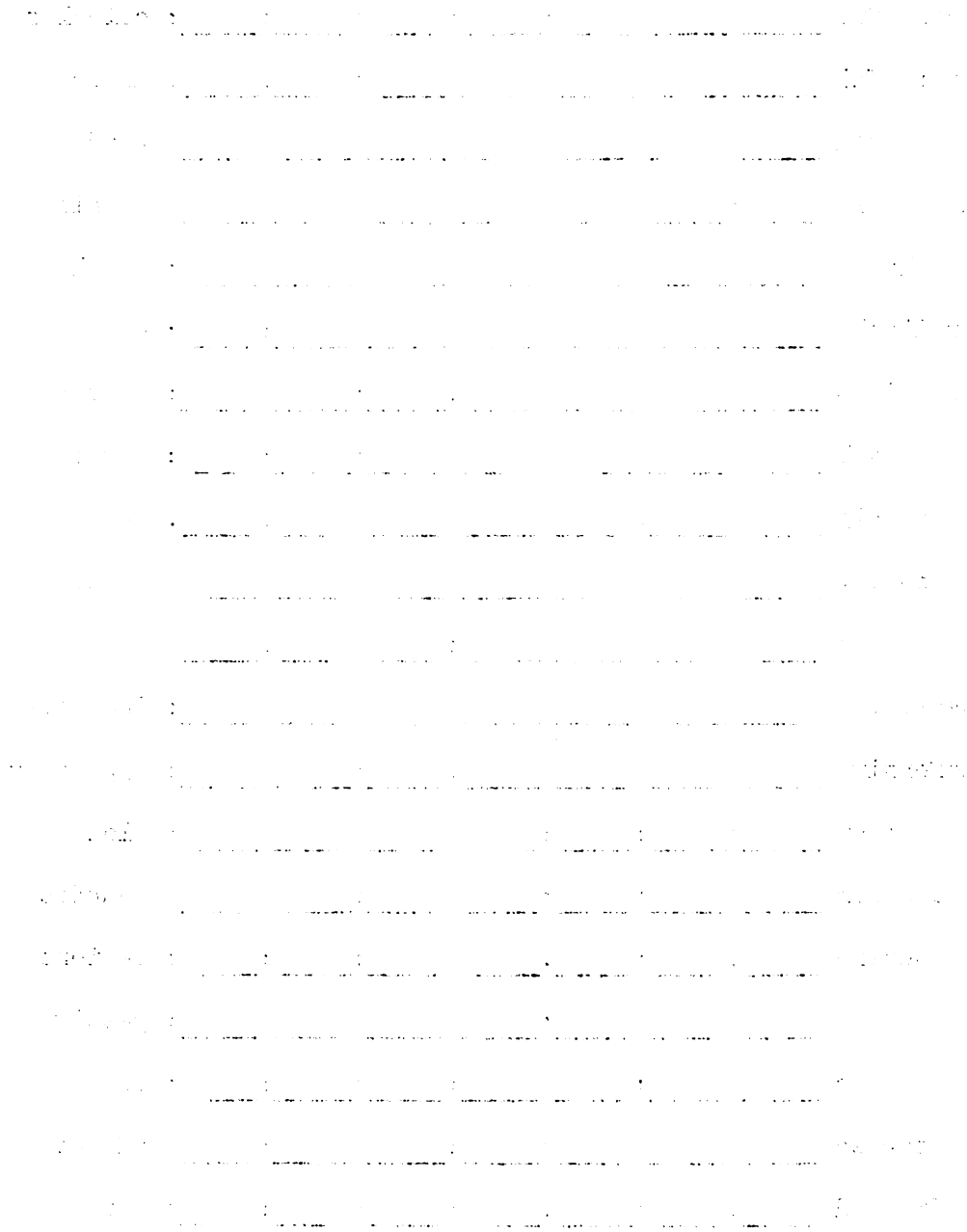
6. Work at high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

(PLEASE TURN PAGE AND BEGIN)

ENGINE

colorful	____	____	____	____	____	____	____	colorless
youthful	____	____	____	____	____	____	____	mature
bad	____	____	____	____	____	____	____	good
changeable	____	____	____	____	____	____	____	stable
large	____	____	____	____	____	____	____	small
excitable	____	____	____	____	____	____	____	calm
straight	____	____	____	____	____	____	____	curved
disloyal	____	____	____	____	____	____	____	loyal
heavenly	____	____	____	____	____	____	____	hellish
unusual	____	____	____	____	____	____	____	usual
weak	____	____	____	____	____	____	____	strong
sensitive	____	____	____	____	____	____	____	insensitive
defensive	____	____	____	____	____	____	____	aggressive
fast	____	____	____	____	____	____	____	slow
angular	____	____	____	____	____	____	____	rounded
severe	____	____	____	____	____	____	____	lenient
active	____	____	____	____	____	____	____	passive
sober	____	____	____	____	____	____	____	drunk
retarded	____	____	____	____	____	____	____	advanced
refreshed	____	____	____	____	____	____	____	weary

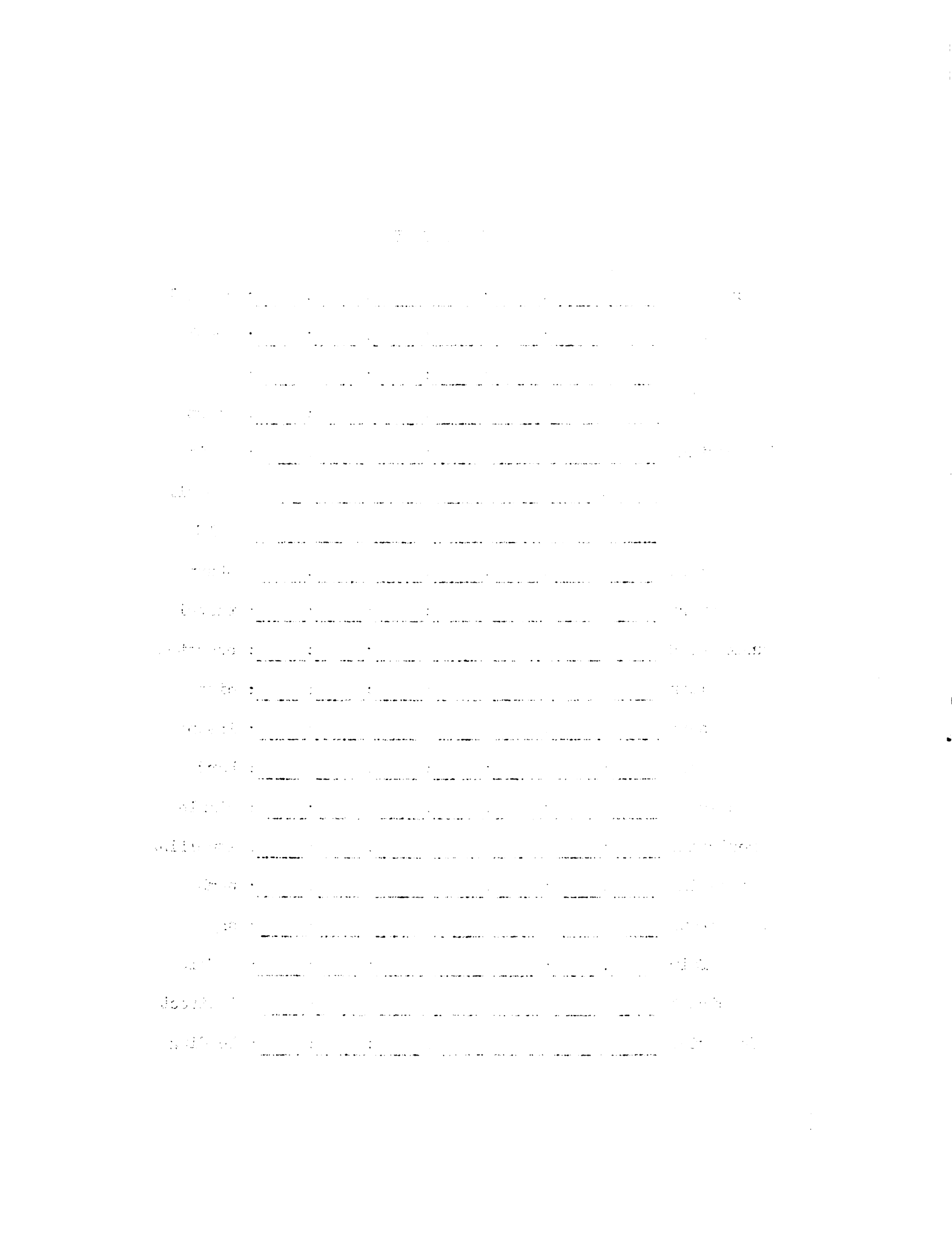
(SA-1)



NIKITA KHRUSHCHEV

careless	_____	_____	_____	_____	_____	_____	_____	careful
kind	_____	_____	_____	_____	_____	_____	_____	cruel
old	_____	_____	_____	_____	_____	_____	_____	new
heavy	_____	_____	_____	_____	_____	_____	_____	light
interesting	_____	_____	_____	_____	_____	_____	_____	boring
drawn	_____	_____	_____	_____	_____	_____	_____	propelled
hot	_____	_____	_____	_____	_____	_____	_____	cold
blunt	_____	_____	_____	_____	_____	_____	_____	sharp
savory	_____	_____	_____	_____	_____	_____	_____	tasteless
unexpected	_____	_____	_____	_____	_____	_____	_____	expected
clean	_____	_____	_____	_____	_____	_____	_____	dirty
sane	_____	_____	_____	_____	_____	_____	_____	insane
soft	_____	_____	_____	_____	_____	_____	_____	hard
complex	_____	_____	_____	_____	_____	_____	_____	simple
resisting	_____	_____	_____	_____	_____	_____	_____	impelling
tingling	_____	_____	_____	_____	_____	_____	_____	numb
boisterous	_____	_____	_____	_____	_____	_____	_____	shy
fair	_____	_____	_____	_____	_____	_____	_____	unfair
direct	_____	_____	_____	_____	_____	_____	_____	indirect
following	_____	_____	_____	_____	_____	_____	_____	leading

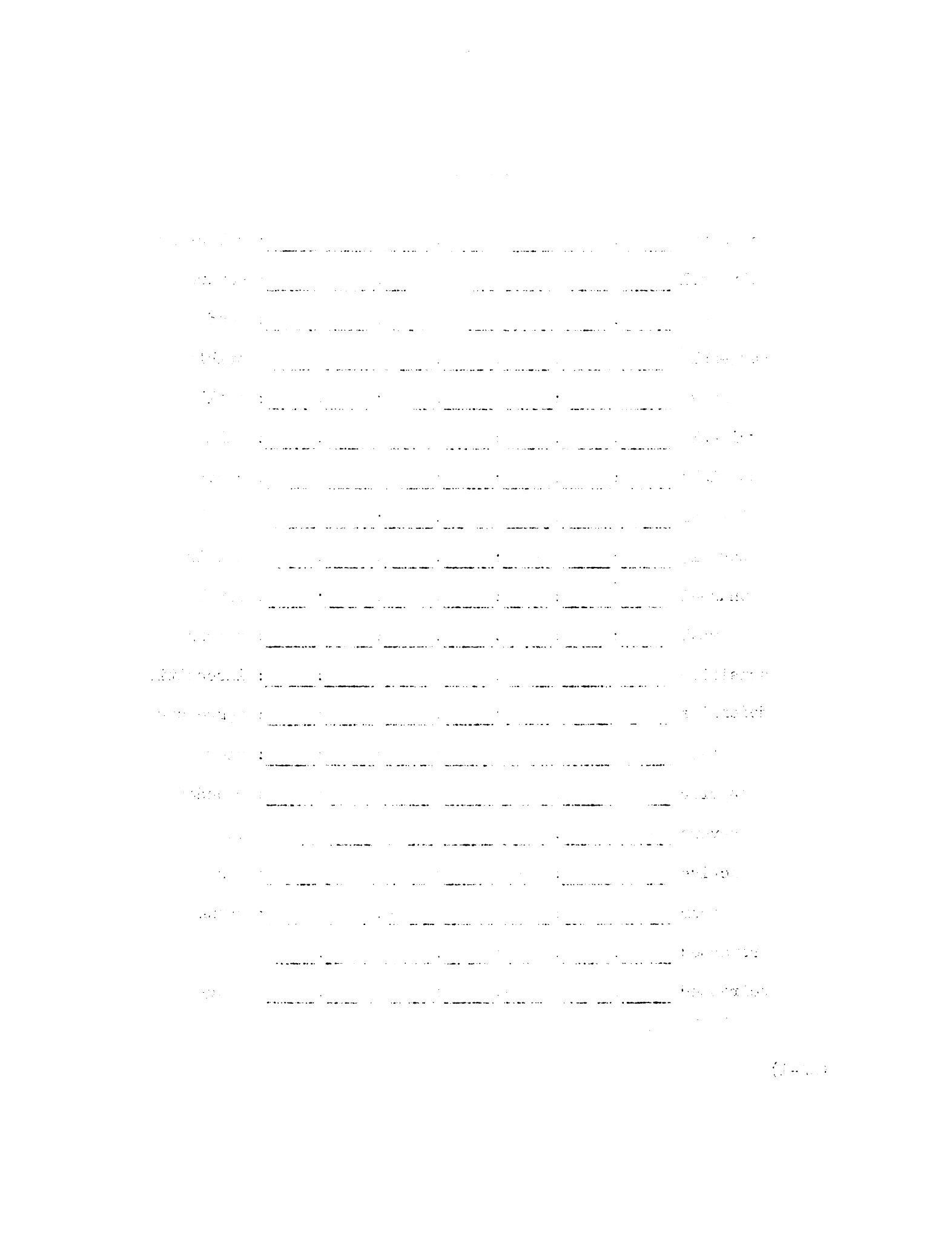
(SB-1)



LEADERSHIP

colorful	_____:_____:_____:_____:_____:_____:_____:	colorless
youthful	_____:_____:_____:_____:_____:_____:_____:	mature
bad	_____:_____:_____:_____:_____:_____:_____:	good
changeable	_____:_____:_____:_____:_____:_____:_____:	stable
large	_____:_____:_____:_____:_____:_____:_____:	small
excitable	_____:_____:_____:_____:_____:_____:_____:	calm
straight	_____:_____:_____:_____:_____:_____:_____:	curved
disloyal	_____:_____:_____:_____:_____:_____:_____:	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____:	hellish
unusual	_____:_____:_____:_____:_____:_____:_____:	usual
weak	_____:_____:_____:_____:_____:_____:_____:	strong
sensitive	_____:_____:_____:_____:_____:_____:_____:	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____:	aggressive
fast	_____:_____:_____:_____:_____:_____:_____:	slow
angular	_____:_____:_____:_____:_____:_____:_____:	rounded
severe	_____:_____:_____:_____:_____:_____:_____:	lenient
active	_____:_____:_____:_____:_____:_____:_____:	passive
sober	_____:_____:_____:_____:_____:_____:_____:	drunk
retarded	_____:_____:_____:_____:_____:_____:_____:	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____:	weary

(SA-1)



MODERN ART

careless	_____:_____:_____:_____:_____:_____:_____:	careful
kind	_____:_____:_____:_____:_____:_____:_____:	cruel
old	_____:_____:_____:_____:_____:_____:_____:	new
heavy	_____:_____:_____:_____:_____:_____:_____:	light
interesting	_____:_____:_____:_____:_____:_____:_____:	boring
drawn	_____:_____:_____:_____:_____:_____:_____:	propelled
hot	_____:_____:_____:_____:_____:_____:_____:	cold
blunt	_____:_____:_____:_____:_____:_____:_____:	sharp
savory	_____:_____:_____:_____:_____:_____:_____:	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____:	expected
clean	_____:_____:_____:_____:_____:_____:_____:	dirty
sane	_____:_____:_____:_____:_____:_____:_____:	insane
soft	_____:_____:_____:_____:_____:_____:_____:	hard
complex	_____:_____:_____:_____:_____:_____:_____:	simple
resisting	_____:_____:_____:_____:_____:_____:_____:	impelling
tingling	_____:_____:_____:_____:_____:_____:_____:	numb
fair	_____:_____:_____:_____:_____:_____:_____:	unfair
direct	_____:_____:_____:_____:_____:_____:_____:	indirect
following	_____:_____:_____:_____:_____:_____:_____:	leading

(SB-1)

HOSPITAL

careless	: : : : : : :	careful
kind	: : : : : : :	cruel
old	: : : : : : :	new
heavy	: : : : : : :	light
interesting	: : : : : : :	boring
drawn	: : : : : : :	propelled
hot	: : : : : : :	cold
blunt	: : : : : : :	sharp
savory	: : : : : : :	tasteless
unexpected	: : : : : : :	expected
clean	: : : : : : :	dirty
sane	: : : : : : :	insane
soft	: : : : : : :	hard
complex	: : : : : : :	simple
resisting	: : : : : : :	impelling
tingling	: : : : : : :	numb
boisterous	: : : : : : :	shy
fair	: : : : : : :	unfair
direct	: : : : : : :	indirect
following	: : : : : : :	leading

(SB-1)

PRISON

careless	_____:_____:_____:_____:_____:_____:_____:	careful
kind	_____:_____:_____:_____:_____:_____:_____:	cruel
old	_____:_____:_____:_____:_____:_____:_____:	new
heavy	_____:_____:_____:_____:_____:_____:_____:	light
interesting	_____:_____:_____:_____:_____:_____:_____:	boring
drawn	_____:_____:_____:_____:_____:_____:_____:	propelled
hot	_____:_____:_____:_____:_____:_____:_____:	cold
blunt	_____:_____:_____:_____:_____:_____:_____:	sharp
savory	_____:_____:_____:_____:_____:_____:_____:	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____:	expected
clean	_____:_____:_____:_____:_____:_____:_____:	dirty
sane	_____:_____:_____:_____:_____:_____:_____:	insane
soft	_____:_____:_____:_____:_____:_____:_____:	hard
complex	_____:_____:_____:_____:_____:_____:_____:	simple
resisting	_____:_____:_____:_____:_____:_____:_____:	impelling
tingling	_____:_____:_____:_____:_____:_____:_____:	numb
boisterous	_____:_____:_____:_____:_____:_____:_____:	shy
fair	_____:_____:_____:_____:_____:_____:_____:	unfair
direct	_____:_____:_____:_____:_____:_____:_____:	indirect
following	_____:_____:_____:_____:_____:_____:_____:	leading

JOHN F. KENNEDY

colorful	____:	____:	____:	____:	____:	____:	____:	colorless
youthful	____:	____:	____:	____:	____:	____:	____:	mature
bad	____:	____:	____:	____:	____:	____:	____:	good
changeable	____:	____:	____:	____:	____:	____:	____:	stable
large	____:	____:	____:	____:	____:	____:	____:	small
excitable	____:	____:	____:	____:	____:	____:	____:	calm
straight	____:	____:	____:	____:	____:	____:	____:	curved
disloyal	____:	____:	____:	____:	____:	____:	____:	loyal
heavenly	____:	____:	____:	____:	____:	____:	____:	hellish
unusual	____:	____:	____:	____:	____:	____:	____:	usual
weak	____:	____:	____:	____:	____:	____:	____:	strong
sensitive	____:	____:	____:	____:	____:	____:	____:	insensitive
defensive	____:	____:	____:	____:	____:	____:	____:	aggressive
fast	____:	____:	____:	____:	____:	____:	____:	slow
angular	____:	____:	____:	____:	____:	____:	____:	rounded
severe	____:	____:	____:	____:	____:	____:	____:	lenient
active	____:	____:	____:	____:	____:	____:	____:	passive
sober	____:	____:	____:	____:	____:	____:	____:	drunk
retarded	____:	____:	____:	____:	____:	____:	____:	advanced
refreshed	____:	____:	____:	____:	____:	____:	____:	weary

(SA-1)

SYMPHONY

careless	_____:_____:_____:_____:_____:_____:_____:	careful
kind	_____:_____:_____:_____:_____:_____:_____:	cruel
old	_____:_____:_____:_____:_____:_____:_____:	new
interesting	_____:_____:_____:_____:_____:_____:_____:	boring
drawn	_____:_____:_____:_____:_____:_____:_____:	propelled
hot	_____:_____:_____:_____:_____:_____:_____:	cold
blunt	_____:_____:_____:_____:_____:_____:_____:	sharp
savory	_____:_____:_____:_____:_____:_____:_____:	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____:	expected
clean	_____:_____:_____:_____:_____:_____:_____:	dirty
sane	_____:_____:_____:_____:_____:_____:_____:	insane
soft	_____:_____:_____:_____:_____:_____:_____:	hard
complex	_____:_____:_____:_____:_____:_____:_____:	simple
resisting	_____:_____:_____:_____:_____:_____:_____:	impelling
tingling	_____:_____:_____:_____:_____:_____:_____:	numb
boisterous	_____:_____:_____:_____:_____:_____:_____:	shy
fair	_____:_____:_____:_____:_____:_____:_____:	unfair
direct	_____:_____:_____:_____:_____:_____:_____:	indirect
following	_____:_____:_____:_____:_____:_____:_____:	leading

(SD-1)

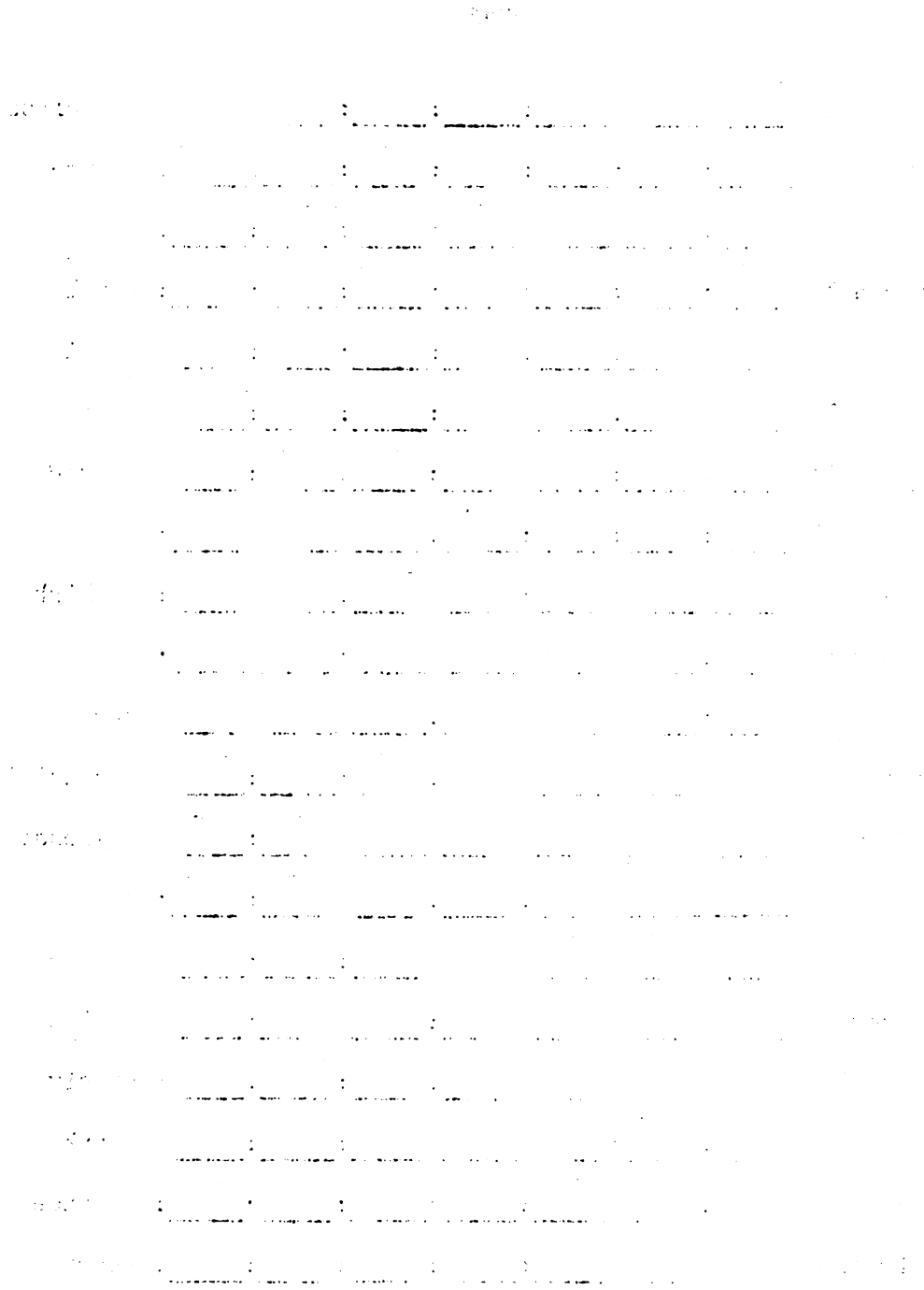
DEATH

careless	____	____	____	____	____	____	____	careful
kind	____	____	____	____	____	____	____	cruel
old	____	____	____	____	____	____	____	new
heavy	____	____	____	____	____	____	____	light
interesting	____	____	____	____	____	____	____	boring
drawn	____	____	____	____	____	____	____	propelled
hot	____	____	____	____	____	____	____	cold
blunt	____	____	____	____	____	____	____	sharp
savory	____	____	____	____	____	____	____	tasteless
unexpected	____	____	____	____	____	____	____	expected
clean	____	____	____	____	____	____	____	dirty
sane	____	____	____	____	____	____	____	insane
soft	____	____	____	____	____	____	____	hard
complex	____	____	____	____	____	____	____	simple
resisting	____	____	____	____	____	____	____	impelling
tingling	____	____	____	____	____	____	____	numb
boisterous	____	____	____	____	____	____	____	shy
fair	____	____	____	____	____	____	____	unfair
direct	____	____	____	____	____	____	____	indirect
following	____	____	____	____	____	____	____	leading

SNOW

colorful	____	____	____	____	____	____	____	colorless
youthful	____	____	____	____	____	____	____	mature
bad	____	____	____	____	____	____	____	good
changeable	____	____	____	____	____	____	____	stable
large	____	____	____	____	____	____	____	small
excitable	____	____	____	____	____	____	____	calm
straight	____	____	____	____	____	____	____	curved
disloyal	____	____	____	____	____	____	____	loyal
heavenly	____	____	____	____	____	____	____	hellish
unusual	____	____	____	____	____	____	____	usual
weak	____	____	____	____	____	____	____	strong
sensitive	____	____	____	____	____	____	____	insensitive
defensive	____	____	____	____	____	____	____	aggressive
fast	____	____	____	____	____	____	____	slow
angular	____	____	____	____	____	____	____	rounded
severe	____	____	____	____	____	____	____	lenient
active	____	____	____	____	____	____	____	passive
sober	____	____	____	____	____	____	____	drunk
retarded	____	____	____	____	____	____	____	advanced
refreshed	____	____	____	____	____	____	____	weary

(SA-1)



COMMUNIST CHINA

careless ____:____:____:____:____:____:____: careful

kind ____:____:____:____:____:____:____: cruel

old ____:____:____:____:____:____:____: new

heavy ____:____:____:____:____:____:____: light

interesting ____:____:____:____:____:____:____: boring

drawn ____:____:____:____:____:____:____: propelled

hot ____:____:____:____:____:____:____: cold

blunt ____:____:____:____:____:____:____: sharp

savory ____:____:____:____:____:____:____: tasteless

unexpected ____:____:____:____:____:____:____: expected

clean ____:____:____:____:____:____:____: dirty

sane ____:____:____:____:____:____:____: insane

soft ____:____:____:____:____:____:____: hard

complex ____:____:____:____:____:____:____: simple

resisting ____:____:____:____:____:____:____: impelling

tingling ____:____:____:____:____:____:____: numb

boisterous ____:____:____:____:____:____:____: shy

fair ____:____:____:____:____:____:____: unfair

direct ____:____:____:____:____:____:____: indirect

following ____:____:____:____:____:____:____: leading

BIRTH

colorful	_____:_____:_____:_____:_____:_____:_____:	colorless
youthful	_____:_____:_____:_____:_____:_____:_____:	mature
bad	_____:_____:_____:_____:_____:_____:_____:	good
changeable	_____:_____:_____:_____:_____:_____:_____:	stable
large	_____:_____:_____:_____:_____:_____:_____:	small
excitable	_____:_____:_____:_____:_____:_____:_____:	calm
straight	_____:_____:_____:_____:_____:_____:_____:	curved
disloyal	_____:_____:_____:_____:_____:_____:_____:	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____:	hellish
unusual	_____:_____:_____:_____:_____:_____:_____:	usual
weak	_____:_____:_____:_____:_____:_____:_____:	strong
sensitive	_____:_____:_____:_____:_____:_____:_____:	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____:	aggressive
fast	_____:_____:_____:_____:_____:_____:_____:	slow
angular	_____:_____:_____:_____:_____:_____:_____:	rounded
severe	_____:_____:_____:_____:_____:_____:_____:	lenient
active	_____:_____:_____:_____:_____:_____:_____:	passive
sober	_____:_____:_____:_____:_____:_____:_____:	drunk
retarded	_____:_____:_____:_____:_____:_____:_____:	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____:	weary

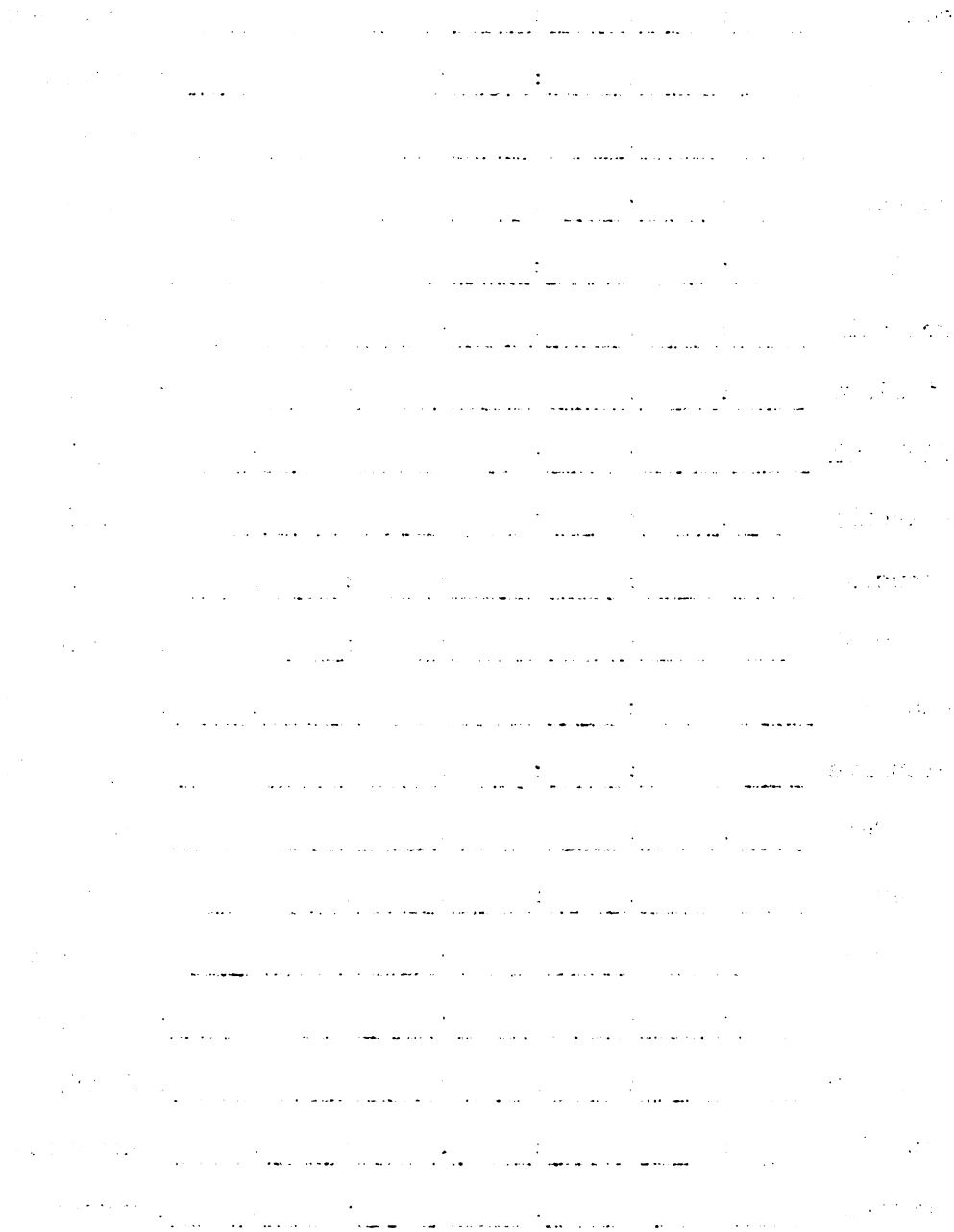
(SA-1)

SIN

careless	_____:_____:_____:_____:_____:_____:_____:	careful
kind	_____:_____:_____:_____:_____:_____:_____:	cruel
old	_____:_____:_____:_____:_____:_____:_____:	new
heavy	_____:_____:_____:_____:_____:_____:_____:	light
interesting	_____:_____:_____:_____:_____:_____:_____:	boring
drawn	_____:_____:_____:_____:_____:_____:_____:	propelled
hot	_____:_____:_____:_____:_____:_____:_____:	cold
blunt	_____:_____:_____:_____:_____:_____:_____:	sharp
savory	_____:_____:_____:_____:_____:_____:_____:	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____:	expected
clean	_____:_____:_____:_____:_____:_____:_____:	dirty
sane	_____:_____:_____:_____:_____:_____:_____:	insane
soft	_____:_____:_____:_____:_____:_____:_____:	hard
complex	_____:_____:_____:_____:_____:_____:_____:	simple
resisting	_____:_____:_____:_____:_____:_____:_____:	impelling
tingling	_____:_____:_____:_____:_____:_____:_____:	numb
boisterous	_____:_____:_____:_____:_____:_____:_____:	shy
fair	_____:_____:_____:_____:_____:_____:_____:	unfair
direct	_____:_____:_____:_____:_____:_____:_____:	indirect
following	_____:_____:_____:_____:_____:_____:_____:	leading

UNITED STATES

colorful	____	____	____	____	____	____	____	colorless
youthful	____	____	____	____	____	____	____	mature
bad	____	____	____	____	____	____	____	good
changeable	____	____	____	____	____	____	____	stable
large	____	____	____	____	____	____	____	small
excitable	____	____	____	____	____	____	____	calm
straight	____	____	____	____	____	____	____	curved
disloyal	____	____	____	____	____	____	____	loyal
heavenly	____	____	____	____	____	____	____	hellish
unusual	____	____	____	____	____	____	____	usual
weak	____	____	____	____	____	____	____	strong
sensitive	____	____	____	____	____	____	____	insensitive
defensive	____	____	____	____	____	____	____	aggressive
fast	____	____	____	____	____	____	____	slow
angular	____	____	____	____	____	____	____	rounded
severe	____	____	____	____	____	____	____	lenient
active	____	____	____	____	____	____	____	passive
sober	____	____	____	____	____	____	____	drunk
retarded	____	____	____	____	____	____	____	advanced
refreshed	____	____	____	____	____	____	____	weary



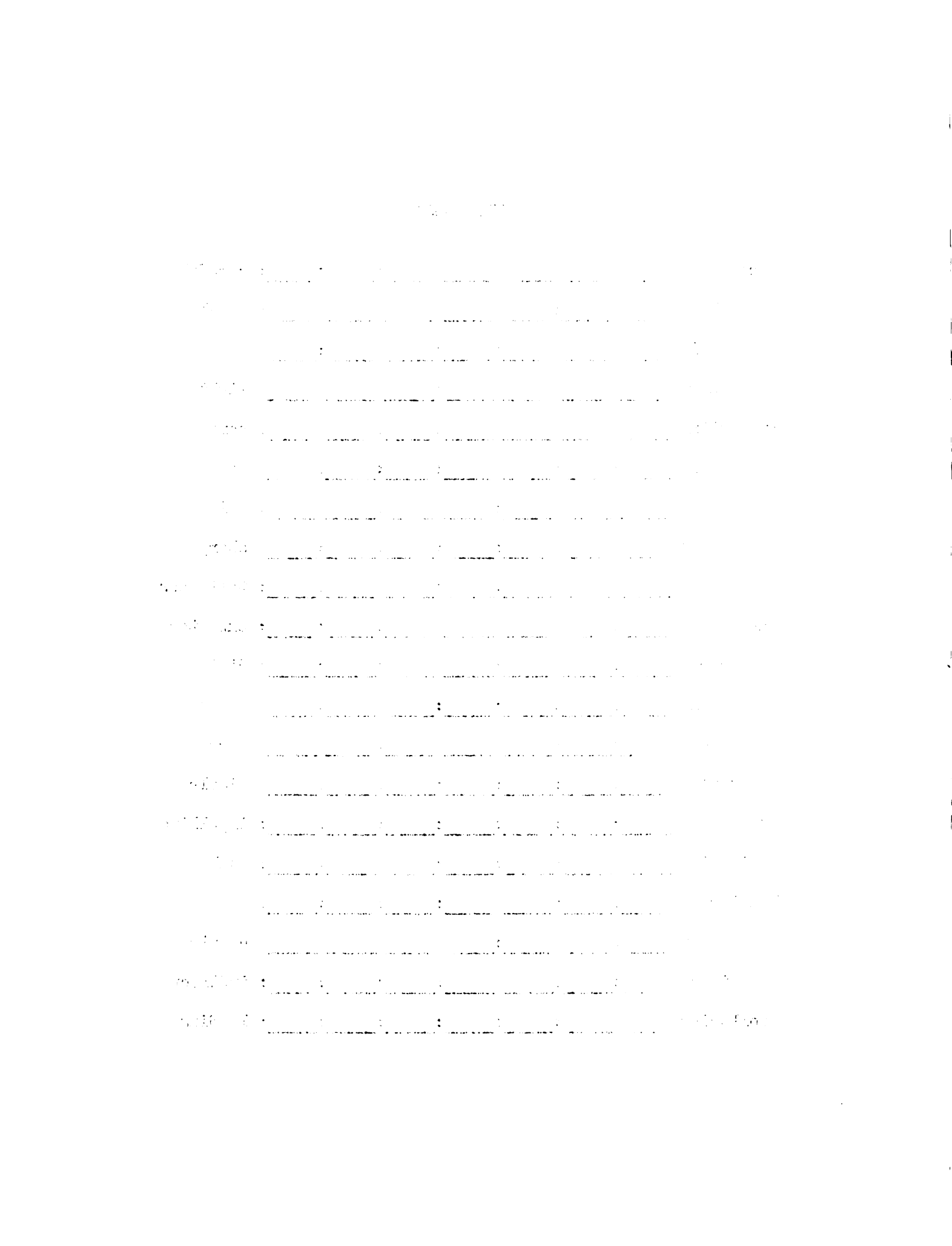
KNIFE

colorful	_____:_____:_____:_____:_____:_____:_____:	colorless
youthful	_____:_____:_____:_____:_____:_____:_____:	mature
bad	_____:_____:_____:_____:_____:_____:_____:	good
changeable	_____:_____:_____:_____:_____:_____:_____:	stable
large	_____:_____:_____:_____:_____:_____:_____:	small
excitable	_____:_____:_____:_____:_____:_____:_____:	calm
straight	_____:_____:_____:_____:_____:_____:_____:	curved
disloyal	_____:_____:_____:_____:_____:_____:_____:	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____:	hellish
unusual	_____:_____:_____:_____:_____:_____:_____:	usual
weak	_____:_____:_____:_____:_____:_____:_____:	strong
sensitive	_____:_____:_____:_____:_____:_____:_____:	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____:	aggressive
fast	_____:_____:_____:_____:_____:_____:_____:	slow
angular	_____:_____:_____:_____:_____:_____:_____:	rounded
severe	_____:_____:_____:_____:_____:_____:_____:	lenient
active	_____:_____:_____:_____:_____:_____:_____:	passive
sober	_____:_____:_____:_____:_____:_____:_____:	drunk
retarded	_____:_____:_____:_____:_____:_____:_____:	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____:	weary

WAR WITH RUSSIA

careless	_____	:	_____	:	_____	:	_____	careful
kind	_____	:	_____	:	_____	:	_____	cruel
old	_____	:	_____	:	_____	:	_____	new
heavy	_____	:	_____	:	_____	:	_____	light
interesting	_____	:	_____	:	_____	:	_____	boring
drawn	_____	:	_____	:	_____	:	_____	propelled
hot	_____	:	_____	:	_____	:	_____	cold
blunt	_____	:	_____	:	_____	:	_____	sharp
savory	_____	:	_____	:	_____	:	_____	tasteless
unexpected	_____	:	_____	:	_____	:	_____	expected
clean	_____	:	_____	:	_____	:	_____	dirty
sane	_____	:	_____	:	_____	:	_____	insane
soft	_____	:	_____	:	_____	:	_____	hard
complex	_____	:	_____	:	_____	:	_____	simple
resisting	_____	:	_____	:	_____	:	_____	impelling
tingling	_____	:	_____	:	_____	:	_____	numb
boisterous	_____	:	_____	:	_____	:	_____	shy
fair	_____	:	_____	:	_____	:	_____	unfair
direct	_____	:	_____	:	_____	:	_____	indirect
following	_____	:	_____	:	_____	:	_____	leading

(SB-1)



BOULDER

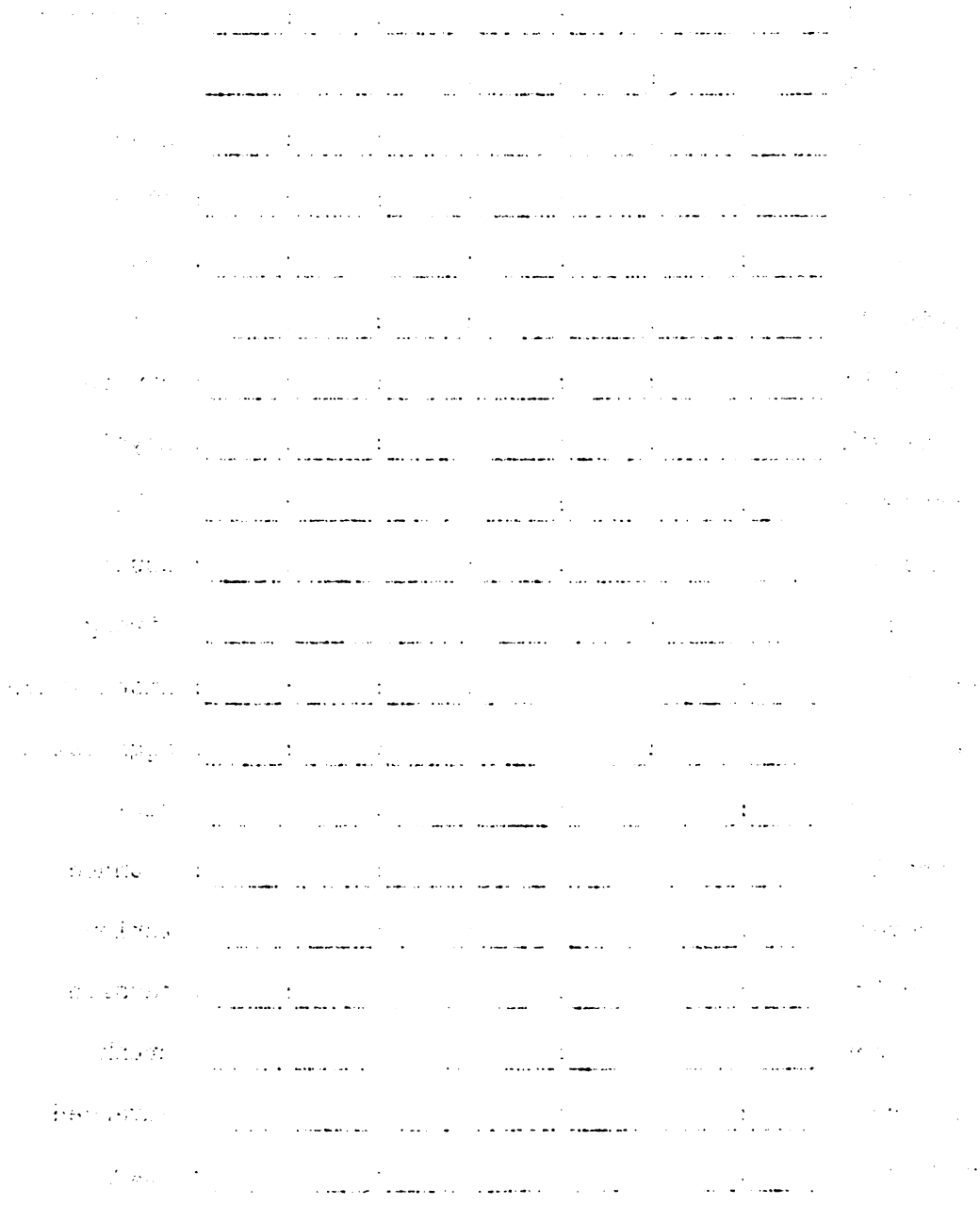
careless	____	____	____	____	____	____	____	careful
kind	____	____	____	____	____	____	____	cruel
old	____	____	____	____	____	____	____	new
heavy	____	____	____	____	____	____	____	light
interesting	____	____	____	____	____	____	____	boring
drawn	____	____	____	____	____	____	____	propelled
hot	____	____	____	____	____	____	____	cold
blunt	____	____	____	____	____	____	____	sharp
savory	____	____	____	____	____	____	____	tasteless
unexpected	____	____	____	____	____	____	____	expected
clean	____	____	____	____	____	____	____	dirty
sane	____	____	____	____	____	____	____	insane
soft	____	____	____	____	____	____	____	hard
complex	____	____	____	____	____	____	____	simple
resisting	____	____	____	____	____	____	____	impelling
tingling	____	____	____	____	____	____	____	numb
boisterous	____	____	____	____	____	____	____	shy
fair	____	____	____	____	____	____	____	unfair
direct	____	____	____	____	____	____	____	indirect
following	____	____	____	____	____	____	____	leading

(SB-1)

MY MOTHER

colorful	_____:_____:_____:_____:_____:_____:_____:	colorless
youthful	_____:_____:_____:_____:_____:_____:_____:	mature
bad	_____:_____:_____:_____:_____:_____:_____:	good
changeable	_____:_____:_____:_____:_____:_____:_____:	stable
large	_____:_____:_____:_____:_____:_____:_____:	small
excitable	_____:_____:_____:_____:_____:_____:_____:	calm
straight	_____:_____:_____:_____:_____:_____:_____:	curved
disloyal	_____:_____:_____:_____:_____:_____:_____:	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____:	hellish
unusual	_____:_____:_____:_____:_____:_____:_____:	usual
weak	_____:_____:_____:_____:_____:_____:_____:	strong
sensitive	_____:_____:_____:_____:_____:_____:_____:	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____:	aggressive
fast	_____:_____:_____:_____:_____:_____:_____:	slow
angular	_____:_____:_____:_____:_____:_____:_____:	rounded
severe	_____:_____:_____:_____:_____:_____:_____:	lenient
active	_____:_____:_____:_____:_____:_____:_____:	passive
sober	_____:_____:_____:_____:_____:_____:_____:	drunk
retarded	_____:_____:_____:_____:_____:_____:_____:	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____:	weary

(SA-1)



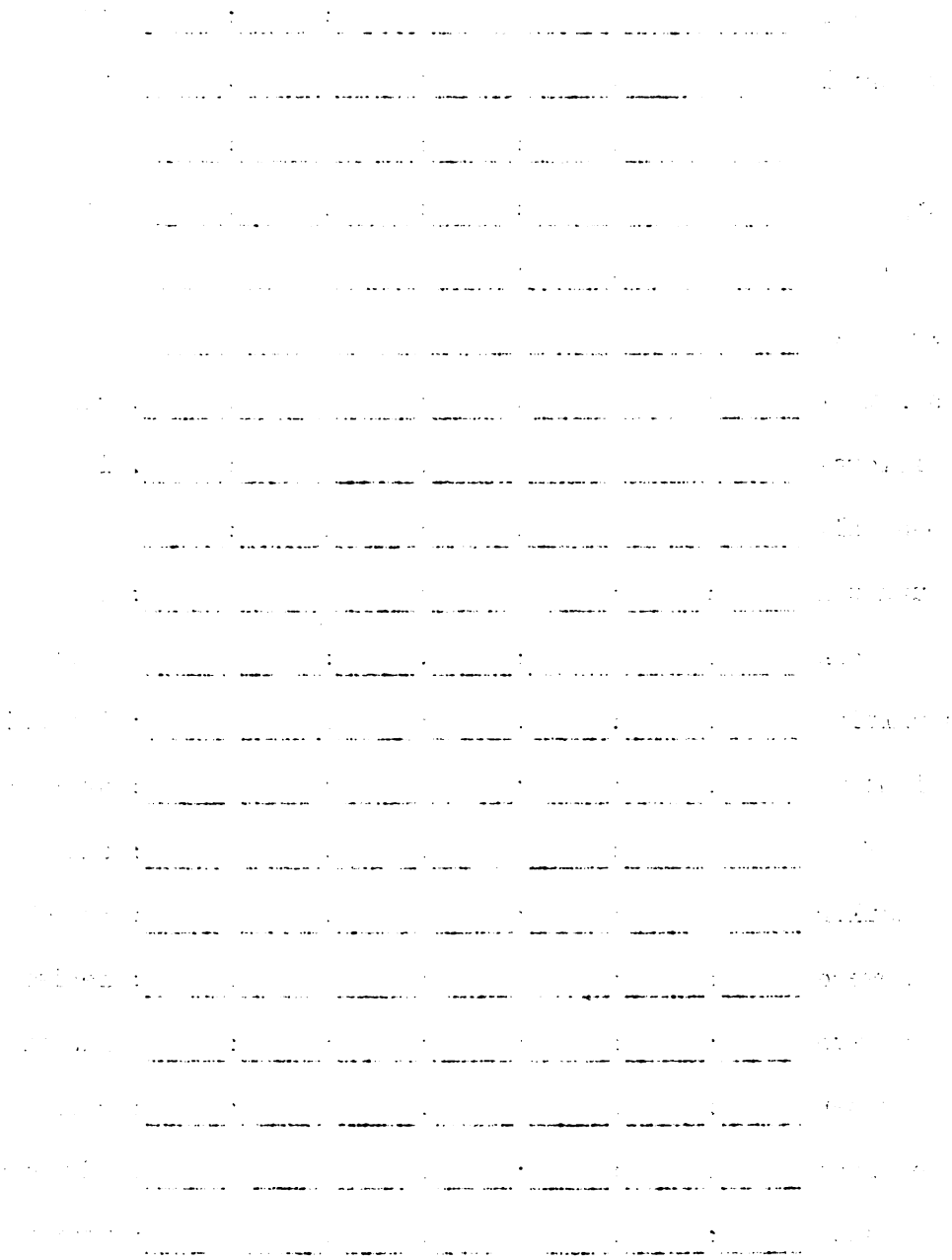
SOCIALISM

careless	_____:_____:_____:_____:_____:_____:_____:	careful
kind	_____:_____:_____:_____:_____:_____:_____:	cruel
old	_____:_____:_____:_____:_____:_____:_____:	new
heavy	_____:_____:_____:_____:_____:_____:_____:	light
interesting	_____:_____:_____:_____:_____:_____:_____:	boring
drawn	_____:_____:_____:_____:_____:_____:_____:	propelled
hot	_____:_____:_____:_____:_____:_____:_____:	cold
blunt	_____:_____:_____:_____:_____:_____:_____:	sharp
savory	_____:_____:_____:_____:_____:_____:_____:	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____:	expected
clean	_____:_____:_____:_____:_____:_____:_____:	dirty
sane	_____:_____:_____:_____:_____:_____:_____:	insane
soft	_____:_____:_____:_____:_____:_____:_____:	hard
complex	_____:_____:_____:_____:_____:_____:_____:	simple
resisting	_____:_____:_____:_____:_____:_____:_____:	impelling
tingling	_____:_____:_____:_____:_____:_____:_____:	numb
boisterous	_____:_____:_____:_____:_____:_____:_____:	shy
fair	_____:_____:_____:_____:_____:_____:_____:	unfair
direct	_____:_____:_____:_____:_____:_____:_____:	indirect
following	_____:_____:_____:_____:_____:_____:_____:	leading

(SB-1)

ME

colorful	_____:_____:_____:_____:_____:_____:_____:	colorless
youthful	_____:_____:_____:_____:_____:_____:_____:	mature
bad	_____:_____:_____:_____:_____:_____:_____:	good
changeable	_____:_____:_____:_____:_____:_____:_____:	stable
large	_____:_____:_____:_____:_____:_____:_____:	small
excitable	_____:_____:_____:_____:_____:_____:_____:	calm
straight	_____:_____:_____:_____:_____:_____:_____:	curved
disloyal	_____:_____:_____:_____:_____:_____:_____:	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____:	hellish
unusual	_____:_____:_____:_____:_____:_____:_____:	usual
weak	_____:_____:_____:_____:_____:_____:_____:	strong
sensitive	_____:_____:_____:_____:_____:_____:_____:	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____:	aggressive
fast	_____:_____:_____:_____:_____:_____:_____:	slow
angular	_____:_____:_____:_____:_____:_____:_____:	rounded
severe	_____:_____:_____:_____:_____:_____:_____:	lenient
active	_____:_____:_____:_____:_____:_____:_____:	passive
sober	_____:_____:_____:_____:_____:_____:_____:	drunk
retarded	_____:_____:_____:_____:_____:_____:_____:	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____:	weary



To the student:

Thank you for taking part in an important social scientific research study which explores public opinion and meaning. Your contribution is greatly appreciated.

Since you will be working on several problems in this series, it is important for us to keep all of your material together.

Therefore, please identify your material by PRINTING YOUR LAST NAME AND YOUR INITIALS in the blank below. Also, please state your age and sex.

Remember that in tabulating the results of this study, your name will not be used and you will not be identified in any way. As soon as we have put together all of the problems you have worked on, this sheet will be destroyed.

PLEASE PRINT YOUR LAST NAME AND YOUR INITIALS HERE: _____

Date of birth: Month and year: _____

Please place a check mark in the appropriate blank:

Sex: Male: ____; Female____.

MEANING PROBLEM

Part II

Department of Communication
Michigan State University
East Lansing, Michigan

INSTRUCTIONS.

The purpose of this research project is to measure the meanings various people have for different things. You worked on another set previously.

1. At the top of each page in this booklet you will find a word written in capital letters. It represents a concept or thing you are to judge. Read the concept, then rate it against a series of scales which appear beneath it.

2. A scale looks like this

fair _____:_____:_____:_____:_____:_____:_____ unfair

3. Be sure you make your judgements on the basis of what the concept means to you.

4. Here is how to use the scales:

a. If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark like this:

fair __X__:_____:_____:_____:_____:_____:_____ unfair

OR

fair _____:_____:_____:_____:_____:_____:__X__ unfair

b. If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark like this:

strong _____:__X__:_____:_____:_____:_____:_____ weak

OR

strong _____:_____:_____:_____:_____:__X__:_____ weak

c. If the word seems only slightly related to one side, as opposed to the other side (but is not really neutral), then you should check like this:

active _____:_____:_X_:_____:_____:_____:_____ passive

OR

active _____:_____:_____:_____:_X_:_____:_____ passive

d. The direction toward which you check, or course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

e. If you consider the word to be neutral on the scale, both sides of the scale equally associated with the word, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

safe _____:_____:_____:_X_:_____:_____:_____ dangerous

f. IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

THIS NOT THIS

_____:_____:_____:_X_:_____:_____X_____

(2) Be sure you check every scale for every concept. Do not omit any.

(3) Never put more than one check-mark on a single scale.

5. Sometimes you may feel as thought you've had the same item before on the test. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the test. Make each item a separate and independent judgement.

6. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items,that we want. On the other hand, please do not be careless, because we want your true impressions.

(PLEASE TURN PAGE AND BEGIN)

DEATH

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

MODERN ART

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

MY MOTHER

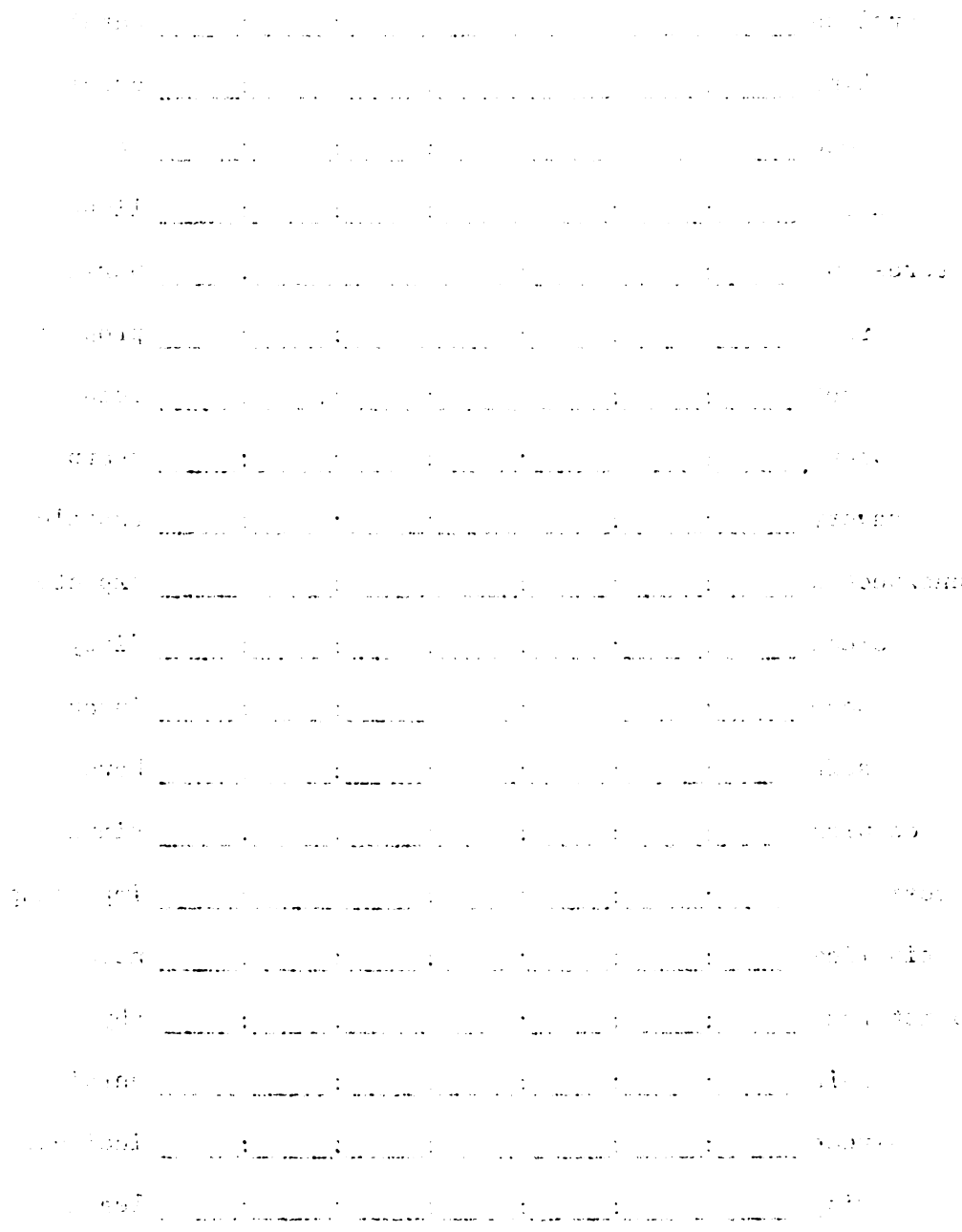
careless	_____:_____:_____:_____:_____:_____:_____	careful
kind	_____:_____:_____:_____:_____:_____:_____	cruel
old	_____:_____:_____:_____:_____:_____:_____	new
heavy	_____:_____:_____:_____:_____:_____:_____	light
interesting	_____:_____:_____:_____:_____:_____:_____	boring
drawn	_____:_____:_____:_____:_____:_____:_____	propelled
hot	_____:_____:_____:_____:_____:_____:_____	cold
blunt	_____:_____:_____:_____:_____:_____:_____	sharp
savory	_____:_____:_____:_____:_____:_____:_____	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____	expected
clean	_____:_____:_____:_____:_____:_____:_____	dirty
sane	_____:_____:_____:_____:_____:_____:_____	insane
soft	_____:_____:_____:_____:_____:_____:_____	hard
complex	_____:_____:_____:_____:_____:_____:_____	simple
resisting	_____:_____:_____:_____:_____:_____:_____	impelling
tingling	_____:_____:_____:_____:_____:_____:_____	numb
boisterous	_____:_____:_____:_____:_____:_____:_____	shy
fair	_____:_____:_____:_____:_____:_____:_____	unfair
direct	_____:_____:_____:_____:_____:_____:_____	indirect
following	_____:_____:_____:_____:_____:_____:_____	leading

(SB-1)

SNOW

careless	_____:_____:_____:_____:_____:_____:_____	careful
kind	_____:_____:_____:_____:_____:_____:_____	cruel
old	_____:_____:_____:_____:_____:_____:_____	new
heavy	_____:_____:_____:_____:_____:_____:_____	light
interesting	_____:_____:_____:_____:_____:_____:_____	boring
drawn	_____:_____:_____:_____:_____:_____:_____	propelled
hot	_____:_____:_____:_____:_____:_____:_____	cold
blunt	_____:_____:_____:_____:_____:_____:_____	sharp
savory	_____:_____:_____:_____:_____:_____:_____	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____	expected
clean	_____:_____:_____:_____:_____:_____:_____	dirty
sane	_____:_____:_____:_____:_____:_____:_____	insane
soft	_____:_____:_____:_____:_____:_____:_____	hard
complex	_____:_____:_____:_____:_____:_____:_____	simple
resisting	_____:_____:_____:_____:_____:_____:_____	impelling
tingling	_____:_____:_____:_____:_____:_____:_____	numb
boisterous	_____:_____:_____:_____:_____:_____:_____	shy
fair	_____:_____:_____:_____:_____:_____:_____	unfair
direct	_____:_____:_____:_____:_____:_____:_____	indirect
following	_____:_____:_____:_____:_____:_____:_____	leading

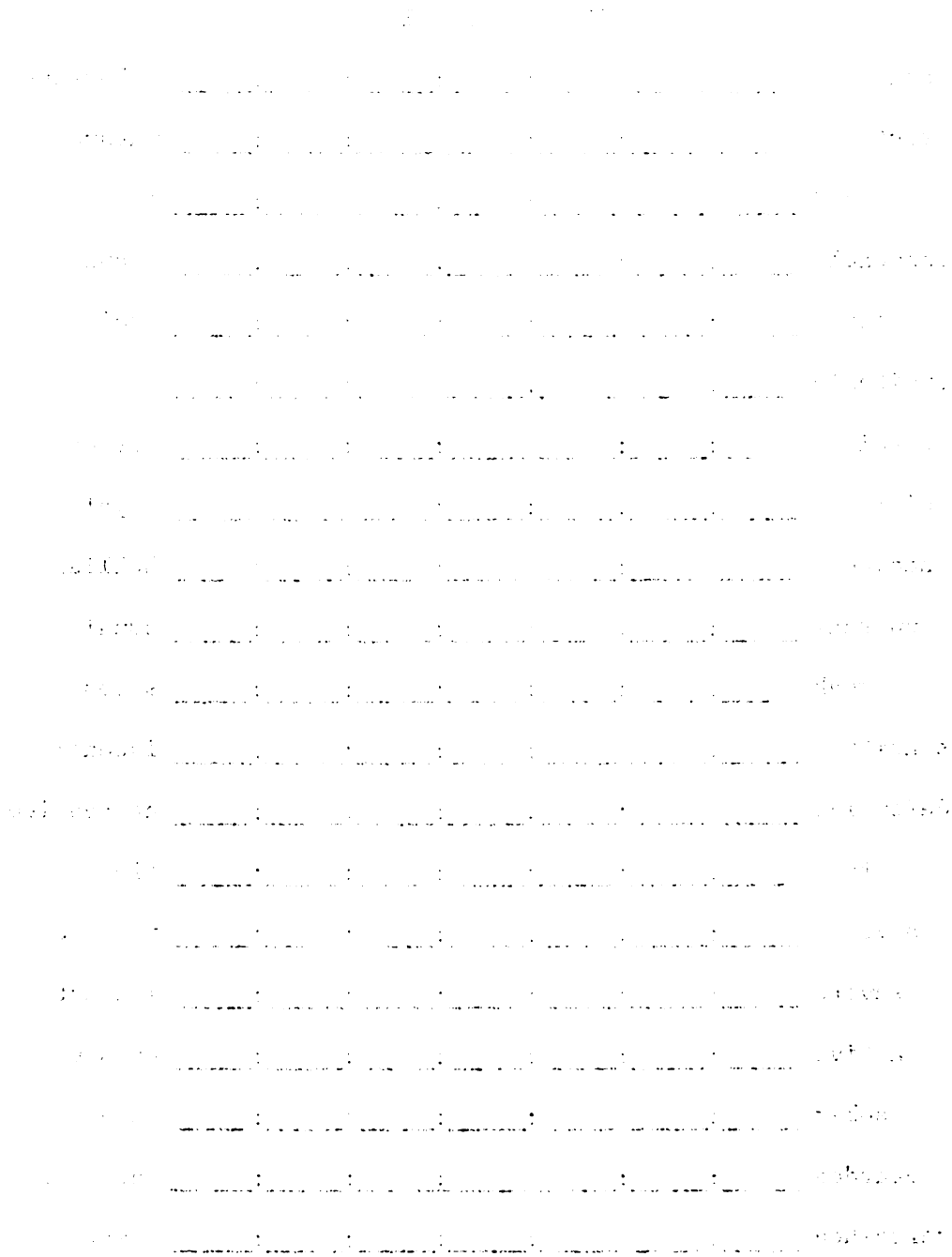
(SB-1)



WAR WITH RUSSIA

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)



BOULDER

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

ME

careless _____:_____:_____:_____:_____:_____:_____ careful

kind _____:_____:_____:_____:_____:_____:_____ cruel

old _____:_____:_____:_____:_____:_____:_____ new

heavy _____:_____:_____:_____:_____:_____:_____ light

interesting _____:_____:_____:_____:_____:_____:_____ boring

drawn _____:_____:_____:_____:_____:_____:_____ propelled

hot _____:_____:_____:_____:_____:_____:_____ cold

blunt _____:_____:_____:_____:_____:_____:_____ sharp

savory _____:_____:_____:_____:_____:_____:_____ tasteless

unexpected _____:_____:_____:_____:_____:_____:_____ expected

clean _____:_____:_____:_____:_____:_____:_____ dirty

sane _____:_____:_____:_____:_____:_____:_____ insane

soft _____:_____:_____:_____:_____:_____:_____ hard

complex _____:_____:_____:_____:_____:_____:_____ simple

resisting _____:_____:_____:_____:_____:_____:_____ impelling

tingling _____:_____:_____:_____:_____:_____:_____ numb

boisterous _____:_____:_____:_____:_____:_____:_____ shy

fair _____:_____:_____:_____:_____:_____:_____ unfair

direct _____:_____:_____:_____:_____:_____:_____ indirect

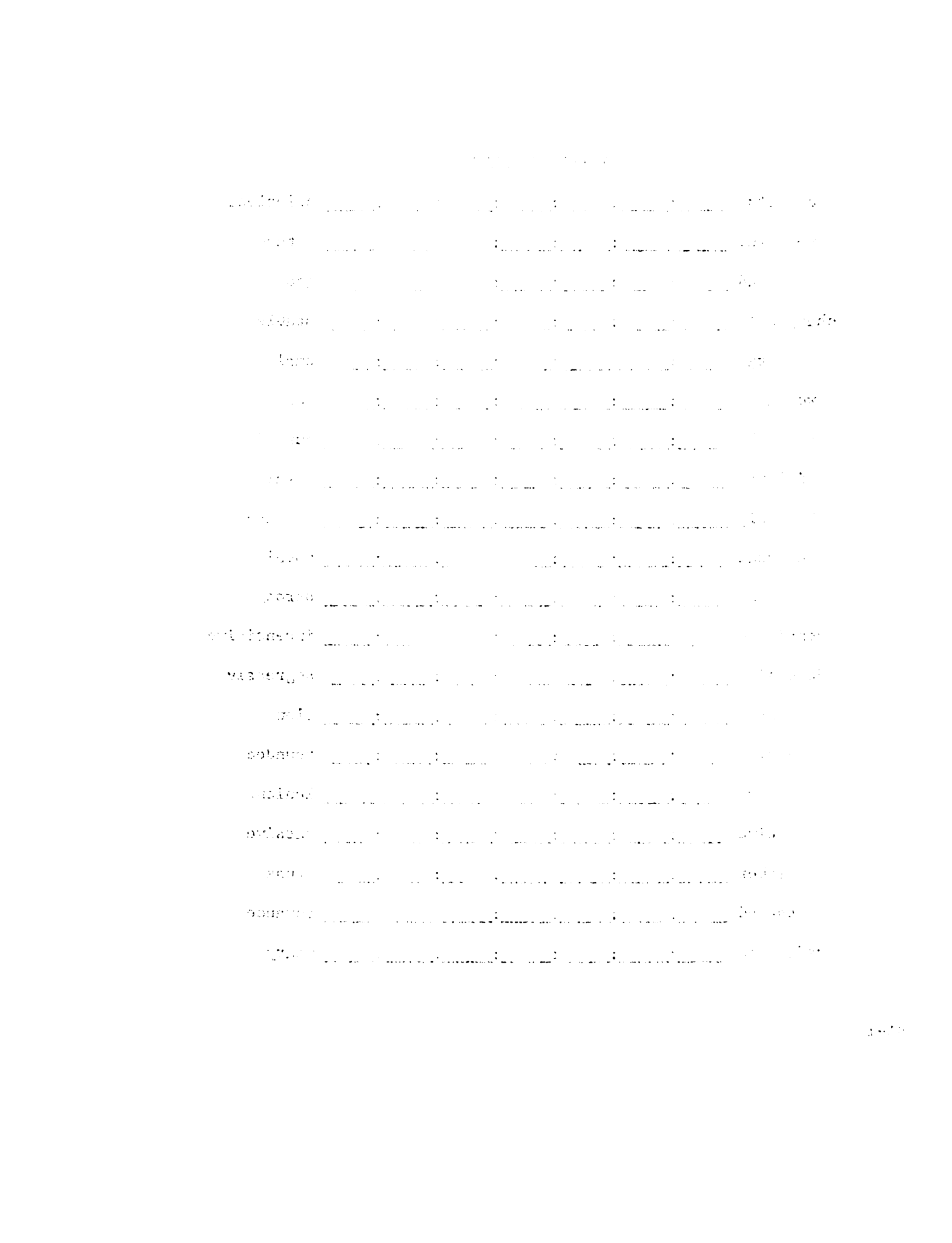
following _____:_____:_____:_____:_____:_____:_____ leading

(SB-1)

NIKITA KHRUSHCHEV

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)



BIRTH

careless	_____:_____:_____:_____:_____:_____:_____	careful
kind	_____:_____:_____:_____:_____:_____:_____	cruel
old	_____:_____:_____:_____:_____:_____:_____	new
heavy	_____:_____:_____:_____:_____:_____:_____	light
interesting	_____:_____:_____:_____:_____:_____:_____	boring
drawn	_____:_____:_____:_____:_____:_____:_____	propelled
hot	_____:_____:_____:_____:_____:_____:_____	cold
blunt	_____:_____:_____:_____:_____:_____:_____	sharp
savory	_____:_____:_____:_____:_____:_____:_____	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____	expected
clean	_____:_____:_____:_____:_____:_____:_____	dirty
sane	_____:_____:_____:_____:_____:_____:_____	insane
soft	_____:_____:_____:_____:_____:_____:_____	hard
complex	_____:_____:_____:_____:_____:_____:_____	simple
resisting	_____:_____:_____:_____:_____:_____:_____	impelling
tingling	_____:_____:_____:_____:_____:_____:_____	numb
boisterous	_____:_____:_____:_____:_____:_____:_____	shy
fair	_____:_____:_____:_____:_____:_____:_____	unfair
direct	_____:_____:_____:_____:_____:_____:_____	indirect
following	_____:_____:_____:_____:_____:_____:_____	leading

(SB-1)

UNITED STATES

careless	_____:_____:_____:_____:_____:_____:_____	careful
kind	_____:_____:_____:_____:_____:_____:_____	cruel
old	_____:_____:_____:_____:_____:_____:_____	new
heavy	_____:_____:_____:_____:_____:_____:_____	light
interesting	_____:_____:_____:_____:_____:_____:_____	boring
drawn	_____:_____:_____:_____:_____:_____:_____	propelled
hot	_____:_____:_____:_____:_____:_____:_____	cold
blunt	_____:_____:_____:_____:_____:_____:_____	sharp
savory	_____:_____:_____:_____:_____:_____:_____	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____	expected
clean	_____:_____:_____:_____:_____:_____:_____	dirty
sane	_____:_____:_____:_____:_____:_____:_____	insane
soft	_____:_____:_____:_____:_____:_____:_____	hard
complex	_____:_____:_____:_____:_____:_____:_____	simple
resisting	_____:_____:_____:_____:_____:_____:_____	impelling
tingling	_____:_____:_____:_____:_____:_____:_____	numb
boisterous	_____:_____:_____:_____:_____:_____:_____	shy
fair	_____:_____:_____:_____:_____:_____:_____	unfair
direct	_____:_____:_____:_____:_____:_____:_____	indirect
following	_____:_____:_____:_____:_____:_____:_____	leading

SIN

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

HOSPITAL

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

JOHN F. KENNEDY

careless	_____:_____:_____:_____:_____:_____:_____	careful
kind	_____:_____:_____:_____:_____:_____:_____	cruel
old	_____:_____:_____:_____:_____:_____:_____	new
heavy	_____:_____:_____:_____:_____:_____:_____	light
interesting	_____:_____:_____:_____:_____:_____:_____	boring
drawn	_____:_____:_____:_____:_____:_____:_____	propelled
hot	_____:_____:_____:_____:_____:_____:_____	cold
blunt	_____:_____:_____:_____:_____:_____:_____	sharp
savory	_____:_____:_____:_____:_____:_____:_____	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____	expected
clean	_____:_____:_____:_____:_____:_____:_____	dirty
sane	_____:_____:_____:_____:_____:_____:_____	insane
soft	_____:_____:_____:_____:_____:_____:_____	hard
complex	_____:_____:_____:_____:_____:_____:_____	simple
resisting	_____:_____:_____:_____:_____:_____:_____	impelling
tingling	_____:_____:_____:_____:_____:_____:_____	numb
boisterous	_____:_____:_____:_____:_____:_____:_____	shy
fair	_____:_____:_____:_____:_____:_____:_____	unfair
direct	_____:_____:_____:_____:_____:_____:_____	indirect
following	_____:_____:_____:_____:_____:_____:_____	leading

(SB-1)

COMMUNIST CHINA

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

ENGINE

careless	_____:_____:_____:_____:_____:_____:_____	careful
kind	_____:_____:_____:_____:_____:_____:_____	cruel
old	_____:_____:_____:_____:_____:_____:_____	new
heavy	_____:_____:_____:_____:_____:_____:_____	light
interesting	_____:_____:_____:_____:_____:_____:_____	boring
drawn	_____:_____:_____:_____:_____:_____:_____	propelled
hot	_____:_____:_____:_____:_____:_____:_____	cold
blunt	_____:_____:_____:_____:_____:_____:_____	sharp
savory	_____:_____:_____:_____:_____:_____:_____	tasteless
unexpected	_____:_____:_____:_____:_____:_____:_____	expected
clean	_____:_____:_____:_____:_____:_____:_____	dirty
sane	_____:_____:_____:_____:_____:_____:_____	insane
soft	_____:_____:_____:_____:_____:_____:_____	hard
complex	_____:_____:_____:_____:_____:_____:_____	simple
resisting	_____:_____:_____:_____:_____:_____:_____	impelling
tingling	_____:_____:_____:_____:_____:_____:_____	numb
boisterous	_____:_____:_____:_____:_____:_____:_____	shy
fair	_____:_____:_____:_____:_____:_____:_____	unfair
direct	_____:_____:_____:_____:_____:_____:_____	indirect
following	_____:_____:_____:_____:_____:_____:_____	leading

PRISON

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

| | | |

LEADERSHIP

careless _____:_____:_____:_____:_____:_____:_____ careful

kind _____:_____:_____:_____:_____:_____:_____ cruel

old _____:_____:_____:_____:_____:_____:_____ new

heavy _____:_____:_____:_____:_____:_____:_____ light

interesting _____:_____:_____:_____:_____:_____:_____ boring

drawn _____:_____:_____:_____:_____:_____:_____ propelled

hot _____:_____:_____:_____:_____:_____:_____ cold

blunt _____:_____:_____:_____:_____:_____:_____ sharp

savory _____:_____:_____:_____:_____:_____:_____ tasteless

unexpected _____:_____:_____:_____:_____:_____:_____ expected

clean _____:_____:_____:_____:_____:_____:_____ dirty

sane _____:_____:_____:_____:_____:_____:_____ insane

soft _____:_____:_____:_____:_____:_____:_____ hard

complex _____:_____:_____:_____:_____:_____:_____ simple

resisting _____:_____:_____:_____:_____:_____:_____ impelling

tingling _____:_____:_____:_____:_____:_____:_____ numb

boisterous _____:_____:_____:_____:_____:_____:_____ shy

fair _____:_____:_____:_____:_____:_____:_____ unfair

direct _____:_____:_____:_____:_____:_____:_____ indirect

following _____:_____:_____:_____:_____:_____:_____ leading

(SB-1)

SOCIALISM

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
wear	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

KNIFE

careless _____:_____:_____:_____:_____:_____ careful

kind _____:_____:_____:_____:_____:_____ cruel

old _____:_____:_____:_____:_____:_____ new

heavy _____:_____:_____:_____:_____:_____:light

interesting _____:_____:_____:_____:_____:_____ boring

drawn _____:_____:_____:_____:_____:_____ propelled

hot _____:_____:_____:_____:_____:_____ cold

blunt _____:_____:_____:_____:_____:_____ sharp

savory _____:_____:_____:_____:_____:_____ tasteless

unexpected _____:_____:_____:_____:_____:_____ expected

clean _____:_____:_____:_____:_____:_____ dirty

sane _____:_____:_____:_____:_____:_____ insane

soft _____:_____:_____:_____:_____:_____ hard

complex _____:_____:_____:_____:_____:_____ simple

resisting _____:_____:_____:_____:_____:_____ impelling

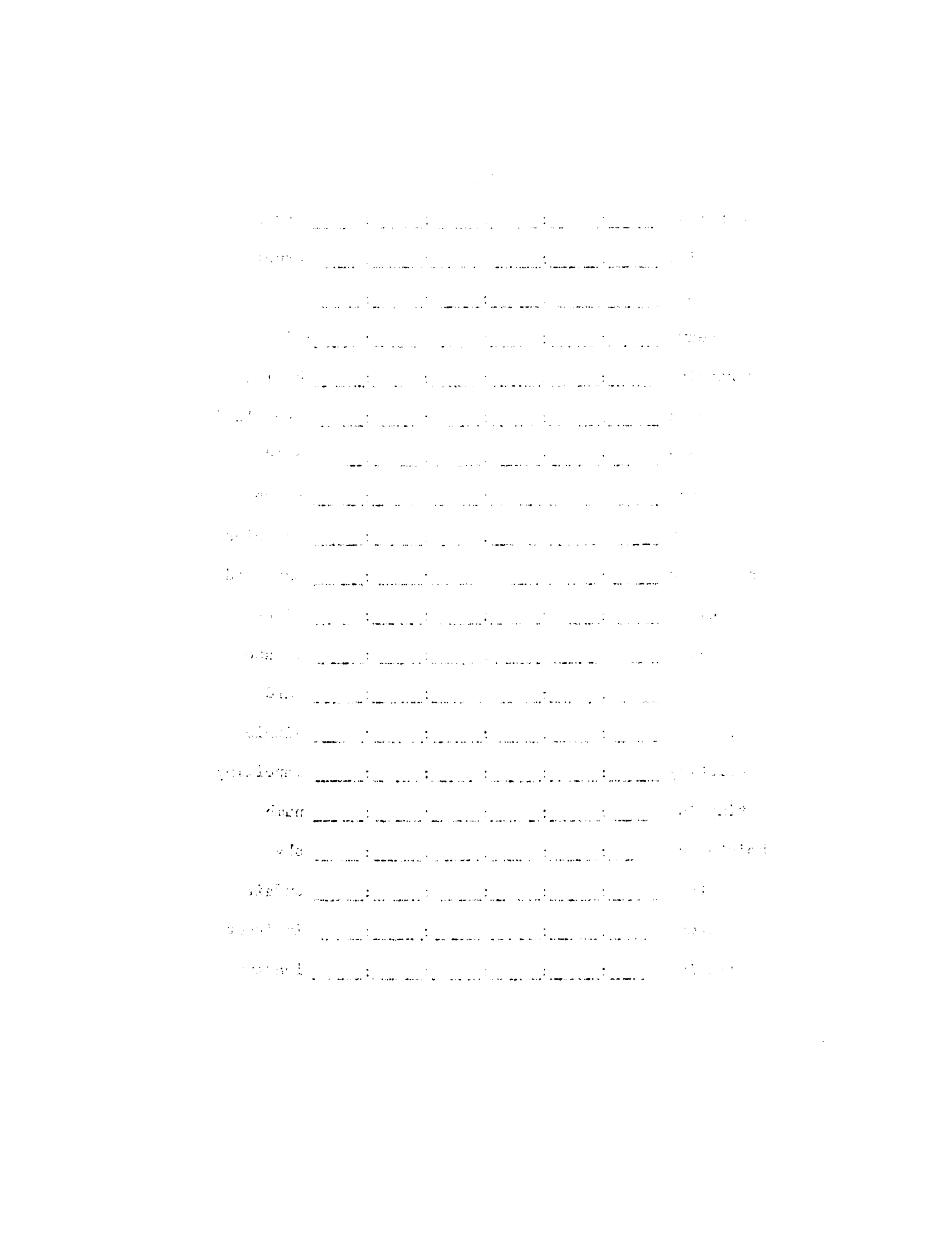
tingling _____:_____:_____:_____:_____:_____ numb

boisterous _____:_____:_____:_____:_____:_____ shy

fair _____:_____:_____:_____:_____:_____ unfair

direct _____:_____:_____:_____:_____:_____ indirect

following _____:_____:_____:_____:_____:_____ leading



SYMPHONY

colorful	_____:_____:_____:_____:_____:_____:_____	colorless
youthful	_____:_____:_____:_____:_____:_____:_____	mature
bad	_____:_____:_____:_____:_____:_____:_____	good
changeable	_____:_____:_____:_____:_____:_____:_____	stable
large	_____:_____:_____:_____:_____:_____:_____	small
excitable	_____:_____:_____:_____:_____:_____:_____	calm
straight	_____:_____:_____:_____:_____:_____:_____	curved
disloyal	_____:_____:_____:_____:_____:_____:_____	loyal
heavenly	_____:_____:_____:_____:_____:_____:_____	hellish
unusual	_____:_____:_____:_____:_____:_____:_____	usual
weak	_____:_____:_____:_____:_____:_____:_____	strong
sensitive	_____:_____:_____:_____:_____:_____:_____	insensitive
defensive	_____:_____:_____:_____:_____:_____:_____	aggressive
fast	_____:_____:_____:_____:_____:_____:_____	slow
angular	_____:_____:_____:_____:_____:_____:_____	rounded
severe	_____:_____:_____:_____:_____:_____:_____	lenient
active	_____:_____:_____:_____:_____:_____:_____	passive
sober	_____:_____:_____:_____:_____:_____:_____	drunk
retarded	_____:_____:_____:_____:_____:_____:_____	advanced
refreshed	_____:_____:_____:_____:_____:_____:_____	weary

(SA-1)

To the student:

Thank you for taking part in an important social scientific research study which explores public opinion and meaning. Your contribution is greatly appreciated.

Since you have worked on several problems in this series, it is important for us to keep all of your material together.

Therefore, please identify your material by PRINTING YOUR LAST NAME AND YOUR INITIALS in the blank below. Also, please state your age and sex.

Remember that in tabulating the results of this study, your name will not be used and you will not be identified in any way. As soon as we have put together all of the problems you have worked on, this sheet will be destroyed.

PLEASE PRINT YOUR LAST NAME AND YOUR INITIALS HERE:_____

Date of birth: Month and year:_____

Please place a check mark in the appropriate blank:

Sex: Male _____; Female _____.

APPENDIX B

Test administrators' instruction sheet.

Public Opinion and Structure of Meaning Research Study

TO: Instructor

SUBJECT: How to administer the Public Opinion and Meaning Problem Research Instruments (test booklets)

Test periods: Two instruments will be administered, one in each of two 50-minute class periods.

In the first session, a booklet titled PUBLIC OPINION PROBLEM will be administered. In the second session, a booklet titled MEANING PROBLEM PART II will be administered.

Time:

First session: The PUBLIC OPINION PROBLEM booklet usually takes students between 35 to 50 minutes to complete. Most should finish in 40 to 45 minutes.

Second session: The MEANING PROBLEM PART II booklet takes between 20 and 40 minutes to complete.

Nature of the instruments:

First session. The PUBLIC OPINION PROBLEM booklet contains a total of 28 pages:

1	title page
1	public opinion instruction sheet
3	public opinion problem pages
2	meaning problem instruction sheets
20	meaning problem pages
1	student identification page
28	

Second session. The MEANING PROBLEM PART II booklet contains a total of 24 pages:

1	title page
2	meaning problem instruction sheets
20	meaning problem pages
1	student identification page
24	

Please note that although the test booklets appear lengthy, they take but a few seconds per page to complete.

Also note that the booklet used in the second session is actually a continuation of the meaning problem administered in the first session. The concepts judged are the same in the two meaning problem booklets but adjective pairs differ. A student may inform the instructor that he has taken MEANING PROBLEM PART II in a previous session.

Public Opinion - continued

Procedure: Hand out booklets using any system that saves time. Caution students not to open booklets until you give the signal. As soon as a student has completed his test, he may leave. If possible, please check the student's identification page for correct information before he leaves.

We have found it is not necessary for test administrators to explain the response procedure expected of the students. The instrument instruction sheets usually are sufficient. Occasionally a student has difficulty with the instruction sheet and occasionally a student asks a question about the meaning of an adjective. It is permissible to answer briefly questions of this nature.

What to tell students: Since administration time is short, please limit your instructions to these:

First session.

1. PLEASE DO NOT TURN THE FIRST PAGE UNTIL I TELL YOU TO BEGIN.
2. This is not an examination. Youare taking part in an important social scientific research project dealing with the study of public opinion and meaning. Work carefully but work rapidly.
3. Read instructions in your problem booklet carefully. Raise your hand if you have questions.
4. When I give the signal to begin, turn the title page and proceed. When you have completed all of the pages of the problem, turn it in to me. Then you may leave.
5. You may begin.

Second session.

1. PLEASE DO NOT TURN THE FIRST PAGE UNTIL I TELL YOU TO BEGIN.
2. This is a continuation of the meaning problem you completed last time. It is NOT the same problem.

   Please work carefully.
3. When I give the signal to begin, turn the title page and proceed. When you have completed all of the pages of the problem, turn it in to me. Then you may leave.
4. You may begin.

Thank you for your help.

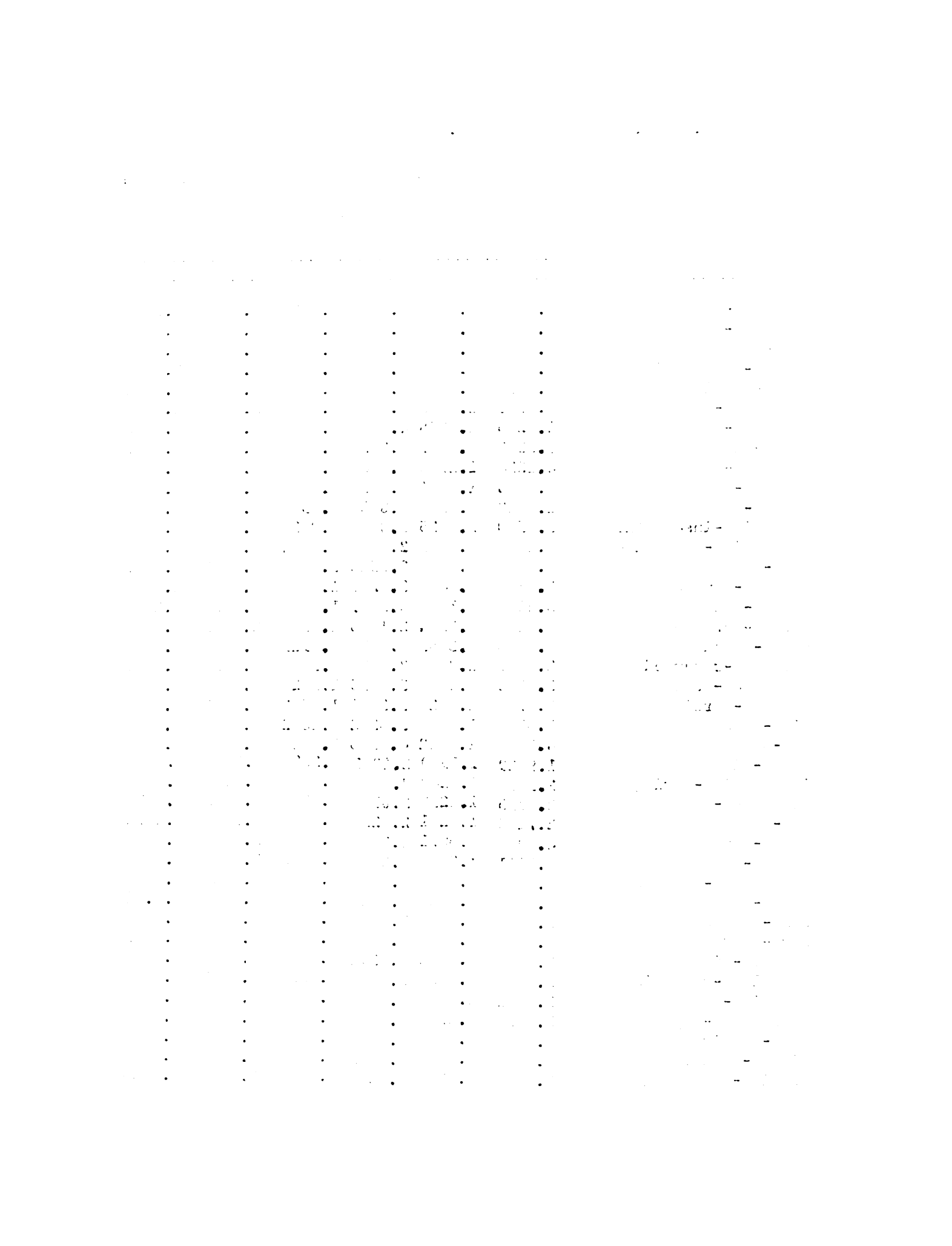
APPENDIX C

Mean judgments and standard deviations for 19 concepts on 40 scales by closed, open, and medium groups.

Mean judgments and standard deviations for 19 concepts on 40 scales by CLOSED, OPEN, and MEDIUM groups.

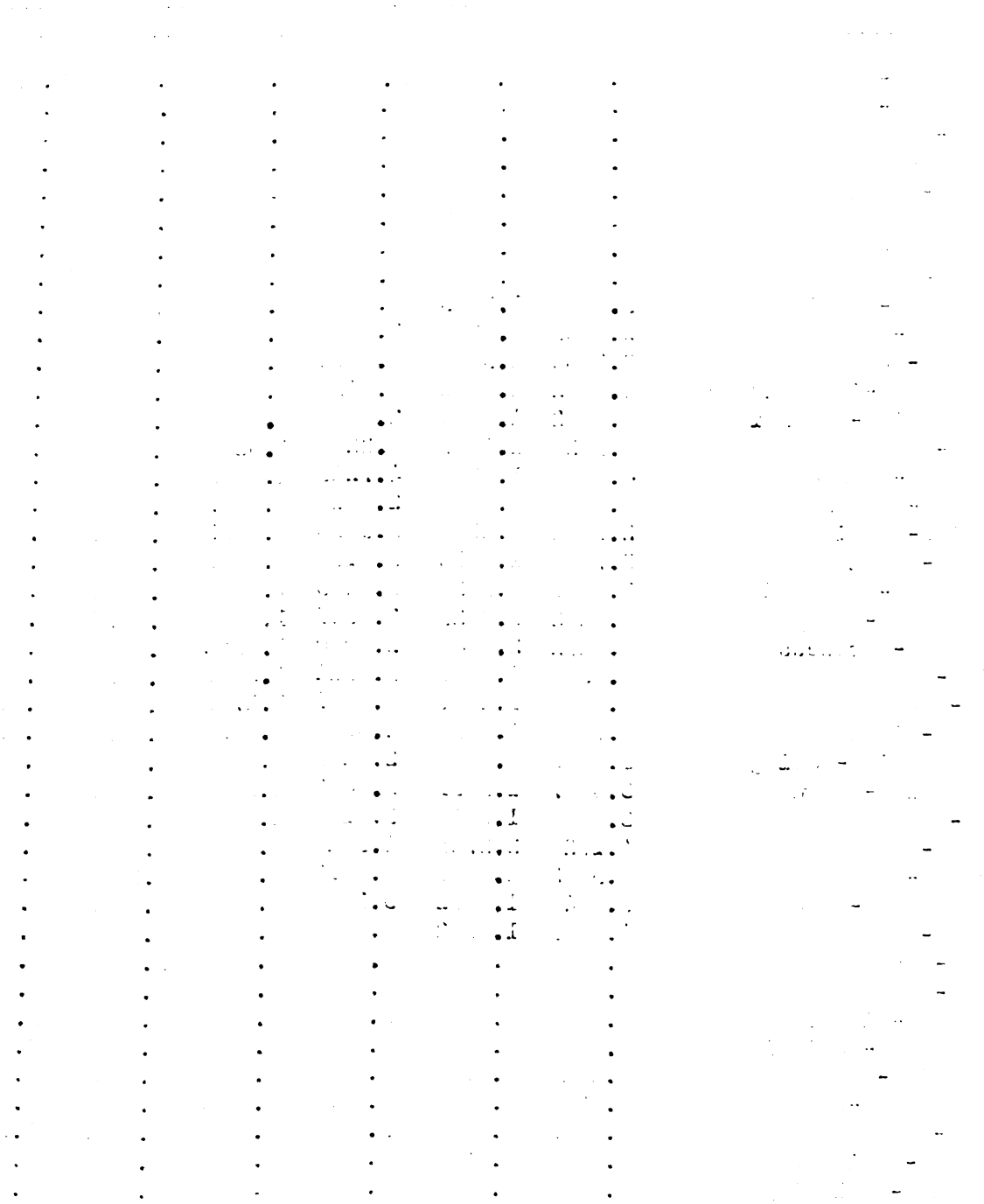
ENGINE

Scales	Closed Group Mean	Closed Group SD	Open Group Mean	Open Group SD	Medium Group Mean	Medium Group SD
colorful-colorless	4.0617	1.9521	3.7088	1.6925	3.5678	1.7911
youthful-mature	4.1851	1.4496	4.4810	1.4743	3.9506	1.6843
good-bad	2.0493	1.2948	2.0506	1.3207	2.0617	1.5343
stable-changeable	4.6049	2.0286	4.4050	2.1495	4.5555	2.1716
large-small	2.5678	1.4984	2.7848	1.2894	2.4197	1.3954
excitable-calm	3.0740	1.4553	3.0379	1.5946	2.8271	1.6008
straight-curved	4.0246	1.8255	4.1392	1.6283	4.1111	1.8592
loyal-disloyal	3.3333	1.4907	3.2025	1.2963	3.0123	1.2017
heavenly-hellish	4.1234	1.2705	4.0886	1.2241	4.1481	1.2081
unusual-usual	4.5308	1.8664	4.8734	1.8783	4.7901	1.7758
strong-weak	1.9012	1.3389	1.8480	1.0564	1.8518	1.3618
sensitive-insensitive	3.3580	2.0325	3.8480	2.0131	3.6666	2.1198
aggressive-defensive	3.1975	1.3915	2.8987	1.4284	2.9259	1.4805
fast-slow	2.3456	1.5647	2.1518	1.3602	1.6913	.8977
angular-rounded	3.7777	1.4401	3.8227	1.7557	3.8888	1.6703
severe-lenient	3.4444	1.1111	3.3797	1.1058	3.3333	1.2069
active-passive	2.0493	1.3324	2.1518	1.2333	2.1975	1.4091
sober-drunk	3.3580	1.3453	3.5316	.9915	3.5555	.9813
advanced-retarded	2.4197	1.2944	2.4936	1.3108	2.3827	1.2127
refreshed-weary	3.6296	1.4861	3.6455	1.5429	3.4320	1.3046
careful-careless	2.8765	1.5021	3.3164	1.5552	2.9753	1.3786
kind-cruel	3.5308	1.2965	3.6202	1.1832	3.3580	1.1895
new-old	4.2716	1.7142	4.0506	1.6140	3.6666	1.6850
heavy-light	1.9629	1.1909	2.4303	1.2895	2.3580	1.3636
interesting-boring	2.5678	1.6249	2.6708	1.5889	2.4691	1.4996
propelled-drawn	2.9753	1.6252	2.6708	1.5238	2.8765	1.7024
hot-cold	2.7160	1.6271	2.8227	1.1774	2.7283	1.2071
sharp-blunt	4.0987	1.6071	4.2278	1.4664	3.9135	1.6569
savory-tasteless	4.1111	1.2765	4.2151	1.2393	3.6172	1.2329
unexpected-expected	4.5678	1.6475	4.5949	1.3266	4.5925	1.4209
clean-dirty	4.7283	1.6924	4.8227	1.5488	4.3209	1.6164
sane-insane	3.2716	1.3148	3.3924	1.1844	3.2222	1.0999
hard-soft	2.0246	1.1756	2.3544	1.2430	2.3333	1.3425
complex-simple	2.1111	1.2472	2.1392	1.4384	1.9506	1.2659
impelling-resisting	3.1234	1.5021	3.4936	1.5333	3.2962	1.4943
tingling-numb	3.7901	1.3852	3.8101	1.1700	3.7283	1.3518
boisterous-shy	3.1234	1.2705	3.3164	1.1751	3.0987	1.0611
fair-unfair	3.4691	1.1872	3.4810	1.0656	3.3580	1.0099
direct-indirect	2.7530	1.2225	2.9873	1.2974	2.9629	1.2216
leading-following	2.9629	1.6287	3.3291	1.4817	2.9259	1.5216



NIKITA KHRUSHCHEV

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	3.4938	2.1030	3.2278	1.9090	2.9629	2.0753
youthful-mature	5.9135	1.1987	5.5189	1.4914	5.5678	1.3961
good-bad	5.6172	1.3839	5.2025	1.4873	5.4814	1.2081
stable-changeable	5.5432	1.7641	5.0506	1.7422	5.6296	1.4353
large-small	1.8271	1.0633	2.2658	1.3567	1.9135	.9583
excitable-calm	2.0617	1.4172	2.3417	1.2915	2.0864	1.2491
straight-curved	4.6666	1.6101	4.6708	1.2800	4.6913	1.5205
loyal-disloyal	4.4691	2.0250	3.5316	1.9541	3.7777	1.9051
heavenly-hellish	5.7654	1.2983	5.1139	1.3593	5.4814	1.1233
unusual-usual	2.7283	1.6255	3.1518	1.5018	3.1234	1.5899
strong-weak	2.3580	1.5659	2.7974	1.6020	2.4814	1.4411
sensitive-insensitive	4.9382	1.7871	4.2151	1.7978	4.6049	1.8437
aggressive-defensive	2.2222	1.5234	2.7341	1.6741	2.5061	1.5081
fast-slow	2.9629	1.4861	3.2278	1.6144	3.0123	1.3004
angular-rounded	4.7901	1.5211	4.7215	1.5005	4.6543	1.5804
severe-lenient	1.8271	.8431	2.4810	1.1677	2.2098	1.1190
active-passive	2.1851	1.1343	2.5696	1.3933	2.4444	1.2957
sober-drunk	3.7654	1.7516	3.4177	1.7107	3.6419	1.5580
advanced-retarded	3.0617	1.5423	3.2405	1.5196	3.0864	1.5331
refreshed-weary	4.2222	1.3425	3.9367	1.3718	4.1975	1.3092
careful-careless	2.6172	2.0642	2.4050	1.6952	2.3827	1.7396
kind-cruel	5.7283	1.1760	5.2911	1.2237	5.4320	1.0992
new-old	6.0246	1.2666	5.8101	1.1700	5.9753	1.1756
heavy-light	1.7407	1.0156	1.8860	.8857	1.4938	.7556
interesting-boring	3.2098	2.1298	2.7215	1.7855	2.7530	1.6668
propelled-drawn	3.0987	1.5839	2.9493	1.5903	3.1357	1.6832
hot-cold	3.0740	1.8106	3.4177	1.7181	2.9629	1.6363
sharp-blunt	4.1728	2.2705	4.3417	2.1458	4.1234	2.0809
savory-tasteless	4.5802	1.6167	4.1392	1.5889	4.2345	1.5497
unexpected-expected	3.0740	1.7692	3.3924	1.7889	3.0493	1.7561
clean-dirty	4.6543	1.6342	4.1265	1.7015	3.9629	1.6438
sane-insane	4.1728	1.9167	3.2911	1.9301	3.7530	1.8494
hard-soft	2.1728	1.2648	2.7848	1.5644	2.4814	1.2968
complex-simple	2.4938	1.6111	2.4810	1.5659	2.2716	1.3878
impelling-resisting	4.2222	2.1314	4.2911	2.0385	3.7283	2.0000
tingling-numb	4.2716	1.5792	3.9240	1.4121	3.9629	1.3466
boisterous-shy	1.6296	.9355	1.5822	.8657	1.5432	.8469
fair-unfair	5.6913	1.4710	5.1392	1.4903	5.4197	1.3686
direct-indirect	4.0370	2.2246	4.0759	2.0914	3.6049	2.1296
leading-following	2.1604	1.5591	2.2531	1.5868	2.4567	1.8328



LEADERSHIP

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	2.1234	1.4434	2.1772	1.3478	2.0370	1.1379
youthful-mature	4.9012	2.0282	4.8480	1.9942	4.7530	2.0936
good-bad	1.7407	1.0514	1.8734	1.1731	1.6543	.8037
stable-changeable	4.2839	2.2675	4.2405	2.2737	4.6666	2.1487
large-small	2.9629	1.3917	3.3924	1.5378	3.0617	1.3908
excitable-calm	4.1234	1.7454	4.4810	1.9478	3.9753	2.1197
straight-curved	2.7283	1.2669	2.6708	1.3845	3.2222	1.3788
loyal-disloyal	1.6666	1.0183	2.1265	1.3441	1.8518	1.0670
heavenly-hellish	3.5678	1.3511	3.5822	1.1093	3.9012	1.2232
unusual-usual	4.7160	1.7301	4.4050	1.6877	4.4567	1.6333
strong-weak	1.5061	1.0076	1.8480	1.0918	1.6543	.9578
sensitive-insensitive	2.7901	1.5533	3.1139	1.5507	3.0246	1.7706
aggressive-defensive	2.8518	1.7715	2.8480	1.6694	2.5802	1.6395
fast-slow	2.8395	1.1271	2.8987	1.1428	3.0246	1.3875
angular-rounded	4.1851	1.1233	4.0379	1.0118	4.2716	1.0424
severe-lenient	3.7777	1.4989	3.7468	1.2474	3.4197	1.3134
active-passive	1.8765	1.0108	2.0886	1.0813	2.1357	1.2146
sober-drunk	2.5308	1.4579	2.5569	1.3939	2.6049	1.5530
advanced-retarded	1.8271	1.0633	2.1265	1.1839	1.9629	1.1049
refreshed-weary	2.6419	1.2202	2.7215	1.4046	2.7283	1.4402
careful-careless	1.8518	1.3527	2.1392	1.5322	1.9876	1.3379
kind-cruel	2.8024	1.3915	2.8734	1.3156	2.5678	1.1960
new-old	4.2345	1.9390	4.7974	1.6716	4.0246	1.8919
heavy-light	3.6790	1.4892	3.3924	1.2367	3.7283	1.2766
interesting-boring	2.3086	1.2731	2.3544	1.1910	2.2592	1.1306
propelled-drawn	2.7777	1.5791	2.9620	1.6338	2.9877	1.6442
hot-cold	3.4938	1.2385	3.4430	1.1985	3.2098	1.1937
sharp-blunt	3.3209	1.3683	3.5443	1.5161	3.5802	1.4475
savory-tasteless	3.1358	1.1304	3.3291	1.1877	3.0370	1.1594
unexpected-expected	5.2716	1.5556	4.8101	1.6541	5.0123	1.5673
clean-dirty	2.6049	1.2734	2.6708	1.2996	2.5678	1.1540
sane-insane	2.2839	1.3809	2.4177	1.4285	2.0493	1.1642
hard-soft	3.5432	1.4405	3.1645	1.2571	3.4197	1.1744
complex-simple	2.4691	1.4996	2.6329	1.4684	2.2469	1.1279
impelling-resisting	2.7160	1.3262	2.9620	1.4707	2.9506	1.5226
tingling-numb	3.4197	1.1744	3.4430	1.0643	3.3086	1.1182
boisterous-shy	2.9876	1.1165	3.3037	1.2049	3.0123	1.0598
fair-unfair	2.4074	1.2250	2.5189	1.3674	2.2592	1.1523
direct-indirect	2.3086	1.2923	2.7088	1.6850	2.3209	1.2651
leading-following	1.7777	1.4229	1.8354	1.2571	1.5678	1.1646

MODERN ART

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	2.9506	2.1192	2.5696	1.9336	2.6172	1.7886
youthful-mature	2.9629	1.5511	2.9113	1.5846	2.8148	1.5404
good-bad	3.9876	1.7462	3.4430	1.7628	3.6296	1.5669
stable-changeable	5.8765	1.1903	5.8227	1.2504	5.8271	1.1308
large-small	3.6543	1.2972	3.6202	1.3053	3.4691	1.1448
excitable-calm	3.2716	1.6025	2.9999	1.4320	2.9876	1.3743
straight-curved	4.1358	1.5051	4.3164	1.4279	4.2469	1.4868
loyal-disloyal	4.1481	1.0670	4.1265	.9983	3.9259	.6809
heavenly-hellish	4.3950	1.3487	4.1898	1.1371	4.2839	1.0568
unusual-usual	1.9382	1.1583	2.2278	1.2624	2.3333	1.3146
strong-weak	3.8765	1.5899	3.5696	1.4899	3.6913	1.4198
sensitive-insensitive	3.7654	1.7088	3.5949	1.5872	3.6543	1.7296
aggressive-defensive	3.5555	1.3052	3.5316	1.3104	3.3086	1.2633
fast-slow	3.4197	1.2458	3.2531	1.2372	3.3209	1.1202
angular-rounded	3.5432	1.3057	3.6582	1.4221	3.5802	1.2655
severe-lenient	3.5802	1.3776	3.2658	1.0398	3.2716	1.1760
active-passive	3.2592	1.3125	3.1012	1.4547	3.1975	1.3372
sober-drunk	4.6172	1.5199	4.3037	1.5537	4.5925	1.1629
advanced-retarded	3.6296	1.7245	3.6202	1.6481	3.5308	1.4494
refreshed-weary	3.6419	1.5737	3.4430	1.4208	3.2962	1.3917
careful-careless	5.4197	1.6693	4.6708	1.9727	4.8148	1.9058
kind-cruel	4.3456	1.2288	4.1898	1.3319	4.1481	1.1665
new-old	2.0370	1.4609	1.9999	1.4840	1.7160	.9327
heavy-light	4.4691	1.9694	4.4683	1.9476	4.6296	1.7529
interesting-boring	3.9135	2.3737	3.5316	2.2938	3.6419	2.3794
propelled-drawn	3.6790	1.6911	3.6455	1.8213	4.0246	1.7139
hot-cold	4.4444	1.4656	4.0632	1.5289	3.9135	1.5491
sharp-blunt	4.0123	1.9531	3.8734	1.9183	3.3086	1.7259
savory-tasteless	4.5061	1.8400	4.0886	1.9693	4.1481	1.9945
unexpected-expected	2.5802	1.6167	2.4177	1.5800	2.5555	1.5947
clean-dirty	3.8271	1.4554	3.4810	1.4039	3.3827	1.3749
sane-insane	4.8395	1.5352	4.2278	1.4836	4.1851	1.8129
hard-soft	3.6049	1.5530	3.4556	1.1228	3.6913	1.2827
complex-simple	2.4320	1.7280	2.4430	1.8876	2.7160	1.9001
impelling-resisting	3.9999	1.6777	3.5063	1.7053	3.4320	1.4223
tingling-numb	3.9999	1.7284	3.6835	1.5471	3.3827	1.3385
boisterous-shy	3.9999	.0000	3.9746	.2743	3.9506	.3478
fair-unfair	4.2222	1.1546	3.6835	1.4011	3.6543	1.0559
direct-indirect	5.1234	1.6207	5.2278	1.7353	5.0740	1.5617
leading-following	3.8271	1.4123	3.4177	1.6038	3.1975	1.3279

HOSPITAL

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	3.3209	1.9865	3.5189	1.9672	3.3703	1.9337
youthful-mature	4.2839	1.7794	4.5443	1.6519	4.4938	1.6786
good-bad	1.6172	1.0490	1.8354	1.1630	1.6913	1.1400
stable-changeable	3.4074	2.1127	3.0506	1.8684	3.2222	1.9876
large-small	2.1481	1.2182	2.2784	1.2920	2.1481	1.0436
excitable-calm	3.8641	1.9673	3.9873	1.9648	4.0987	2.0763
straight-curved	3.0123	1.3832	3.0759	1.2606	3.0617	1.2506
loyal-disloyal	2.3703	1.2216	2.4683	1.3579	2.2345	1.1029
heavenly-hellish	2.6666	1.2472	3.2151	1.4554	2.8148	1.2483
unusual-usual	5.3086	1.6226	4.8354	1.7819	5.1851	1.6563
strong-weak	2.3950	1.3849	2.6329	1.5765	2.6172	1.4788
sensitive-insensitive	2.7654	1.3990	2.9873	1.4797	2.8765	1.5265
aggressive-defensive	4.1357	1.7123	4.0506	1.6527	3.9259	1.5378
fast-slow	3.0493	1.3043	3.1645	1.4706	3.1728	1.2745
angular-rounded	4.0123	1.1275	3.7215	1.1793	3.7283	1.1760
severe-lenient	4.3456	1.5959	3.8354	1.6259	4.0864	1.3895
active-passive	2.3950	1.2637	2.5569	1.5323	2.6049	1.4201
sober-drunk	2.6172	1.4450	2.5949	1.3549	2.7160	1.4843
advanced-retarded	2.0987	1.3931	2.4936	1.5250	2.1975	1.3372
refreshed-weary	2.7654	1.4595	3.3670	1.6548	3.2716	1.6330
careful-careless	1.6913	1.3666	1.6708	1.2088	1.4567	.7864
kind-cruel	1.8024	1.2997	1.8354	1.2368	1.6543	.8911
new-old	3.7654	1.9390	3.4303	1.7979	3.2839	1.9828
heavy-light	4.1357	1.4803	4.3544	1.4499	4.0493	1.5226
interesting-boring	2.3086	1.7330	2.0632	1.4438	2.0987	1.4538
propelled-drawn	2.9753	1.6176	3.1645	1.7020	3.2962	1.7101
hot-cold	3.6790	1.1740	3.6455	1.3410	3.3456	1.5328
sharp-blunt	2.9876	1.4529	3.5443	1.4124	3.1604	1.4695
savory-tasteless	3.6296	1.3094	3.8227	1.3849	3.4074	1.4122
unexpected-expected	4.4074	1.9924	4.2531	1.9124	4.1481	1.8533
clean-dirty	1.2222	.7027	1.4050	1.0002	1.1851	.7219
sane-insane	2.1481	1.4411	2.4430	1.5970	2.2592	1.6161
hard-soft	4.6790	1.7343	4.1772	1.5406	4.5308	1.6486
complex-simple	1.7407	1.1415	1.6835	1.0737	1.6913	1.0380
impelling-resisting	3.4938	1.5723	3.4936	1.4220	3.5925	1.5696
tingling-numb	3.5678	1.4481	3.5569	1.4119	3.3950	1.4287
boisterous-shy	4.0864	1.0908	3.9367	1.2359	3.9135	1.0327
fair-unfair	2.5185	1.3708	2.3670	1.4158	2.3209	1.2941
direct-indirect	2.9135	1.4503	2.6455	1.3782	2.6913	1.5367
leading-following	2.7654	1.5337	2.9113	1.6853	2.8765	1.6207

ME

Scales	Closed Group Mean	Closed Group SD	Open Group Mean	Open Group SD	Medium Group Mean	Medium Group SD
colorful-colorless	2.7777	1.1758	2.7341	1.0026	2.9753	1.1756
youthful-mature	3.2839	1.9195	3.2278	1.9090	3.0123	1.8888
good-bad	2.7037	1.1379	2.9999	1.2629	2.7530	1.2123
stable-changeable	4.9012	1.9411	5.0886	1.6853	5.4320	1.5066
large-small	3.6790	1.4892	3.9493	1.7203	4.0246	1.6478
excitable-calm	3.1728	1.7832	3.5189	1.8061	3.2098	1.6903
straight-curved	3.4074	1.6237	3.5822	1.5959	3.5308	1.4831
loyal-disloyal	1.9999	1.1439	2.0506	1.0661	2.1357	.9263
heavenly-hellish	3.8641	1.3310	3.9873	1.2169	3.9999	1.1863
unusual-usual	3.9012	1.7750	3.8987	1.7688	4.1357	1.6759
strong-weak	3.1234	1.3276	3.1392	1.3286	2.9999	1.2862
sensitive-insensitive	2.4197	1.5624	2.5189	1.4483	2.1604	1.1161
aggressive-defensive	3.7407	1.7197	4.0886	1.6396	3.2716	1.5316
fast-slow	3.4074	1.5378	3.1012	1.3177	2.7777	1.1331
angular-rounded	4.3703	1.2417	4.1898	1.3224	4.3580	1.2403
severe-lenient	4.9753	1.4822	4.8227	1.4820	4.6666	1.5555
active-passive	2.4567	1.2962	2.3670	1.1043	2.3950	1.3487
sober-drunk	2.2592	1.5378	2.6329	1.6317	2.4074	1.5537
advanced-retarded	2.6049	.9119	2.4936	.9529	2.4197	.9540
refreshed-weary	3.0493	1.5145	2.8101	1.4414	3.0617	1.5974
careful-careless	2.6790	1.4557	3.2025	1.3996	3.0246	1.4905
kind-cruel	2.5432	1.1116	2.4683	.9391	2.4567	1.0309
new-old	2.6790	1.0752	2.9367	1.1176	2.5925	.9132
heavy-light	4.4567	1.4146	4.2911	1.4509	4.4691	1.4914
interesting-boring	2.7160	1.0090	2.8607	1.0029	2.7530	.9879
propelled-drawn	3.3209	1.4214	3.5063	1.2815	3.2469	1.3196
hot-cold	3.0864	1.0909	3.4556	.8685	3.1728	1.0035
sharp-blunt	3.7530	1.5676	3.7341	1.2799	3.5802	1.4895
savory-tasteless	3.0493	1.1643	3.2151	.9765	3.1975	.9865
unexpected-expected	3.8641	1.8509	3.4430	1.3756	3.5061	1.4065
clean-dirty	1.8765	1.0701	2.1392	1.1444	1.9506	1.1320
sane-insane	1.6296	.9486	2.0379	1.1847	1.8148	1.0196
hard-soft	4.7901	1.4716	4.4683	1.2910	4.6172	1.3659
complex-simple	2.9135	1.6569	2.8860	1.3869	2.6790	1.3683
impelling-resisting	3.9876	1.5274	3.8227	1.2300	3.6913	1.3484
tingling-numb	3.3580	1.1579	3.2531	1.0490	3.2098	1.1516
boisterous-shy	4.1234	1.4519	3.8734	1.3721	3.6049	1.4201
fair-unfair	2.3333	1.0999	2.3670	1.1382	2.2592	.9399
direct-indirect	2.7037	1.4353	2.9999	1.2629	2.6790	1.2845
leading-following	3.4074	1.4468	3.5822	1.2985	3.3333	1.3966

PRISON

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	5.4691	1.8263	4.9746	2.0436	5.5432	1.5638
youthful-mature	4.9135	1.5571	4.8354	1.5785	4.9382	1.5423
good-bad	5.1728	1.6981	4.7974	1.7016	4.8888	1.6329
stable-changeable	3.6172	1.8893	3.8227	1.9010	3.6296	1.8151
large-small	2.2098	1.2930	2.3797	1.2044	2.4444	1.3333
excitable-calm	3.8888	1.5153	3.6835	1.6804	4.1728	1.6613
straight-curved	3.7160	1.4162	3.3797	1.1939	3.3333	1.2570
loyal-disloyal	4.3703	1.4943	4.0886	1.5110	4.2962	1.3281
heavenly-hellish	5.5185	1.2283	5.0886	1.3330	5.3333	1.0999
unusual-usual	4.4320	1.7208	4.3417	1.7054	4.5925	1.6237
strong-weak	2.7283	1.5635	2.8734	1.7015	2.6172	1.3749
sensitive-insensitive	4.7407	1.7268	4.3417	1.7202	4.7407	1.6388
aggressive-defensive	4.6419	1.5178	4.6202	1.6093	4.5185	1.6413
fast-slow	4.2839	1.2884	4.1012	1.4634	4.3827	1.2429
angular-rounded	3.9259	1.1735	3.6455	1.1255	3.7160	1.1678
severe-lenient	2.7037	1.3917	2.4936	1.1678	2.4938	1.1344
active-passive	3.8148	1.6488	3.2658	1.6125	3.8765	1.5346
sober-drunk	3.9012	1.6450	3.5063	1.5416	3.4691	1.1975
advanced-retarded	4.1975	1.4941	4.2025	1.6410	4.1975	1.4351
refreshed-weary	4.9629	1.3466	4.6455	1.2532	5.0246	1.2763
careful-careless	3.8765	2.3221	3.6455	2.2447	3.7777	2.1773
kind-cruel	5.5555	1.3240	5.3291	1.2996	5.7777	1.0999
new-old	5.6296	1.4439	5.5949	1.3170	5.9876	1.1810
heavy-light	2.4197	1.3595	2.3924	1.2570	2.4197	1.3134
interesting-boring	4.4320	2.1769	3.9999	2.1699	4.1851	2.0252
propelled-drawn	4.3456	1.7296	4.5822	1.6195	4.4567	1.6633
hot-cold	4.3703	1.9209	4.1518	1.8147	3.9629	1.8083
sharp-blunt	4.7037	1.7173	5.0759	1.6594	4.8641	1.7338
savory-tasteless	5.4814	1.3527	5.3164	1.2979	5.2716	1.2473
unexpected-expected	4.7160	1.7301	4.7721	1.7133	4.3086	1.7330
clean-dirty	5.1357	1.7550	4.6202	1.6558	5.2222	1.3698
sane-insane	4.7283	1.4741	4.4303	1.6123	4.4691	1.5078
hard-soft	2.2839	1.2788	2.2531	1.0846	2.2222	1.0540
complex-simple	3.5678	1.8852	3.3797	1.9636	3.7777	1.8986
impelling-resisting	4.0370	1.8688	4.3544	1.9747	4.2098	1.8102
tingling-numb	4.9259	1.4382	4.6329	1.3329	4.7283	1.3147
boisterous-shy	3.4814	1.3618	3.3037	1.4351	3.5185	1.2679
fair-unfair	3.9382	1.7309	3.8354	1.8031	3.7777	1.6703
direct-indirect	3.0123	1.5112	3.0379	1.6721	3.2469	1.4013
leading-following	4.1728	1.7269	4.1898	1.7435	3.9135	1.4757

JOHN F. KENNEDY

Scales	Closed Group Mean	Closed Group SD	Open Group Mean	Open Group SD	Medium Group Mean	Medium Group SD
colorful-colorless	1.9753	1.2859	2.0759	1.3666	2.1975	1.2709
youthful-mature	3.6790	2.0295	3.7848	2.1739	3.5555	2.2110
good-bad	2.3827	1.4704	2.2911	1.3884	2.4320	1.3419
stable-changeable	3.7160	1.9260	3.4177	1.9265	3.7160	1.8137
large-small	3.4444	1.2765	3.4683	1.1565	3.2345	1.0803
excitable-calm	5.0740	1.4971	4.8101	1.6617	4.8641	1.5295
straight-curved	2.9135	1.4757	2.8227	1.4990	3.0370	1.3828
loyal-disloyal	1.8024	1.3186	1.6455	1.0795	1.7530	1.0946
heavenly-hellish	3.6543	1.2972	3.6202	1.0225	3.7283	.9688
unusual-usual	3.4691	1.7362	3.7468	1.9321	3.8271	1.5853
strong-weak	2.0740	1.3768	2.3670	1.5604	2.3456	1.2586
sensitive-insensitive	3.0987	1.4791	3.0759	1.5813	3.0987	1.3389
aggressive-defensive	3.5802	1.9427	3.4430	1.8193	3.3827	1.8295
fast-slow	2.6543	1.4329	2.7088	1.4596	2.9382	1.4516
angular-rounded	3.9259	1.2646	3.8860	1.3960	3.7654	1.1251
severe-lenient	3.9876	1.3921	4.2405	1.5525	4.3086	1.4541
active-passive	2.2469	1.3836	2.1265	1.3441	2.3209	1.3683
sober-drunk	2.1975	1.4775	2.1645	1.4000	2.4444	1.5234
advanced-retarded	2.0617	1.3457	1.9240	1.1882	1.9012	1.2433
refreshed-weary	3.1851	1.7854	2.8480	1.5351	3.0370	1.6058
careful-careless	1.9506	1.2462	1.9873	1.0965	2.3086	1.5997
kind-cruel	2.2592	1.0974	2.2405	1.0933	2.2962	1.0936
new-old	2.6913	1.3845	2.8480	1.4327	2.4074	1.2744
heavy-light	4.2345	1.2695	4.2405	1.2947	4.1357	1.3029
interesting-boring	2.0740	1.2548	1.9493	.9399	2.2592	1.4971
propelled-drawn	2.8148	1.5243	2.8607	1.4384	2.9999	1.7141
hot-cold	3.3456	1.1239	3.4050	1.1640	3.4567	1.1227
sharp-blunt	3.6296	1.7316	3.7848	1.4554	3.6419	1.5893
savory-tasteless	3.0123	1.3099	3.1772	1.3193	3.0864	1.3071
unexpected-expected	4.0617	1.6128	4.1139	1.4839	4.1604	1.5512
clean-dirty	1.9876	1.2422	2.0253	1.2010	2.0617	1.2506
sane-insane	1.8518	1.1875	1.6708	1.0028	1.7160	1.1247
hard-soft	4.0740	1.4209	3.7848	1.4112	3.7654	1.4510
complex-simple	2.3703	1.4943	2.3291	1.3093	2.5308	1.3706
impelling-resisting	3.3086	1.7115	3.3037	1.5124	3.2716	1.5397
tingling-numb	3.1851	1.0785	3.3291	1.0520	3.2592	1.0631
boisterous-shy	3.4938	1.1666	3.3797	1.1832	3.2469	1.1709
fair-unfair	2.1234	1.1903	2.2151	1.1547	2.3333	1.3146
direct-indirect	2.4691	1.5322	2.4936	1.4308	2.3950	1.3487
leading-following	1.7654	1.2097	2.0506	1.4133	2.0740	1.4971

SYMPHONY

Scales	Closed Group Mean	Closed Group SD	Open Group Mean	Open Group SD	Medium Group Mean	Medium Group SD
colorful-colorless	2.5308	1.8927	2.2658	1.6436	2.4320	1.5787
youthful-mature	4.3086	2.0284	4.1772	1.8539	4.2592	1.8972
good-bad	2.2962	1.4353	2.5443	1.4478	2.2839	1.2195
stable-changeable	4.2839	1.9001	4.5822	1.8867	4.3333	1.7777
large-small	2.1728	1.1524	2.4050	1.2275	2.1111	1.0183
excitable-calm	2.9506	1.7134	2.7594	1.6086	2.8765	1.6805
straight-curved	3.5185	1.4238	3.7088	1.2543	3.7901	1.4377
loyal-disloyal	3.0246	1.3144	3.2784	1.2420	3.2222	1.2472
heavenly-hellish	2.8271	1.3127	3.2658	1.2799	2.8024	1.2314
unusual-usual	4.3703	1.7739	3.9620	1.5946	4.2839	1.7086
strong-weak	2.8271	1.3498	3.0253	1.4050	2.7777	1.2570
sensitive-insensitive	2.7160	1.5414	2.6202	1.1939	2.5185	1.2581
aggressive-defensive	3.6419	1.4342	3.5569	1.2999	3.3209	1.2052
fast-slow	3.6049	1.4797	3.4556	1.3004	3.4074	1.3125
angular-rounded	4.1481	1.2968	3.9873	1.0965	4.1234	1.0349
severe-lenient	4.0987	1.2131	4.1139	1.0310	4.1111	1.1546
active-passive	2.8148	1.5162	2.6075	1.2056	2.6790	1.2845
sober-drunk	3.3086	1.4626	3.1645	1.3634	3.2345	1.2399
advanced-retarded	2.8765	1.5585	2.9999	1.4495	2.6172	1.3569
refreshed-weary	2.7283	1.6102	3.0506	1.5335	2.7901	1.3941
careful-careless	2.5678	1.7208	2.2531	1.5627	2.4320	1.5708
kind-cruel	2.9999	1.4054	2.8480	1.3602	2.6790	1.1949
new-old	4.9135	1.9257	4.6329	1.9302	4.8148	1.7785
heavy-light	3.9876	.4004	3.8987	.5178	3.9259	.4655
interesting-boring	2.7901	1.8837	2.7721	1.9483	3.1111	2.0667
propelled-drawn	3.6049	1.6381	3.4303	1.6044	3.7901	1.8573
hot-cold	3.8641	1.2644	3.7974	1.2766	3.4814	1.3157
sharp-blunt	3.3209	1.4642	3.2405	1.5196	3.2469	1.4532
savory-tasteless	3.2345	1.5813	2.9620	1.6492	3.0370	1.6956
unexpected-expected	4.1111	1.6923	4.1898	1.7865	4.1357	1.5535
clean-dirty	2.7407	1.1735	2.6582	1.1679	2.5061	1.2680
sane-insane	3.1851	1.4411	2.8480	1.4763	2.6913	1.4023
hard-soft	4.6419	1.2502	4.3924	1.1629	4.4444	1.3240
complex-simple	2.0493	1.1853	1.7848	.9765	2.1111	1.3788
impelling-resisting	3.1234	1.5265	2.9240	1.4299	2.9506	1.4478
tingling-numb	2.7037	1.4093	2.6708	1.4817	2.5802	1.3134
boisterous-shy	3.3086	1.1508	3.2405	1.2346	3.1851	1.1123
fair-unfair	3.1358	1.0628	3.0379	1.2267	3.0370	1.1805
direct-indirect	3.2345	1.3265	3.1898	1.5101	3.2592	1.5774
leading-following	3.7407	1.7197	3.2911	1.6470	3.0370	1.4609

DEATH

Scales	Closed Group Mean	Closed Group SD	Open Group Mean	Open Group SD	Medium Group Mean	Medium Group SD
colorful-colorless	5.3209	1.8779	4.8860	1.8622	5.2222	1.9436
youthful-mature	5.6913	1.1826	5.2278	1.3402	5.2098	1.3025
good-bad	4.6790	1.7200	4.3544	1.8283	4.8395	1.5591
stable-changeable	3.2592	1.9101	3.0253	1.8891	3.5678	1.8320
large-small	3.4074	1.3768	3.2658	1.0990	3.3086	1.1615
excitable-calm	3.9753	1.7914	4.2025	1.7384	4.2098	1.6976
straight-curved	3.5432	1.3057	3.4303	1.0871	3.5061	1.1771
loyal-disloyal	3.7901	1.1408	3.6582	1.1894	3.7901	1.2930
heavenly-hellish	3.9999	1.6555	3.7341	1.4985	3.9135	1.4246
unusual-usual	5.4567	1.7711	5.3291	1.8468	5.2098	1.8034
strong-weak	3.7407	1.7053	3.3924	1.6023	3.4691	1.6561
sensitive-insensitive	3.9753	1.9371	3.5063	1.7851	3.6296	2.0272
aggressive-defensive	3.4691	1.5641	3.6329	1.4423	3.5555	1.2957
fast-slow	3.7530	1.4616	3.8480	1.3879	3.9259	1.3768
angular-rounded	3.9753	1.0058	3.9999	1.0311	4.0246	1.0058
severe-lenient	2.7530	1.3289	2.9113	1.2648	3.1234	1.2608
active-passive	4.2469	1.7251	3.9240	1.6594	4.1111	1.5947
sober-drunk	3.0617	1.3908	2.9493	1.2518	3.0987	1.1822
advanced-retarded	3.9629	1.3094	3.7594	1.2550	4.0740	1.1840
refreshed-weary	5.0246	1.4485	4.3291	1.3285	4.7901	1.4966
careful-careless	4.5678	1.8253	4.3037	1.9116	4.1481	1.8863
kind-cruel	4.9259	1.8444	4.6202	1.8913	4.8395	1.8422
new-old	6.1604	1.3558	5.9999	1.4582	6.0123	1.4529
heavy-light	2.5432	1.4233	2.7848	1.7038	2.6419	1.6277
interesting-boring	3.4567	1.7919	3.2405	1.6628	3.2098	1.4377
propelled-drawn	4.1975	1.7456	4.3037	1.8166	4.0370	1.8421
hot-cold	5.1481	1.7576	4.7974	1.7957	5.3333	1.4487
sharp-blunt	4.7777	2.0184	4.5696	1.9072	4.1728	1.9612
savory-tasteless	5.0987	1.7256	4.7468	1.5627	4.8271	1.4806
unexpected-expected	3.1975	2.4566	3.3417	2.3807	3.9382	2.3640
clean-dirty	4.0987	1.5283	3.4556	1.5077	4.0493	1.4045
sane-insane	3.7901	1.2834	3.4430	1.4647	3.3456	1.3531
hard-soft	2.5925	1.5053	3.2151	1.6662	2.7530	1.3289
complex-simple	3.0370	2.1107	3.4050	2.1377	3.4074	1.9924
impelling-resisting	3.9012	2.0037	3.7974	1.9833	3.9382	1.8280
tingling-numb	4.9259	1.6084	4.8227	1.5971	4.8888	1.6629
boisterous-shy	4.1357	1.5850	4.2658	1.2995	4.3209	1.4214
fair-unfair	4.4814	1.9252	3.7088	1.8970	4.0370	1.9144
direct-indirect	3.0987	1.6821	2.7341	1.6359	3.1975	1.7027
leading-following	3.8395	1.8886	4.0126	1.8106	4.2222	1.7708

SNOW

Scales	Closed Group Mean	Closed Group SD	Open Group Mean	Open Group SD	Medium Group Mean	Medium Group SD
colorful-colorless	2.7654	2.2014	2.5569	2.0912	2.4938	1.9380
youthful-mature	2.4197	1.3865	2.1265	1.3721	2.2839	1.4075
good-bad	2.7283	1.5948	2.7341	1.4116	2.5802	1.4475
stable-changeable	5.7407	1.3405	5.5316	1.6291	5.5432	1.3970
large-small	4.2469	1.8494	3.8354	1.4000	3.5925	1.5930
excitable-calm	3.7407	1.9358	3.4303	1.8189	3.3827	1.7817
straight-curved	3.9135	1.5169	4.1265	1.4872	4.2592	1.5852
loyal-disloyal	3.8024	1.3279	3.6329	1.0812	3.7283	.8890
heavenly-hellish	2.8888	1.6703	2.9240	1.4031	2.5925	1.2646
unusual-usual	4.8888	1.9051	4.4810	1.7991	4.4444	1.6923
strong-weak	3.3950	1.4374	3.6835	1.4279	3.5678	1.5066
sensitive-insensitive	3.5061	1.4834	3.4303	1.4899	3.3333	1.5234
aggressive-defensive	3.5925	1.3678	3.3670	1.3887	3.6543	1.4329
fast-slow	3.7407	1.5297	3.5569	1.6206	3.5308	1.5562
angular-rounded	4.1604	1.6364	4.1392	1.3754	4.2592	1.6907
severe-lenient	3.3950	1.4544	3.2784	1.2215	3.3456	1.3348
active-passive	3.3580	1.7163	2.9367	1.4172	3.2592	1.6161
sober-drunk	3.6790	1.1202	3.6708	.8674	3.5925	1.2450
advanced-retarded	3.8271	1.0398	3.6962	.8766	3.8395	1.2418
refreshed-weary	2.5678	1.5471	2.6962	1.4084	2.4814	1.3708
careful-careless	4.3456	1.4837	4.1265	1.6715	4.3086	1.4541
kind-cruel	3.7283	1.6630	3.6329	1.5358	3.5185	1.3708
new-old	3.4444	2.1081	3.3291	1.9855	3.5185	1.8797
heavy-light	5.1234	1.9650	5.3037	1.8235	4.8888	1.8392
interesting-boring	2.2222	1.0540	2.4936	1.3767	2.3456	1.0791
propelled-drawn	3.8271	1.5853	3.5569	1.5323	3.6543	1.3255
hot-cold	6.5432	.9302	6.1898	1.1259	6.5185	.9042
sharp-blunt	3.9012	1.6525	4.0253	1.5259	3.8888	1.5555
savory-tasteless	4.0987	1.7469	3.7848	1.5150	4.0246	1.6775
unexpected-expected	4.5432	1.6707	4.0632	1.7742	4.1851	1.6711
clean-dirty	1.9382	1.3085	2.0759	1.1988	2.0370	1.3828
sane-insane	3.1358	1.2546	3.4556	1.2096	3.4197	1.1744
hard-soft	6.1357	1.2146	5.8987	1.2788	6.0246	1.0769
complex-simple	4.1604	2.0932	4.0126	1.6875	3.9753	1.7496
impelling-resisting	3.4567	1.4993	3.8101	1.3319	3.7037	1.2808
tingling-numb	3.2592	1.6761	3.3544	1.6229	3.3333	1.6629
boisterous-shy	4.1604	1.4440	4.2278	1.1577	3.9753	1.1544
fair-unfair	3.7160	1.1356	3.6075	1.2264	3.5432	.9944
direct-indirect	3.4938	1.4582	3.4177	1.1757	3.2962	1.1909
leading-following	4.1728	1.3313	4.1265	1.1731	3.8518	1.2182

COMMUNIST CHINA

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	4.4814	2.1436	3.8101	1.8628	4.0987	2.2311
youthful-mature	4.3950	1.8965	3.9620	1.6872	3.9999	1.8189
good-bad	6.1481	.9177	5.6075	1.1737	6.0370	1.0708
stable-changeable	5.6913	1.4794	5.4556	1.3760	5.6666	1.4907
large-small	1.4814	.7715	2.0126	.2678	1.4320	.8740
excitable-calm	1.9506	1.1428	2.5443	1.3852	2.3950	1.4374
straight-curved	4.2839	1.5965	4.3291	1.3285	4.4074	1.4468
loyal-disloyal	5.4444	1.3698	4.5949	1.6421	5.2098	1.3763
heavenly-hellish	5.9012	1.0955	5.2025	1.2865	5.7530	1.1169
unusual-usual	2.7407	1.4468	3.3037	1.5373	3.4567	1.5399
strong-weak	3.1481	1.9443	3.1139	1.6303	3.0246	1.7636
sensitive-insensitive	5.0123	1.6291	4.5696	1.8189	4.9876	1.7881
aggressive-defensive	2.3209	1.7056	2.5063	1.6059	2.5678	1.7136
fast-slow	3.5925	1.7900	3.6708	1.5809	3.5678	1.6772
angular-rounded	3.8148	1.3343	3.6455	1.1367	3.6913	1.1826
severe-lenient	2.0246	1.0538	2.5189	1.2814	2.2098	1.0967
active-passive	2.6049	1.4114	2.6329	1.4598	2.6913	1.3018
sober-drunk	4.3209	1.6164	4.1645	1.3065	4.3703	1.2808
advanced-retarded	4.7777	1.5869	4.5189	1.2814	4.4320	1.5865
refreshed-weary	4.8024	1.4858	4.2151	1.2991	4.5925	1.3312
careful-careless	4.9382	2.2130	4.3164	2.0900	4.9259	1.9862
kind-cruel	6.4320	.8003	5.8987	1.0384	6.2098	.9390
new-old	4.7407	2.1703	4.2784	2.0247	4.8518	2.0554
heavy-light	2.3580	1.3816	2.8101	1.3414	2.5802	1.2557
interesting-boring	3.4197	1.9617	2.9873	1.7246	2.9382	1.8415
propelled-drawn	3.6913	2.1294	3.5569	1.7842	3.9259	1.9924
hot-cold	3.5432	1.9503	3.0886	1.6473	3.1234	1.8815
sharp-blunt	4.2222	1.9876	4.1012	1.9719	4.1111	1.9051
savory-tasteless	4.7530	1.5676	4.2405	1.5112	4.6419	1.4169
unexpected-expected	2.9259	1.6980	3.4683	1.9016	3.1604	1.7670
clean-dirty	6.0617	1.3085	5.5696	1.1327	5.7160	1.1247
sane-insane	5.7283	1.3053	4.8607	1.4296	5.0617	1.3548
hard-soft	2.0987	1.2727	2.4936	1.1999	2.5308	1.1556
complex-simple	2.6172	1.7537	2.8480	1.6845	2.8888	1.7284
impelling-resisting	3.9629	2.0272	3.8227	1.8607	3.8395	2.0635
tingling-numb	4.4567	1.5951	4.0632	1.4784	4.0370	1.3917
boisterous-shy	2.3580	1.4513	2.6075	1.4089	2.3456	1.2684
fair-unfair	6.1234	1.1153	5.5189	1.2615	5.8395	1.0710
direct-indirect	4.0370	2.0694	3.7215	1.8206	3.8641	1.7338
leading-following	3.8148	2.1029	4.1898	1.8764	4.2839	1.9451

BIRTH

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	1.6790	.9405	1.9493	1.3014	1.9629	1.4353
youthful-mature	1.5678	1.2266	1.7848	1.6043	1.4074	1.0156
good-bad	1.4938	1.0198	1.5949	1.2171	1.3086	.6410
stable-changeable	4.1357	2.1531	4.1898	2.0992	4.1728	2.1244
large-small	5.2345	1.7657	4.8354	1.9963	4.8518	2.0252
excitable-calm	2.1975	1.6361	2.3037	1.5040	2.1975	1.4859
straight-curved	4.0370	1.5351	3.7848	1.4812	4.0987	1.6600
loyal-disloyal	2.6543	1.3255	2.9113	1.3042	2.8024	1.2112
heavenly-hellish	1.8271	1.2251	2.1265	1.2665	1.8024	1.0234
unusual-usual	5.3333	1.9688	5.2911	2.0198	5.3827	1.9345
strong-weak	4.1481	2.0068	3.6962	1.9703	3.8888	1.9751
sensitive-insensitive	2.2222	1.4315	1.9873	1.0493	2.0617	1.2105
aggressive-defensive	3.9382	1.5262	4.0379	1.6182	3.9012	1.7184
fast-slow	4.7530	1.5358	4.4683	1.5576	4.2716	1.6704
angular-rounded	4.6913	1.2436	4.5696	1.1215	4.4444	1.2668
severe-lenient	4.0617	1.3819	3.8354	1.3727	3.7901	1.4377
active-passive	2.8148	1.5643	2.5063	1.3675	3.0246	1.6022
sober-drunk	2.9382	1.4084	3.0632	1.3153	2.9135	1.3258
advanced-retarded	3.5308	1.4663	3.2911	1.4938	3.1728	1.5379
refreshed-weary	3.6543	1.9636	3.2784	1.8067	3.2098	1.8573
careful-careless	2.3456	1.4415	2.6075	1.6870	2.3703	1.4353
kind-cruel	2.3209	1.4557	2.2784	1.3681	2.1111	1.1547
new-old	2.6790	2.3403	3.0759	2.3854	2.6543	2.2561
heavy-light	5.0987	1.6821	4.7721	1.7997	4.9382	1.6802
interesting-boring	1.8271	.9659	1.7594	.9575	1.8395	1.1488
propelled-drawn	3.5061	1.7078	3.4936	1.6829	3.4938	1.5801
hot-cold	3.0740	1.1523	3.3924	1.0484	3.1481	1.1233
sharp-blunt	3.4691	1.4149	3.7088	1.3975	3.6666	1.3425
savory-tasteless	3.0864	1.2089	3.1772	1.1557	3.1851	1.0670
unexpected-expected	5.7160	1.5091	5.5442	1.7195	5.5185	1.6563
clean-dirty	2.0246	1.4313	2.3037	1.4956	2.0987	1.2531
sane-insane	2.0370	1.2516	2.3164	1.4543	2.0987	1.2333
hard-soft	5.3950	1.9856	5.2405	1.7733	5.0617	1.7939
complex-simple	2.5925	1.9358	2.2531	1.5364	2.1234	1.3822
impelling-resisting	3.0987	1.4453	3.7468	1.4623	3.3209	1.5778
tingling-numb	2.8271	1.2937	3.0759	1.4475	2.9629	1.2012
boisterous-shy	4.0864	1.3983	4.0632	1.3249	3.7777	1.2272
fair-unfair	2.4444	1.3877	2.7088	1.3515	2.6049	1.2139
direct-indirect	2.5678	1.2366	2.9367	1.6407	2.5432	1.2074
leading-following	4.1111	1.6850	4.1518	1.3879	3.8641	1.5694

SIN

Scales	Closed Group Mean	Closed Group SD	Open Group Mean	Open Group SD	Medium Group Mean	Medium Group SD
colorful-colorless	4.2222	2.2277	3.6455	2.0747	3.7654	2.1214
youthful-mature	3.8518	1.7077	3.6329	1.3978	3.8271	1.5931
good-bad	6.4197	1.0407	5.6329	1.4770	6.0740	1.2047
stable-changeable	5.5555	1.6777	5.0632	1.6174	5.1604	1.7246
large-small	2.8641	1.4803	3.2151	1.3375	2.9876	1.2813
excitable-calm	2.5802	1.2944	2.9367	1.2562	2.8765	1.2994
straight-curved	4.2222	1.5234	4.1772	1.2902	3.8641	1.5133
loyal-disloyal	5.5678	1.3141	5.0126	1.3264	5.4814	1.3250
heavenly-hellish	6.1234	1.1372	5.3924	1.3909	5.5061	1.4834
unusual-usual	5.2098	1.6534	4.8860	1.5830	5.1728	1.6981
strong-weak	4.2839	2.0441	4.1645	1.7605	4.0123	1.9212
sensitive-insensitive	4.2962	1.8354	3.6708	1.4206	3.9259	1.6463
aggressive-defensive	3.5802	1.8977	3.6582	1.4745	3.3086	1.5685
fast-slow	2.8271	1.3313	3.1898	1.1259	3.1975	1.1591
angular-rounded	3.6790	1.1740	3.8354	1.1299	3.9012	1.0611
severe-lenient	2.4567	1.3245	2.8101	1.2933	2.6543	1.1017
active-passive	2.9012	1.6525	2.8354	1.3634	3.0617	1.4516
sober-drunk	4.8395	1.4778	4.3417	1.5498	4.6419	1.2795
advanced-retarded	4.2716	1.5396	4.0379	1.3066	3.9135	1.3165
refreshed-weary	4.7037	1.3738	3.9746	1.2825	4.0987	1.2232
careful-careless	5.9876	1.4185	5.9493	1.3952	6.0370	1.2808
kind-cruel	6.0246	1.2067	5.5569	1.2703	5.6790	1.4472
new-old	6.1481	1.2383	6.1012	1.2588	6.1975	1.2709
heavy-light	2.3950	1.3938	2.9240	1.3290	2.7037	1.3466
interesting-boring	3.5308	1.6031	3.0379	1.3820	2.7160	1.3447
propelled-drawn	3.8518	1.8863	3.7088	1.7148	4.0987	1.6300
hot-cold	3.2716	1.8526	3.0886	1.4512	2.7283	1.4402
sharp-blunt	3.7283	1.9814	3.6455	1.6538	3.6543	1.7224
savory-tasteless	4.4567	1.7781	3.9746	1.6836	3.6790	1.5541
unexpected-expected	4.7160	1.9260	4.3037	1.9703	4.6666	1.9309
clean-dirty	5.7530	1.2816	5.2784	1.3114	5.5678	1.4396
sane-insane	4.8024	1.4522	4.1645	1.5297	4.2222	1.6923
hard-soft	2.7037	1.3094	3.2278	1.1245	3.2839	1.2396
complex-simple	3.1851	1.8533	2.9999	1.5344	3.5185	1.8599
impelling-resisting	3.3456	1.9383	3.3670	1.7001	3.2469	1.8225
tingling-numb	3.8641	1.5295	3.6329	1.2342	3.4444	1.3240
boisterous-shy	3.1481	1.4496	3.4177	1.2789	3.4444	1.4401
fair-unfair	4.9753	1.5151	4.3291	1.4383	4.7407	1.3588
direct-indirect	3.4197	1.7698	3.7088	1.4682	3.7654	1.6649
leading-following	3.8518	1.7434	4.0253	1.7572	3.7530	1.4447

UNITED STATES

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	1.4444	.7370	1.5822	.9360	1.6419	1.1255
youthful-mature	3.0864	2.1897	3.1265	2.1427	3.2222	2.2607
good-bad	1.7901	1.0389	1.8860	1.1249	1.7777	1.1221
stable-changeable	4.1975	2.2300	4.3291	2.1858	4.1728	2.2921
large-small	1.7901	1.1079	1.7848	.9368	1.8148	1.0785
excitable-calm	2.9876	1.7812	3.3037	1.9248	2.9382	1.7021
straight-curved	2.7283	1.5714	3.4556	1.7269	3.5432	1.6707
loyal-disloyal	1.8148	1.0670	1.9113	1.2137	1.8518	.9572
heavenly-hellish	2.8271	1.1736	2.9746	1.1470	2.9259	1.1944
unusual-usual	4.0864	1.9763	3.9620	1.9385	3.9135	1.7860
strong-weak	1.5925	.9785	1.7088	1.0809	1.5555	.8748
sensitive-insensitive	2.5802	1.3865	2.4936	1.4220	2.8641	1.5772
aggressive-defensive	4.7160	2.0860	4.4810	2.0979	4.5802	1.9805
fast-slow	2.4320	1.4481	2.7341	1.4470	2.7407	1.3219
angular-rounded	4.0987	1.2333	4.0126	1.3547	3.7407	1.2646
severe-lenient	4.9506	1.4307	4.4430	1.5970	4.6543	1.5408
active-passive	2.1604	1.2116	2.1518	1.2836	2.2098	1.2040
sober-drunk	3.0123	1.4698	2.8987	1.3925	2.9506	1.4478
advanced-retarded	1.9382	1.2895	1.9620	1.2871	1.8395	1.1380
refreshed-weary	2.3950	1.2539	2.6329	1.3887	2.7901	1.4291
careful-careless	2.1234	1.5743	2.4810	1.5979	2.3456	1.5647
kind-cruel	2.1975	1.1591	2.3544	1.0912	2.0617	.9980
new-old	3.2839	1.8340	3.2025	1.8237	3.3086	1.8898
heavy-light	3.7654	1.3450	3.6582	1.5580	3.6543	1.3622
interesting-boring	1.6913	.8839	1.8607	1.0522	1.7901	.8987
propelled-drawn	3.0123	1.8691	3.1012	1.5958	3.0370	1.6736
hot-cold	3.1975	1.2806	3.3670	1.2445	3.3703	.9868
sharp-blunt	3.3456	1.4068	3.6962	1.4173	3.5185	1.3976
savory-tasteless	2.8518	1.1770	2.8354	1.3065	2.8395	1.2217
unexpected-expected	4.6666	1.5475	4.2531	1.6571	4.4938	1.4497
clean-dirty	1.9753	1.0654	2.3417	1.4042	2.2345	.9847
sane-insane	1.9876	1.0714	2.4556	1.4478	2.1481	1.1770
hard-soft	4.2098	1.4966	3.8607	1.4646	4.1111	1.3517
complex-simple	1.7283	1.0424	1.8354	1.0117	1.8024	.8947
impelling-resisting	3.5802	1.8044	3.6329	1.6004	3.5308	1.6031
tingling-numb	3.0617	1.2206	3.2278	1.2216	3.2098	1.1190
boisterous-shy	3.3456	1.0675	3,1645	1.1738	3.0740	1.2250
fair-unfair	1.9999	1.0183	2.2658	1.2995	2.0246	.9935
direct-indirect	2.7407	1.5135	2.7215	1.4402	2.8271	1.4383
leading-following	1.9876	1.4358	2.1265	1.3535	1.9999	1.4229

WAR WITH RUSSIA

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	4.6790	2.0597	3.9240	2.1034	4.1234	2.1394
youthful-mature	3.8024	1.4775	3.4430	1.4733	3.8024	1.5349
good-bad	6.5678	.8155	5.9493	1.3952	6.2222	1.3333
stable-changeable	5.7901	1.3582	5.2658	1.3567	5.3580	1.3636
large-small	1.5678	.8740	2.0126	1.2169	1.5678	.9154
excitable-calm	1.6666	.9938	2.0379	1.1300	1.8888	.9938
straight-curved	3.7407	1.5378	4.1012	1.3649	3.5802	1.4729
loyal-disloyal	4.3333	1.4656	4.1012	1.3925	4.1728	1.5054
heavenly-hellish	6.4444	1.0061	5.7974	1.3814	6.2469	1.0718
unusual-usual	3.2098	1.6903	3.1392	1.5889	3.1481	1.6711
strong-weak	2.3950	1.5922	2.7721	1.6144	2.1728	1.3313
sensitive-insensitive	3.9999	1.9626	4.0506	1.9350	3.6913	2.0646
aggressive-defensive	3.8641	2.3027	3.6075	2.1193	3.9629	2.3330
fast-slow	2.3209	1.5139	2.3544	1.5013	2.1481	1.4916
angular-rounded	3.5185	1.2872	3.7594	1.1929	3.6049	1.1933
severe-lenient	1.4444	.8164	1.8227	1.1666	1.5925	.9529
active-passive	1.8888	1.4656	2.4430	1.6206	2.1604	1.3918
sober-drunk	4.2716	1.7916	4.0632	1.8646	3.7901	1.4462
advanced-retarded	3.0864	1.9575	3.1645	1.6181	2.6790	1.5057
refreshed-weary	4.9012	1.6450	4.6582	1.3583	4.8888	1.4824
careful-careless	4.6543	2.4198	5.2405	2.1595	5.2222	1.9051
kind-cruel	6.0493	1.5063	6.0532	1.4784	6.1975	1.1046
new-old	2.9259	1.9924	3.3164	1.9780	2.7901	1.6756
heavy-light	2.1851	1.4496	2.1772	1.2604	1.9753	1.1108
interesting-boring	2.9012	1.7328	2.6329	1.5845	2.7901	1.6232
propelled-drawn	3.4691	2.1145	3.9367	2.0272	3.4197	1.9991
hot-cold	2.2222	1.9309	2.5316	2.0052	2.2098	1.8170
sharp-blunt	2.9753	1.9998	3.3291	2.3042	3.0740	2.0170
savory-tasteless	4.6543	1.7509	4.4050	1.8928	4.4074	1.7411
unexpected-expected	4.0987	2.1579	4.1645	2.0215	4.1975	2.0271
clean-dirty	6.0617	1.0925	5.7215	1.4314	5.6790	1.3130
sane-insane	5.8518	1.4064	5.6835	1.6346	5.6172	1.7037
hard-soft	1.8024	1.0472	2.2151	1.3932	2.2222	1.2668
complex-simple	1.7777	1.4572	1.5443	.8685	1.7283	1.1760
impelling-resisting	3.8271	2.1360	3.6835	2.0410	3.7777	2.0061
tingling-numb	4.1728	1.8776	3.8480	1.6770	4.1111	1.7356
boisterous-shy	2.8271	1.4638	2.6962	1.4871	2.6296	1.3466
fair-unfair	5.1851	1.8797	4.9250	1.6971	4.7330	1.6889
direct-indirect	3.2222	2.0487	2.6962	1.6790	2.8271	1.9359
leading-following	3.3703	1.7669	3.6329	1.6395	3.7654	1.7304

BOULDER

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	5.3580	1.8142	4.6708	1.7911	4.9999	1.7497
youthful-mature	5.2716	1.3334	4.9873	1.5790	5.0493	1.3689
good-bad	3.9629	1.4439	3.7215	1.1243	3.7901	.9902
stable-changeable	2.8765	2.0750	3.1012	1.8799	2.6543	1.6935
large-small	1.6419	1.1998	2.1645	1.2470	1.8271	1.1631
excitable-calm	5.3086	1.4794	4.6075	1.5045	4.8271	1.4297
straight-curved	5.1728	1.8907	5.0759	1.5242	5.3333	1.4824
loyal-disloyal	3.4814	1.1011	3.6582	1.0419	3.6790	.9916
heavenly-hellish	4.0740	.9529	3.9873	.9999	4.0617	.7427
unusual-usual	4.9753	1.8723	4.7721	1.7206	4.9506	1.5226
strong-weak	1.7530	1.0946	2.3924	1.3633	1.9753	1.1218
sensitive-insensitive	5.1604	1.7670	4.8734	1.4872	5.3950	1.3579
aggressive-defensive	4.2098	1.5691	3.9620	1.3259	3.8395	1.3918
fast-slow	4.5185	1.6785	4.1518	1.3787	4.1481	1.3250
angular-rounded	5.6913	1.5205	5.2784	1.4920	5.1728	1.6908
severe-lenient	3.4691	1.4663	3.4936	1.1236	3.6172	1.1818
active-passive	5.2592	1.6161	4.7215	1.7713	4.9876	1.4698
sober-drunk	3.3703	1.3917	3.5949	1.1082	3.5925	.9266
advanced-retarded	4.2962	1.2999	4.1518	.7809	4.2839	1.1247
refreshed-weary	4.5432	1.1764	4.1265	1.0233	4.3580	.9203
careful-careless	4.4197	1.3504	4.3037	1.3058	4.1111	1.2668
kind-cruel	4.6790	1.2455	4.3670	.9025	4.3209	1.0402
new-old	5.9753	1.3331	5.9493	1.3302	5.8518	1.3157
heavy-light	1.2962	.7276	1.5569	.9243	1.3209	.5843
interesting-boring	4.0740	1.9358	3.3417	1.6295	3.5432	1.7072
propelled-drawm	4.0740	1.8038	3.8101	1.3414	3.8888	1.4907
hot-cold	4.4938	1.5485	4.6202	1.3715	4.5555	1.2472
sharp-blunt	5.6049	1.5922	5.4936	1.3950	5.4567	1.6558
savory-tasteless	5.0617	1.4431	4.5189	1.2814	4.5308	1.3249
unexpected-expected	4.3209	1.6316	4.3164	1.3268	4.0617	1.4259
clean-dirty	4.8641	1.5535	4.5949	1.5221	4.8518	1.3343
sane-insane	3.8024	1.1906	3.9493	.8700	3.8395	.8952
hard-soft	1.6172	1.2329	1.7721	1.2921	1.4691	.9038
complex-simple	4.8765	1.9460	4.6835	1.7969	4.9629	1.9015
impelling-resisting	4.4814	1.4411	4.4430	1.4819	4.5432	1.6181
tingling-numb	4.8765	1.5184	4.6962	1.3440	4.5678	1.2366
boisterous-shy	4.0493	1.3231	3.8734	1.1514	4.1728	1.2550
fair-unfair	4.0864	.9962	3.9999	.8568	3.9999	.8012
direct-indirect	3.8518	1.4151	3.6075	1.0484	3.4567	1.0309
leading-following	4.2098	1.3673	4.0379	1.2370	3.9259	.9529

MY MOTHER

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	1.7407	.9529	2.0506	1.2916	1.8765	1.0108
youthful-mature	4.9506	2.0958	4.7468	2.1196	4.4567	2.1084
good-bad	1.2962	.6562	1.6962	1.0949	1.4567	.8172
stable-changeable	3.1604	2.1456	3.3797	2.1483	4.1975	2.3434
large-small	4.5802	1.4978	4.4936	1.5416	4.5802	1.4560
excitable-calm	3.4197	1.9427	3.7594	1.8974	3.3209	1.8245
straight-curved	3.6049	1.7261	3.7974	1.7016	3.9629	1.7529
loyal-disloyal	1.3456	.6118	1.5696	1.1215	1.5061	.8031
heavenly-hellish	2.1234	1.1799	2.3670	1.1493	2.4444	1.1439
unusual-usual	3.9135	2.0257	4.1012	2.0163	3.9629	2.0454
strong-weak	2.5802	1.3504	2.6329	1.4941	2.6543	1.3980
sensitive-insensitive	1.8518	1.1558	1.8607	.9773	1.8024	1.0590
aggressive-defensive	4.4814	1.5484	4.0506	1.6296	3.6172	1.5836
fast-slow	3.1481	1.2283	3.2278	1.1017	2.9135	1.1779
angular-rounded	4.4938	1.3251	4.4503	1.1327	4.3703	1.3094
severe-lenient	5.2222	1.4487	4.9873	1.4006	5.1111	1.5634
active-passive	2.4444	1.3608	2.4177	1.2180	2.6296	1.4777
sober-drunk	1.8395	1.3001	1.8987	1.2283	1.8271	1.2550
advanced-retarded	2.3209	1.1420	2.5696	1.1101	2.1851	.9177
refreshed-weary	3.0246	1.7067	2.8860	1.5669	3.4691	1.7361
careful-careless	1.6790	1.0867	1.9873	1.4186	1.8395	1.1488
kind-cruel	1.4814	.9041	1.6202	.9586	1.4074	.6625
new-old	4.1975	1.3464	4.0886	1.2344	4.1234	1.3088
heavy-light	4.3703	1.2614	4.2405	1.2550	4.2716	1.3426
interesting-boring	1.9012	1.0727	2.1012	1.0012	1.9999	.9938
propelled-drawn	3.1481	1.4496	3.7088	1.3231	3.3209	1.4214
hot-cold	3.2962	1.0708	3.5189	.8839	3.2839	.9327
sharp-blunt	3.5432	1.1658	3.8101	1.1591	3.6419	1.3545
savory-tasteless	2.8888	1.0423	3.0379	.9865	3.0740	1.3125
unexpected-expected	4.5308	1.4579	3.9367	1.4172	4.1604	1.6212
clean-dirty	1.4197	.7676	1.7848	1.1871	1.5185	.8764
sane-insane	1.3209	.7670	1.4556	.8236	1.4567	.9692
hard-soft	5.8148	1.3250	5.4177	1.3743	5.5678	1.2951
complex-simple	3.0370	1.5511	3.1265	1.3441	2.9999	1.4315
impelling-resisting	3.2592	1.4721	3.6708	1.3474	3.5432	1.3057
tingling-numb	3.1481	1.1558	3.3291	.9509	3.2098	.9902
boisterous-shy	4.2716	1.2766	3.9493	1.1351	3.8395	1.1701
fair-unfair	1.7901	1.0269	2.1012	1.3368	1.9382	1.1259
direct-indirect	2.5308	1.2381	2.7341	1.3844	2.7283	1.3334
leading-following	2.7901	1.4291	3.2151	1.4466	3.2222	1.4142

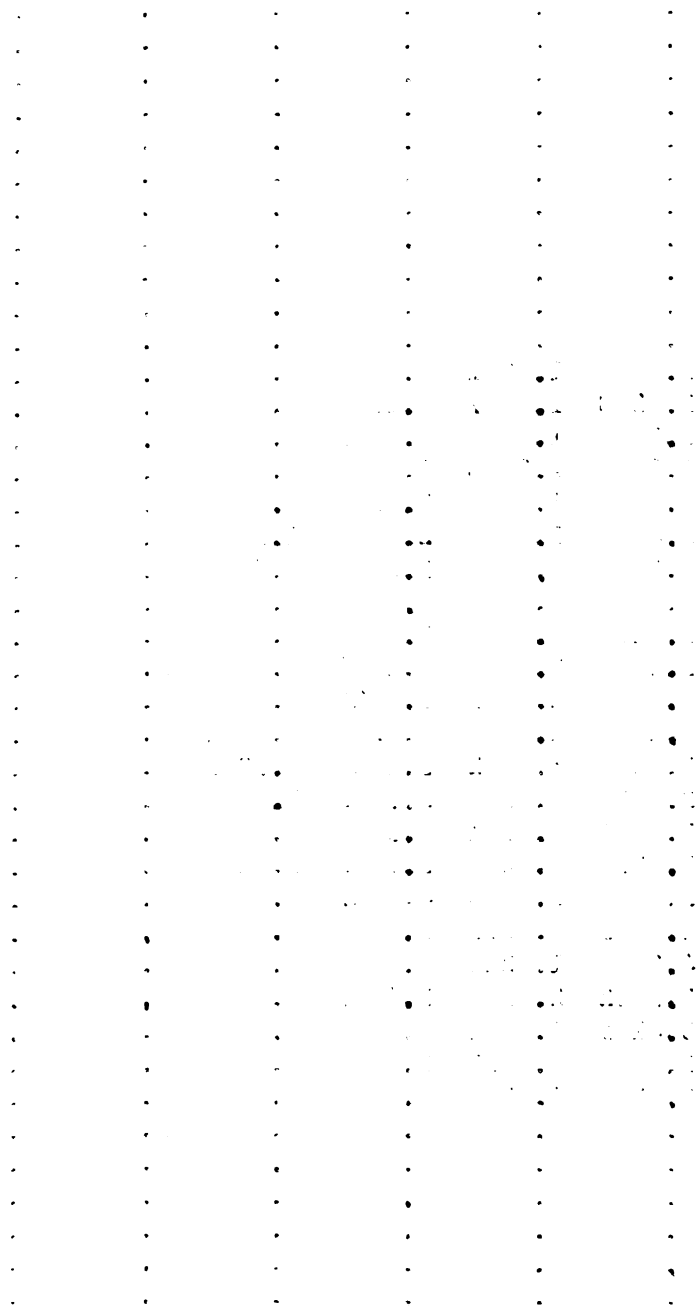
SOCIALISM

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful-colorless	4.4691	1.9881	3.7468	1.8312	4.1481	1.7715
youthful-mature	4.5061	1.4497	4.3164	1.5552	4.0740	1.4721
good-bad	5.0987	1.5682	4.5696	1.5151	4.7283	1.6406
stable-changeable	4.7160	1.5810	4.3924	1.7747	4.7283	1.4402
large-small	2.9012	1.5283	3.0886	1.3979	2.8395	1.2809
excitable-calm	3.2469	1.4447	3.4430	1.5157	3.3209	1.1528
straight-curved	3.9012	1.2531	3.8101	1.2020	3.8148	1.0899
loyal-disloyal	4.6172	1.2916	4.0506	1.4660	4.1728	1.2745
heavenly-hellish	4.6790	1.2154	4.5189	.9918	4.5432	1.1336
unusual-usual	3.8271	1.4722	3.7215	1.3773	4.0123	1.4185
strong-weak	3.4320	1.4310	3.5316	1.4481	3.2469	1.3196
sensitive-insensitive	4.5555	1.5071	4.4430	1.4473	4.4320	1.4310
aggressive-defensive	3.3580	1.6125	3.6202	1.5775	3.9629	1.6058
fast-slow	3.7407	1.2936	3.7088	1.3231	3.6790	1.1312
angular-round	4.1358	.9263	3.7974	.9984	3.8518	.8904
severe-lenient	3.0123	1.4781	3.1012	1.3463	3.3827	1.2723
active-passive	3.0617	1.5818	3.1645	1.5705	3.4691	1.3248
sober-drunk	3.8765	1.5265	3.7848	1.4202	3.6543	1.1775
advanced-retarded	3.9012	1.5364	3.8987	1.4634	3.7654	1.2597
refreshed-weary	4.3703	1.4180	4.1772	.8966	4.0617	1.0925
careful-careless	4.3703	1.9654	4.0379	1.7534	3.9876	1.7320
kind-cruel	4.7777	1.5555	4.3924	1.4444	4.5555	1.4229
new-old	5.2469	1.7035	4.8607	1.7698	4.9629	1.5669
heavy-light	3.1234	1.1799	3.3670	1.2445	3.3456	1.1348
interesting-boring	3.4320	1.9241	3.0379	1.6415	3.0617	1.5818
propelled-drawn	4.0740	1.6237	3.9113	1.5523	4.0987	1.5760
hot-cold	3.9629	1.4353	3.8480	1.3509	3.6913	1.1826
sharp-blunt	4.5432	1.5873	4.3037	1.4526	3.9753	1.2370
savory-tasteless	4.6419	1.3726	4.2911	1.3884	4.1728	1.1631
unexpected-expected	4.4938	1.6034	4.4050	1.5386	4.6049	1.2340
clean-dirty	4.5925	1.3125	4.2025	1.2865	4.2222	1.1331
sane-insane	4.3456	1.5084	4.1012	1.3925	3.7283	1.4055
hard-soft	3.1111	1.1863	3.3291	1.0758	3.3580	1.0220
complex-simple	2.5925	1.5696	2.6949	1.5138	2.6172	1.4620
impelling-resisting	3.9012	1.7112	3.8354	1.5214	3.5432	1.5717
tingling-numb	4.4320	1.1646	4.1392	1.1771	4.1604	1.0238
boisterous-shy	3.4444	1.2765	3.3291	1.2398	3.4074	1.1944
fair-unfair	4.8148	1.6637	4.3037	1.5939	4.3086	1.5841
direct-indirect	3.9753	1.6994	3.3037	1.4871	3.4814	1.4151
leading-following	3.6419	1.7235	3.8734	1.7090	4.0617	1.6802

APPENDIX D

Mean judgments and standard deviations across concepts on 40 scales by closed, open, and medium groups.

Scales	Closed Group Mean	SD	Open Group Mean	SD	Medium Group Mean	SD
colorful	3.4139	2.2039	3.1619	2.0016	3.2651	2.0674
youthful	4.1040	2.0035	3.9833	1.9736	3.9305	1.9885
good	3.5660	2.2178	3.4097	2.0289	3.4574	2.1146
stable	4.4925	2.1030	4.3797	2.0392	4.5387	2.0053
large	2.8622	1.7135	3.0133	1.6114	2.8226	1.6087
excitable	3.2924	1.8684	3.3784	1.8099	3.2872	1.8063
straight	3.7511	1.6551	3.8135	1.5352	3.8629	1.5841
loyal	3.3704	1.8087	3.2432	1.6520	3.2950	1.6547
heavenly	4.0669	1.8537	3.9567	1.6078	4.0149	1.6841
unusual	4.1598	1.9900	4.1279	1.8952	4.2307	1.8559
strong	2.8031	1.7220	2.9047	1.6425	2.7687	1.6052
sensitive	3.5660	1.9221	3.4317	1.7782	3.4984	1.8899
aggressive	3.6368	1.8017	3.6156	1.7077	3.5101	1.7131
fast	3.3366	1.6004	3.3145	1.5160	3.2554	1.4878
angular	4.1546	1.3758	4.0600	1.3329	4.0604	1.3395
severe	3.4490	1.6956	3.4517	1.5404	3.4412	1.5754
active	2.8337	1.6738	2.7668	1.5573	2.9188	1.5921
sober	3.3561	1.7006	3.2791	1.5624	3.3210	1.5088
advanced	3.1943	1.6787	3.1919	1.5493	3.0780	1.5665
refreshed	3.7271	1.7552	3.5496	1.5631	3.6621	1.6331
careful	3.4191	2.1661	3.4024	2.0599	3.3925	2.0407
kind	3.9045	2.0489	3.7622	1.9048	3.7511	1.9659
new	4.2658	2.1482	4.2265	2.0544	4.1442	2.1140
heavy	3.3340	1.8022	3.4184	1.7275	3.3437	1.7351
interesting	2.8830	1.8366	2.7062	1.6514	2.7245	1.6651
propelled	3.4971	1.7761	3.5190	1.6892	3.5679	1.7310
hot	3.7277	1.7655	3.7182	1.6131	3.5893	1.6705
sharp	3.9006	1.8243	4.0027	1.7276	3.8200	1.7317
savory	4.0175	1.6879	3.8568	1.5861	3.8116	1.5840
unexpected	4.2034	1.9224	4.0939	1.8440	4.1293	1.8113
clean	3.5562	2.0946	3.4357	1.9210	3.4282	1.9518
sane	3.4165	1.9194	3.2971	1.7848	3.2157	1.8036
hard	3.5419	1.9653	3.5530	1.7561	3.5731	1.7782
complex	2.7238	1.8282	2.6875	1.7110	2.7368	1.7432
impelling	3.6225	1.7763	3.6822	1.6786	3.5848	1.6831
tingling	3.8025	1.5980	3.7102	1.4571	3.6569	1.4534
boisterous	3.4769	1.4424	3.4477	1.3753	3.3717	1.3554
fair	3.6556	1.8745	3.4797	1.7301	3.4847	1.7203
direct	3.2365	1.7367	3.2079	1.6646	3.1696	1.6236
leading	3.2827	1.7989	3.3817	1.7277	3.2807	1.7036



APPENDIX E

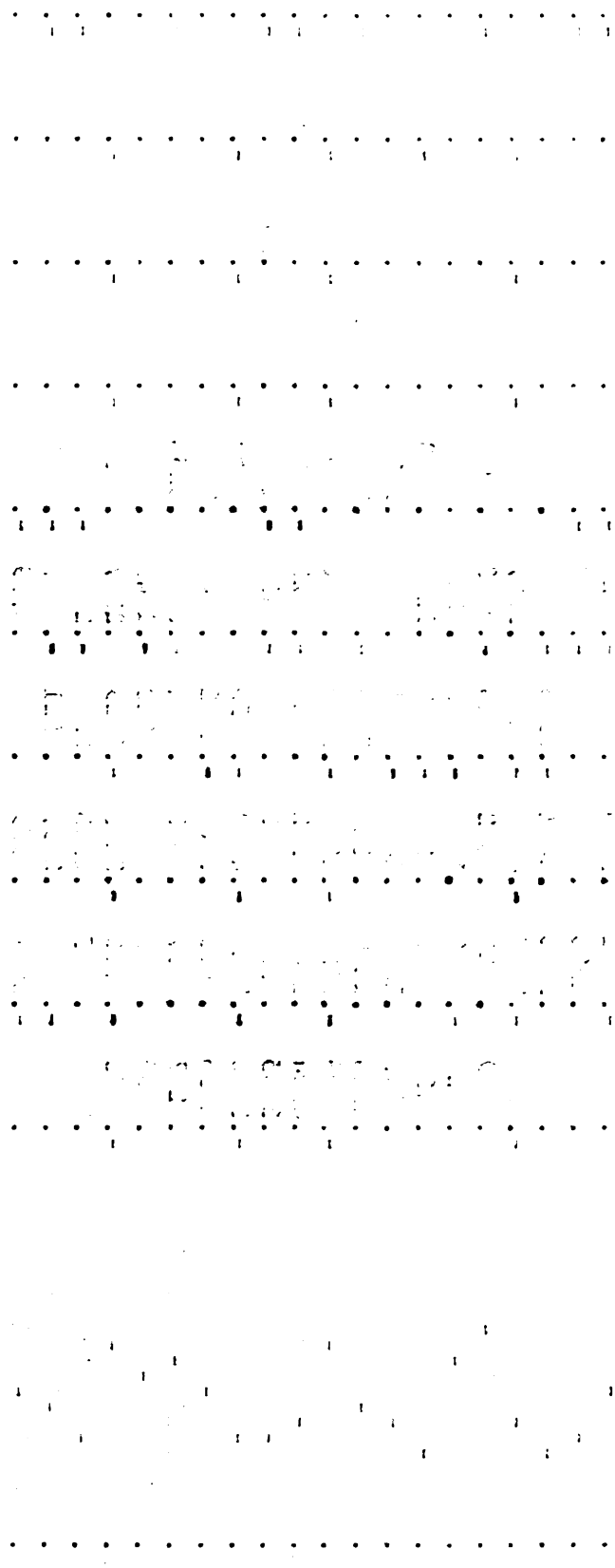
Correlation tables for closed, open, and medium groups.

CLOSED GROUP

	Scales	1	2	3	4	5	6	7	8	9	10
1.	colorful-colorless	1.0000									
2.	youthful-mature	.2279	1.0000								
3.	good-bad	.4995	.1090	1.0000							
4.	stable-changeable	.0056	-.1943	.2498	1.0000						
5.	large-small	-.1422	-.2144	-.2206	-.0309	1.0000					
6.	excitable-calm	.1115	.1264	-.1690	-.3689	.1094	1.0000				
7.	straight-curved	.1670	.0691	.1888	.1241	.0704	-.0574	1.0000			
8.	loyal-disloyal	.3775	.0251	.6399	.2763	-.1536	-.1682	.2331	1.0000		
9.	heavenly-hellish	.4233	.1297	.7311	.2392	-.2708	-.1636	.1831	.5393	1.0000	
10.	unusual-usual	.0182	.0499	-.1773	-.2161	.0672	.1557	-.0804	-.1367	-.2208	1.0000
11.	strong-weak	.1384	-.1540	.2301	.1511	.3178	-.1069	.1210	.3099	.1079	-.0386
12.	sensitive-insensitive	.4006	.1487	.4824	.0447	-.1922	.0590	.1634	.4260	.4456	-.0257
13.	aggressive-defensive	.0190	-.0398	-.1021	-.0572	.1216	.1240	-.0368	-.0955	-.1349	.0787
14.	fast-slow	.1619	-.0296	.0448	-.0792	.1937	.1207	.1580	.0595	-.0372	.0653
15.	angular-rounded	.0483	.0809	-.1011	-.1063	.0385	.0997	.1225	-.1168	-.1294	.0793
16.	severe-lenient	-.3107	-.1174	-.5339	-.1391	.2333	.1628	-.1070	-.4534	-.4917	.0812
17.	active-passive	.2734	.0670	.1356	-.1453	.1150	.2697	.1652	.1451	.0281	.1112
18.	sober-drunk	.2244	-.1287	.3740	.2426	-.0898	-.1454	.2141	.4299	.3604	-.1380
19.	advanced-retarded	.3734	-.0387	.4412	.1006	.0430	-.0129	.2450	.4574	.3132	-.0282
20.	refreshed-weary	.4278	.1106	.5020	.0880	-.0460	-.0072	.1965	.3810	.4426	-.0420

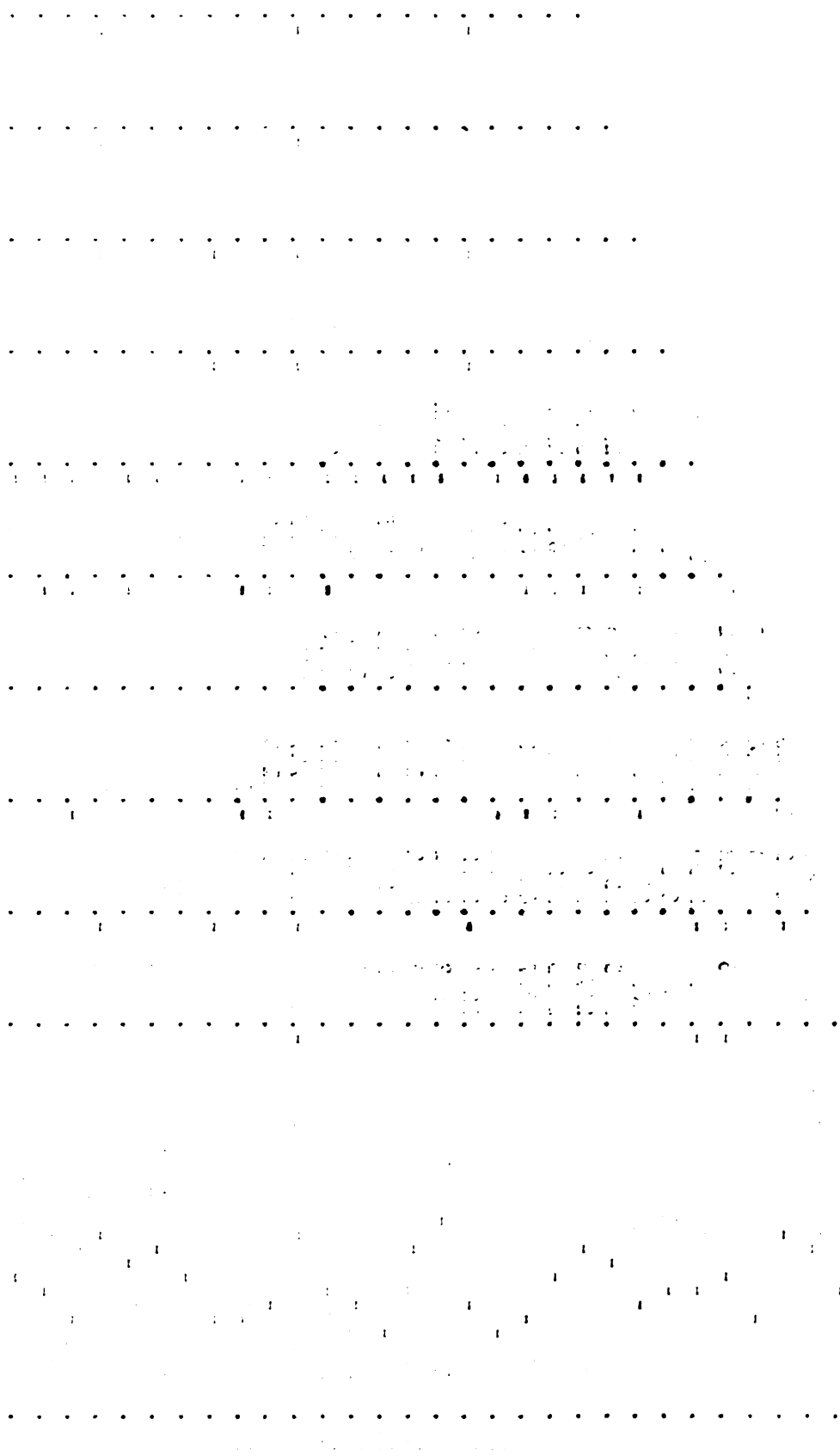
Closed Group - continued

	Scales	1	2	3	4	5	6	7	8	9	10
21.	careful-careless	.3570	-.0481	.5190	.2076	-.0424	-.0744	.1873	.4896	.3981	-.0965
22.	kind-cruel	.4245	.1526	.7038	.1978	-.2519	-.1731	.2189	.5648	.6335	-.1304
23.	new-old	.2327	.3556	.2491	-.0596	-.1798	.0349	.1096	.2581	.2083	.1442
24.	heavy-light	-.3357	-.2607	-.4074	-.0100	.3787	.0901	-.1314	-.2793	-.4122	.0041
25.	interesting-boring	.5099	.1223	.4002	.0048	-.0813	.1082	.1159	.2828	.3197	-.0237
26.	propelled-drawn	.1526	-.0052	.1661	-.0179	.0310	.0324	.1033	.1735	.0933	.0218
27.	hot-cold	.1434	.0111	.0374	-.0143	.1105	.1713	.0424	.0704	-.0468	.0481
28.	sharp-blunt	.2447	.1280	.1445	-.0701	.0031	.1439	.1554	.1334	.1240	.0438
29.	savory-tasteless	.4548	.1299	.4311	.0593	-.1308	.0408	.1802	.3625	.3718	-.0208
30.	unexpected-expected	-.0706	-.0424	-.2241	-.1270	.0886	.0759	-.1068	-.1833	-.2111	.2614
31.	clean-dirty	.4504	.1643	.6512	.1828	-.2823	-.1428	.2281	.5403	.5999	-.1163
32.	sane-insane	.3855	.0553	.6213	.2286	-.2457	-.1697	.1961	.5590	.5466	-.1615
33.	hard-soft	-.3850	-.2523	-.4699	-.0753	.3606	.0855	-.1315	-.3462	-.5074	.0762
34.	complex-simple	.1456	.0085	.0360	-.1042	.1146	.2032	.0716	.0677	.0122	.1329
35.	impelling-resisting	.2207	.0857	.1883	.0214	-.0011	.0258	.0768	.1343	.1383	-.0734
36.	tingling-numb	.3806	.1919	.3638	.0210	-.1445	.0420	.1512	.2814	.3179	-.0134
37.	boisterous-shy	-.0353	-.0763	-.2103	-.1329	.2387	.1759	-.0453	-.1759	-.2890	.1133
38.	fair-unfair	.3783	.1045	.6543	.2298	-.2177	-.1902	.2059	.6064	.5424	-.1506
39.	direct-indirect	.0868	-.0104	.2497	.1521	-.0487	-.0524	.1692	.2580	.1767	-.1299
40.	leading-following	.2324	-.0947	.1959	.0056	.0799	-.0002	.0893	.2288	.0838	.0783



Closed Group - continued

	Scales	11	12	13	14	15	16	17	18	19	20
11.	strong-weak	1.0000									
12.	sensitive-insensitive	.0511	1.0000								
13.	aggressive-defensive	.1659	-.1123	1.0000							
14.	fast-slow	.2884	.0990	.1544	1.0000						
15.	angular-rounded	-.0656	-.0122	.0347	.1602	1.0000					
16.	severe-lenient	-.0236	-.3756	.2131	.0609	.1535	1.0000				
17.	active-passive	.2892	.2036	.1959	.4381	.1339	.0696	1.0000			
18.	sober-drunk	.1657	.2409	-.0303	.0209	-.0524	-.2035	.0745	1.0000		
19.	advanced-retarded	.3803	.3365	.0869	.3145	.0008	-.2518	.3584	.3261	1.0000	
20.	refreshed-weary	.2176	.3624	.0533	.2210	-.0046	-.3053	.2789	.2790	.4923	1.0000
21.	careful-careless	.2655	.3021	-.0111	.0894	-.0610	-.2577	.2171	.3911	.4047	.3126
22.	kind-cruel	.1477	.4288	-.1643	.0534	-.0810	-.5463	.1083	.3613	.3929	.4332
23.	new-old	.0127	.2571	-.0434	.0600	.0362	-.2033	.1675	.0701	.1914	.2134
24.	heavy-light	.1204	-.3072	.0892	.0584	.0140	.3362	-.0611	-.1800	-.1806	-.3372
25.	interesting-boring	.1982	.2991	.0388	.1303	.0228	-.1812	.2744	.1789	.3319	.3217
26.	propelled-drawn	.1964	.0982	.1194	.1430	.0180	-.0534	.2009	.0776	.2400	.1750
27.	hot-cold	.1303	.1310	.0563	.2079	.0205	-.0082	.2760	.0076	.2092	.1041
28.	sharp-blunt	.1061	.1817	.0709	.1666	.0398	-.0685	.2614	.0022	.2217	.2028
29.	savory-tasteless	.1295	.3376	.0177	.1174	-.0110	-.2913	.2241	.1977	.3650	.4021
30.	unexpected-expected	-.1084	-.0953	.0727	.0470	.0635	.1418	-.0180	-.1388	-.0948	-.1195
31.	clean-dirty	.0842	.3999	-.1193	.0085	-.0432	-.4487	.0965	.3629	.3631	.4600
32.	sane-insane	.1494	.3711	-.1004	.0199	-.1041	-.4190	.0930	.4488	.3921	.4071
33.	hard-soft	.1037	-.3543	.1369	.0680	.0884	.4540	-.0070	-.2385	-.1753	-.3745
34.	complex-simple	.0405	.1269	.0479	.1630	.1030	.0316	.2999	.0331	.1879	.0824
35.	impelling-resisting	.1202	.1309	.1403	.1247	.0018	-.0708	.1701	.0935	.2153	.2056
36.	tingling-numb	.0791	.3514	.0065	.0694	-.0097	-.2219	.1993	.1653	.2563	.3609
37.	boisterous-shy	.1432	-.1470	.2179	.1751	.0768	.2520	.2005	-.1641	-.0066	-.0708
38.	fair-unfair	.1900	.3926	-.1430	.0246	-.0743	-.4723	.0917	.3595	.3892	.4118
39.	direct-indirect	.1714	.1491	.0017	.1032	-.0251	-.0919	.1452	.1710	.1975	.1706
40.	leading-following	.2676	.0932	.1207	.2974	.0117	-.0687	.2875	.1130	.3033	.2125



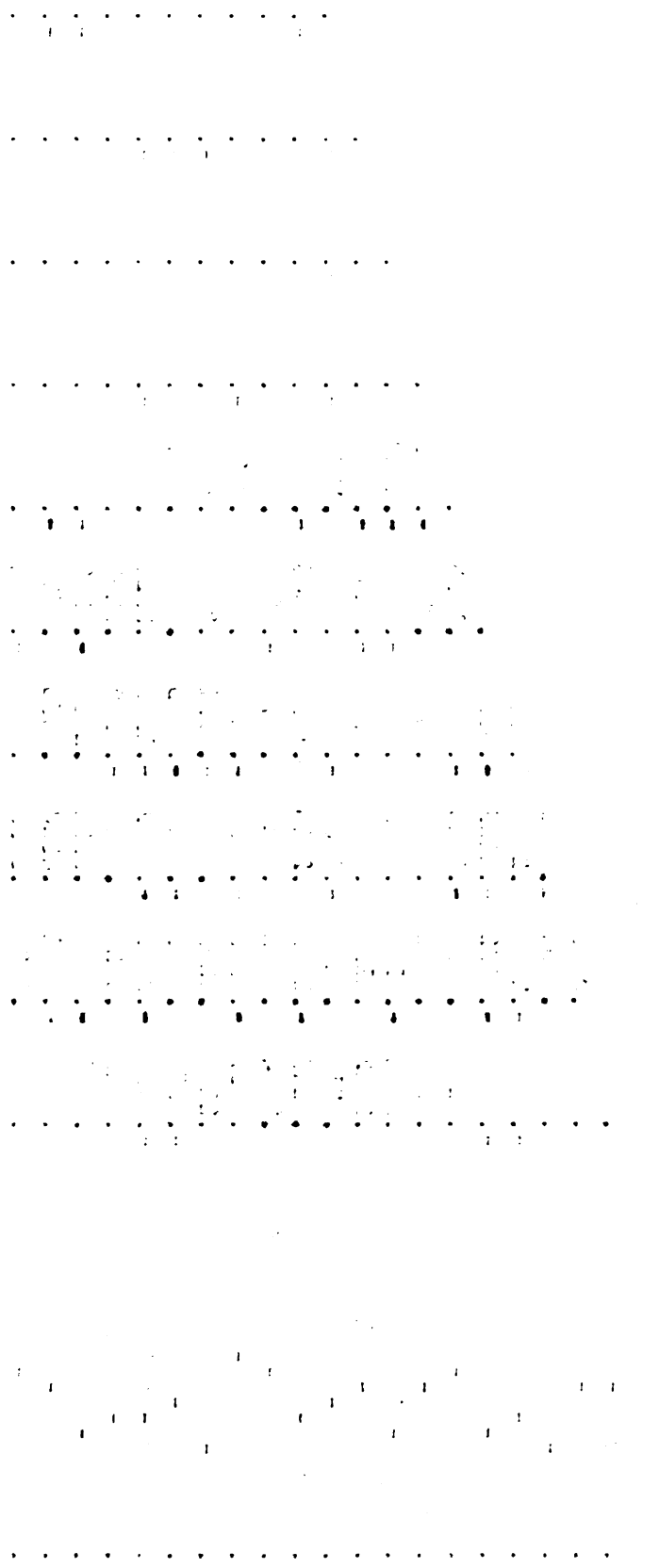
Closed Group - continued

Scales	21	22	23	24	25	26	27	28	29	30
21. careful-careless	1.0000									
22. kind-cruel	.5342	1.0000								
23. new-old	.1598	.3127	1.0000							
24. heavy-light	-.2111	-.4601	-.4187	1.0000						
25. interesting-boring	.3642	.3831	.2060	-.2395	1.0000					
26. propelled-drawn	.2097	.1445	.1565	-.0724	.2103	1.0000				
27. hot-cold	.1457	.0679	.0874	.0909	.1850	.1399	1.0000			
28. sharp-blunt	.1602	.1911	.1725	-.1486	.2746	.2202	.1921	1.0000		
29. savory-tasteless	.3645	.4711	.2412	-.3142	.4742	.2212	.2809	.3452	1.0000	
30. unexpected-expected	-.2093	-.2019	-.0060	.0877	-.1298	-.0132	-.0434	-.0507	-.1052	1.0000
31. clean-dirty	.5020	.7206	.3228	-.5207	.3731	.1300	-.0137	.1668	.4907	-.1766
32. sane-insane	.5286	.6720	.2070	-.3783	.3823	.1718	.0557	.1354	.4562	-.2151
33. hard-soft	-.2529	-.5172	-.2727	.5569	-.2471	-.0291	.0609	-.1180	-.3649	.1181
34. complex-simple	.1380	.0832	.0955	-.0101	.1930	.1389	.1919	.2285	.1408	.0933
35. impelling-resisting	.1794	.1672	.0716	-.1254	.2562	.1888	.1703	.1948	.1951	-.1111
36. tingling-numb	.2621	.3556	.2220	-.3045	.3778	.1912	.2292	.2951	.5019	-.0952
37. boisterous-shy	-.0496	-.2434	-.1273	.2799	-.0388	.1459	.1872	.0644	-.0170	.0892
38. fair-unfair	.5104	.6883	.2814	-.4143	.3565	.1496	.0753	.1762	.4470	-.2467
39. direct-indirect	.2583	.2558	.0406	-.0861	.1743	.1270	.1219	.1024	.1990	-.2026
40. leading-following	.2691	.1896	.0621	-.0119	.2262	.2690	.1861	.1689	.2057	-.0110

	31	32	33	34	35	36	37	38	39	40
31. clean-dirty	1.0000									
32. sane-insane	.7119	1.0000								
33. hard-soft	-.6050	-.4645	1.0000							
34. complex-simple	.0640	.0502	.0315	1.0000						
35. impelling-resisting	.1441	.1601	-.1126	.0904	1.0000					
36. tingling-numb	.3830	.3492	-.3745	.1526	.2944	1.0000				
37. boisterous-shy	-.2629	-.2515	.2999	.1801	.0718	-.0042	1.0000			
38. fair-unfair	.6532	.6725	-.4402	.0679	.1737	.3693	-.2577	1.0000		
39. direct-indirect	.2459	.3160	-.1394	.0236	.1473	.1976	.0559	.3615	1.0000	
40. leading-following	.1652	.1947	-.0126	.1830	.2006	.1523	.1875	.1855	.2082	1.0000

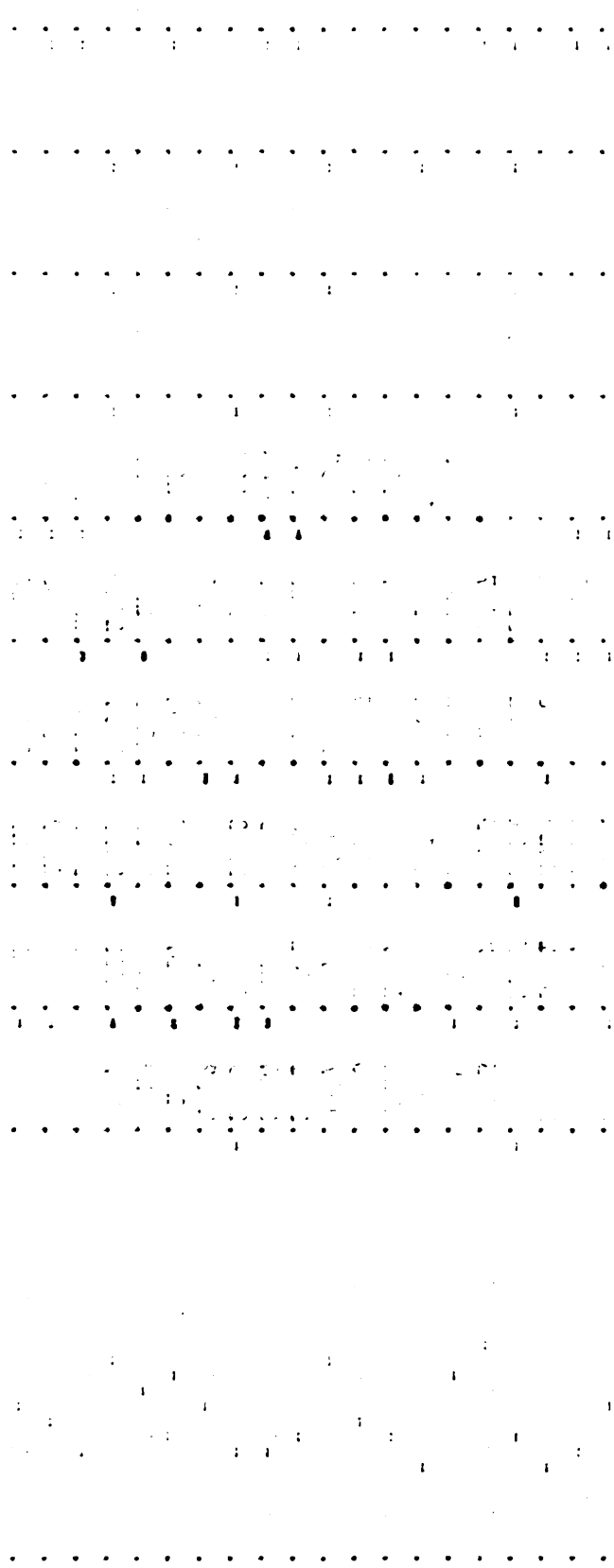
OPEN GROUP

	Scales	1	2	3	4	5	6	7	8	9	10
1.	colorful-colorless	1.0000									
2.	youthful-mature	.2311	1.0000								
3.	good-bad	.4020	.0634	1.0000							
4.	stable-changeable	-.0549	-.2426	.2303	1.0000						
5.	large-small	-.0587	-.1432	-.1425	-.0070	1.0000					
6.	excitable-calm	.1184	.1597	-.1518	-.3814	.1358	1.0000				
7.	straight-curved	.0851	.0001	.1792	.1448	.0263	-.1295	1.0000			
8.	loyal-disloyal	.2764	-.1107	.5413	.2653	-.0793	-.1529	.2288	1.0000		
9.	heavenly-hellish	.3812	.1152	.6014	.1761	-.2109	-.1038	.1544	.4073	1.0000	
10.	unusual-usual	.1217	.1219	-.1780	-.2829	.0760	.1370	-.0527	-.1561	-.1475	1.0000
11.	strong-weak	.1149	-.1945	.2746	.1950	.2648	-.0488	.1660	.3754	.0653	-.0609
12.	sensitive-insensitive	.2944	.1492	.3626	.0077	-.1203	.0600	.1879	.2804	.3722	.0421
13.	aggressive-defensive	.0437	-.0563	-.0134	-.0409	.0963	.0425	-.0210	.0001	-.1087	.0131
14.	fast-slow	.2166	.0269	.0716	-.0731	.2399	.1633	.1357	.1301	-.0144	.1223
15.	angular-rounded	-.0356	.0969	-.0901	-.0603	.0341	.0757	.1660	-.1107	-.0706	.0792
16.	severe-lenient	-.1998	-.0183	-.4199	-.1509	.2528	.2080	-.0675	-.3416	-.3908	.1002
17.	active-passive	.3019	.0521	.1548	-.1309	.1268	.2457	.1340	.2062	.0737	.0832
18.	sober-drunk	.1752	-.0795	.3531	.2080	-.0322	-.1639	.2645	.4425	.3114	-.1025
19.	advanced-retarded	.2920	-.0521	.4328	.1456	.0531	-.0064	.1795	.4771	.2031	-.0322
20.	refreshed-weary	.4062	.1425	.3953	.0432	-.0664	.0028	.1863	.3296	.3573	.0327



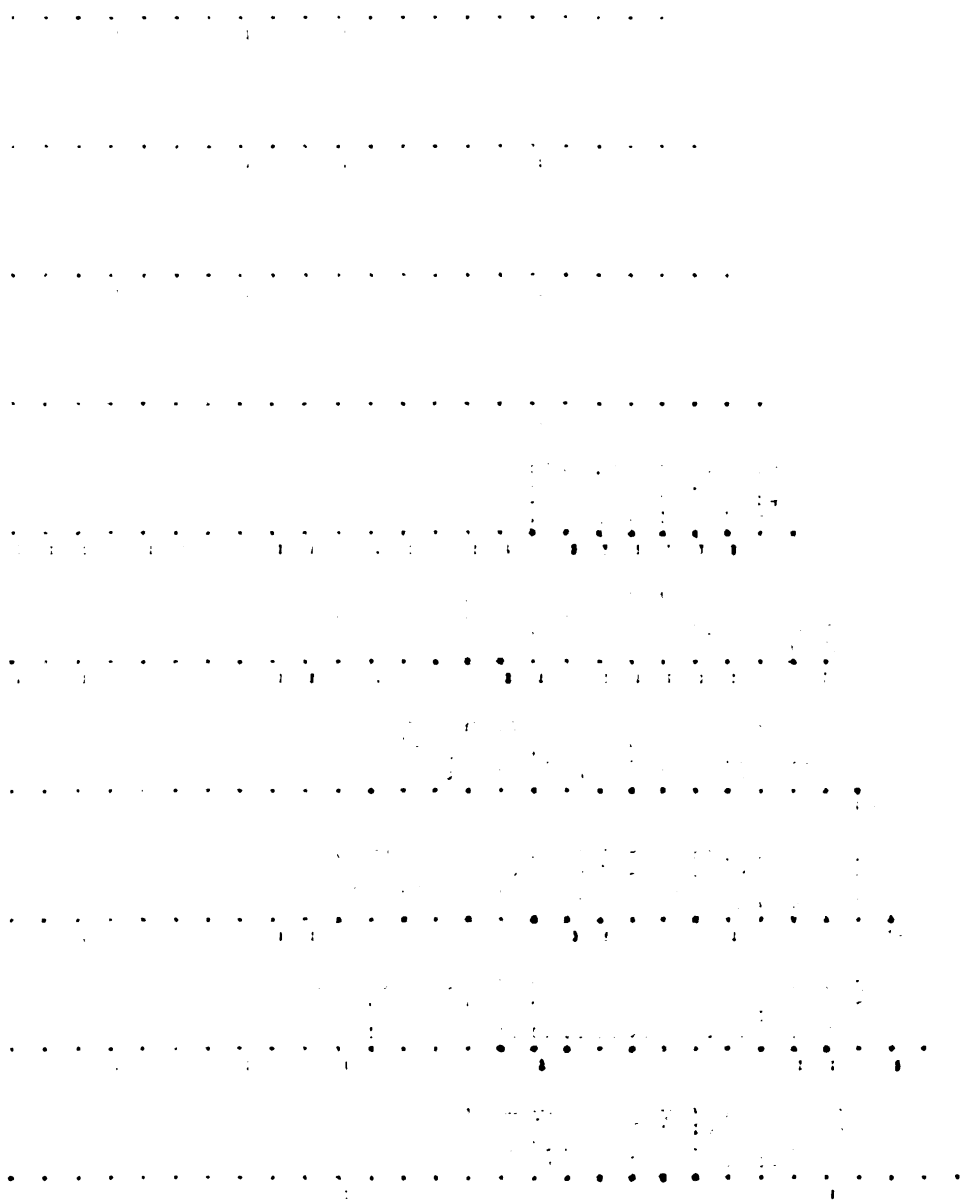
Open Group - continued

	Scales	1	2	3	4	5	6	7	8	9	10
21.	careful-careless	.2969	-.0957	.4581	.2026	-.0147	-.1012	.1621	.4685	.3569	-.0816
22.	kind-cruel	.4068	.0737	.6758	.1639	-.1531	-.1289	.2106	.5132	.5818	-.0957
23.	new-old	.2665	.3072	.2429	-.0708	-.1174	.0508	.0624	.1746	.1686	.1558
24.	heavy-light	-.2452	-.2565	-.3631	.0062	.3354	.0855	-.1077	-.1890	-.3408	-.0420
25.	interesting-boring	.4175	.0962	.3185	.0201	.0177	.0860	.0625	.2880	.2629	-.0106
26.	propelled-drawn	.1949	-.0100	.1835	.0132	.0594	.0473	.0268	.1594	.0657	.0265
27.	hot-cold	.1606	.0109	.0119	-.0084	.1501	.1709	.0694	.0545	-.0908	.1168
28.	sharp-blunt	.2124	.1077	.0976	-.0561	-.0417	.0930	.0436	.0987	.0806	.0727
29.	savory-tasteless	.4066	.1374	.3399	-.0075	-.0769	.0581	.0820	.2828	.3194	.0730
30.	unexpected-expected	.0017	.0471	-.1397	-.1466	.0146	.0892	-.0823	-.0919	-.0824	.2877
31.	clean-dirty	.3703	.0641	.5420	.1331	-.1913	-.1361	.2024	.4532	.5160	-.0612
32.	sane-insane	.3414	-.0230	.5165	.1491	-.1475	-.0948	.2057	.4979	.4342	-.1257
33.	hard-soft	-.2789	-.1803	-.3583	-.0168	.2905	.0337	-.0806	-.2301	-.4273	.0236
34.	complex-simple	.2052	.0334	.0862	-.0786	.1281	.1642	.1122	.1186	.0246	.1134
35.	impelling-resisting	.1168	-.0157	.1488	.0164	.0080	.0238	.0636	.1461	.0769	-.0109
36.	tingling-numb	.3229	.1626	.2423	-.1109	-.0239	.1439	.0911	.1796	.2466	.1034
37.	boisterous-shy	.0267	-.0513	-.2099	-.1497	.2146	.2408	-.0040	-.0743	-.2247	.1360
38.	fair-unfair	.3433	.0349	.5903	.1769	-.1328	-.1641	.2296	.4886	.4652	-.1349
39.	direct-indirect	.0747	-.0740	.1709	.1508	.0553	-.0246	.1807	.2646	.1390	-.1366
40.	leading-following	.2584	-.0823	.2129	.1035	.0834	-.0240	.1223	.2616	.1048	.0077



Open Group - continued

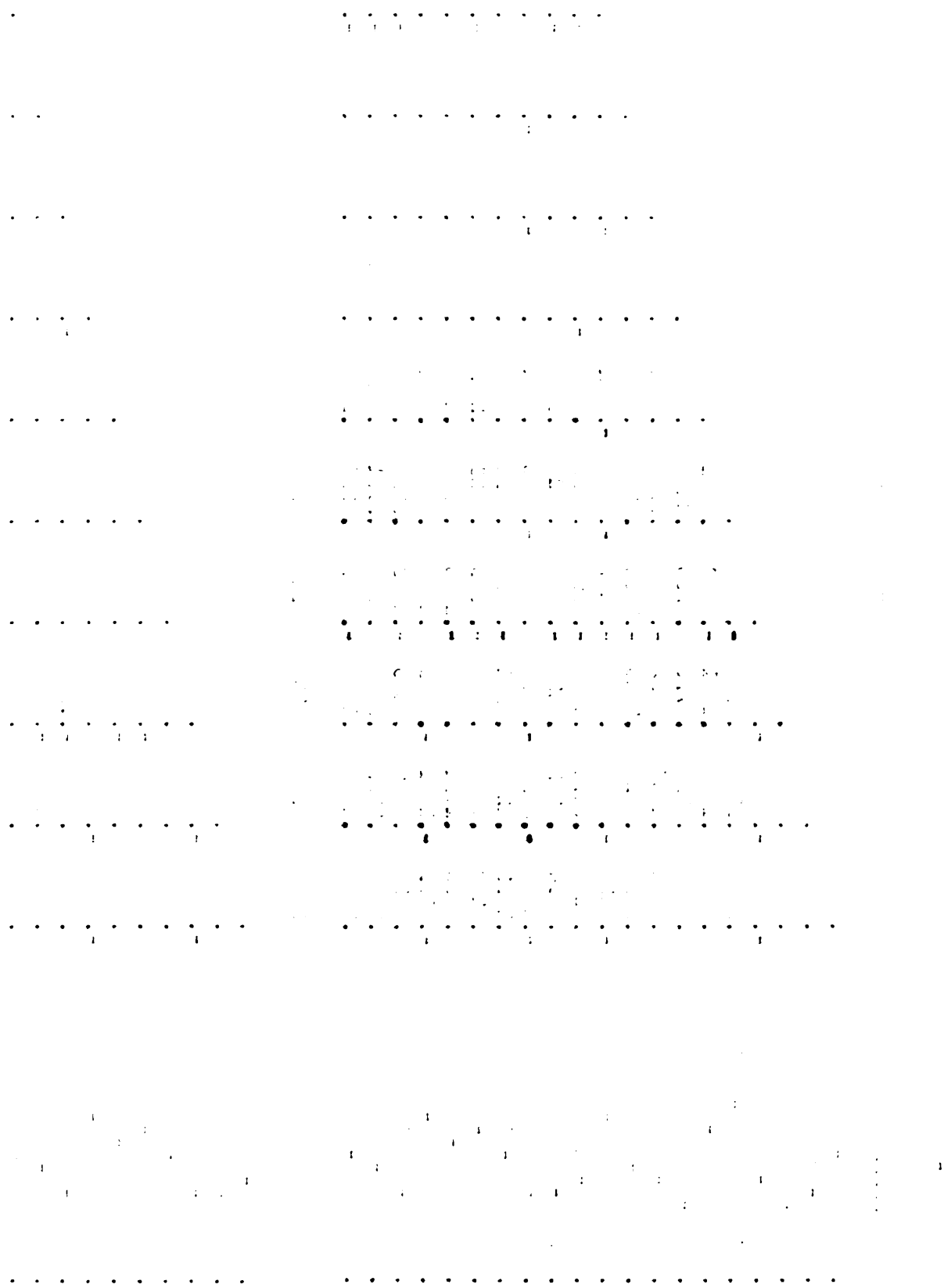
	Scales	11	12	13	14	15	16	17	18	19	20
11.	strong-weak	1.0000									
12.	sensitive-insensitive	.0722	1.0000								
13.	aggressive-defensive	.2223	-.1000	1.0000							
14.	fast-slow	.2740	.0974	.1895	1.0000						
15.	angular-rounded	-.0519	-.0348	.0107	.0886	1.0000					
16.	severe-lenient	.0323	-.2465	.1891	.1235	.1160	1.0000				
17.	active-passive	.2843	.2266	.1750	.4106	.0815	.1133	1.0000			
18.	sober-drunk	.2469	.2569	-.0145	.1297	-.0522	-.1750	.2001	1.0000		
19.	advanced-retarded	.4321	.2328	.1538	.3266	-.0285	-.2033	.3803	.3690	1.0000	
20.	refreshed-weary	.1844	.2931	.0270	.2709	-.0401	-.2141	.3189	.2951	.4382	1.0000
21.	careful-careless	.2569	.2245	.0074	.0751	-.0641	-.2496	.1759	.3414	.3716	.2874
22.	kind-cruel	.1207	.3836	-.1186	.0760	-.0416	-.4815	.1727	.3679	.3692	.3876
23.	new-old	.0544	.2129	-.0040	.1070	.0284	-.1397	.1483	.0500	.2103	.2025
24.	heavy-light	.1244	-.2978	.0737	.0294	-.0300	.2775	-.0573	-.1109	-.1161	-.2756
25.	interesting-boring	.1931	.2081	.0339	.1843	-.0310	-.0908	.2487	.1846	.2723	.2417
26.	propelled-drawn	.1602	.0436	.1154	.1075	.0155	-.0509	.1362	.0850	.2142	.1201
27.	hot-cold	.1277	.0872	.0881	.2128	.0999	.0523	.2337	.0201	.1976	.0696
28.	sharp-blunt	.0614	.1384	.0586	.1325	.0688	-.0903	.1399	.0019	.1930	.1228
29.	savory-tasteless	.1032	.2952	.0055	.1534	-.0180	-.2347	.2076	.2234	.2660	.3142
30.	unexpected-expected	-.0580	-.0040	.0496	.0466	.0395	.0704	.0227	-.0301	-.0518	-.0239
31.	clean-dirty	.0782	.3543	-.0964	.0447	-.0615	-.3693	.1166	.3213	.2916	.3438
32.	sane-insane	.1860	.3433	-.0506	.1295	-.1063	-.3461	.2136	.4063	.3668	.3350
33.	hard-soft	.1416	-.2936	.1384	.0613	.0587	.3436	-.0384	-.1558	-.1022	-.2597
34.	complex-simple	.1478	.1510	.0711	.1815	.1309	.0452	.3084	.0982	.2063	.0809
35.	impelling-resisting	.1149	.0625	.1098	.0230	.0121	-.0202	.1179	.0554	.1702	.0917
36.	tingling-numb	.0622	.2594	.0388	.1863	.0017	-.1702	.2459	.1336	.2457	.2767
37.	boisterous-shy	.1159	-.1038	.1241	.1178	.0235	.2064	.2111	-.0659	.0388	-.0268
38.	fair-unfair	.1696	.3294	-.1220	.1200	-.0422	-.3643	.1669	.3219	.3412	.3371
39.	direct-indirect	.2246	.1151	.0190	.1563	.0232	-.0717	.1955	.2257	.2307	.1113
40.	leading-following	.2779	.0910	.1825	.1859	-.0429	-.0788	.2280	.1548	.3731	.1840



Open Group - continued

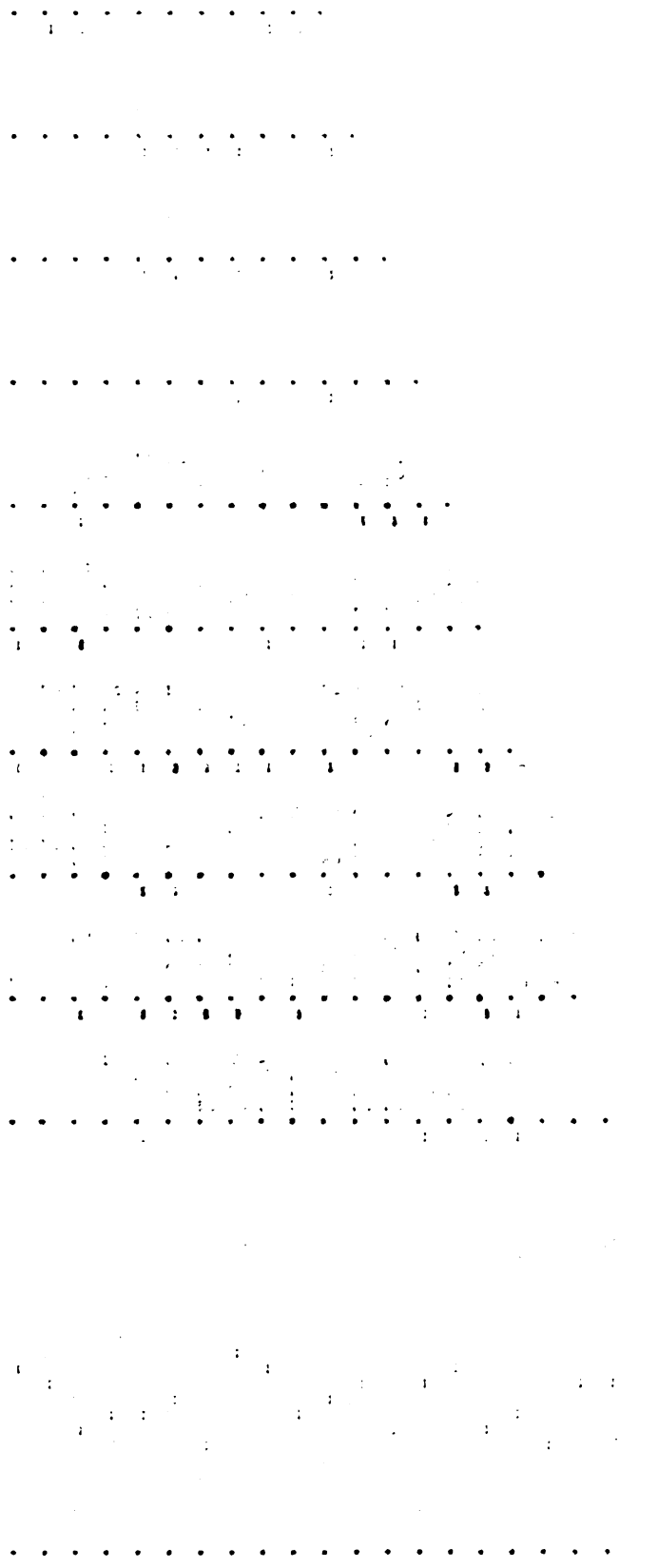
	Scales	21	22	23	24	25	26	27	28	29	30
21.	careful-careless	1.0000									
22.	kind-cruel	.5182	1.0000								
23.	new-old	.1562	.2737	1.0000							
24.	heavy-light	-.1849	-.3870	-.4228	1.0000						
25.	interesting-boring	.3324	.3313	.1761	-.1360	1.0000					
26.	propelled-drawn	.2224	.1469	.1441	-.0799	.2312	1.0000				
27.	hot-cold	.1079	.0352	.0776	.1238	.2190	.1664	1.0000			
28.	sharp-blunt	.1233	.1107	.1832	-.1687	.1707	.2459	.2326	1.0000		
29.	savory-tasteless	.2656	.4125	.2028	-.2534	.4280	.2060	.2660	.2827	1.0000	
30.	unexpected-expected	-.1226	-.0898	.0677	-.0297	-.0012	-.0343	.0158	-.0304	.0461	1.0000
31.	clean-dirty	.4259	.6474	.2402	-.3990	.3459	.1319	-.0541	.1113	.3531	-.0264
32.	sane-insane	.4654	.6283	.1226	-.2082	.4021	.1539	.1156	.1244	.4158	-.0951
33.	hard-soft	-.2007	-.4435	-.2109	.5189	-.1866	.0003	.1023	-.0784	-.2961	.0183
34.	complex-simple	.1833	.1281	.1511	-.0250	.2856	.1686	.3012	.1817	.1944	.0718
35.	impelling-resisting	.1260	.1068	.0634	-.0325	.1023	.2624	.0673	.2153	.1736	-.0907
36.	tingling-numb	.2153	.2951	.1880	-.2128	.2960	.1791	.2303	.2980	.4545	.0305
37.	boisterous-shy	-.0175	-.1791	-.0873	.2893	.0808	.1119	.2761	.0441	.0373	.0249
38.	fair-unfair	.4235	.6769	.1818	-.2843	.3254	.0954	.0711	.1066	.3698	-.0954
39.	direct-indirect	.2360	.2387	.0199	.0325	.2171	.0898	.1002	.0227	.1415	-.1233
40.	leading-following	.2792	.1889	.1157	-.0247	.2355	.2994	.1273	.1331	.2050	-.0215

		31	32	33	34	35	36	37	38	39	40
31.	clean-dirty	1.0000									
32.	sane-insane	.6210	1.0000								
33.	hard-soft	-.4950	-.3273	1.0000							
34.	complex-simple	.1209	.1506	.0371	1.0000						
35.	impelling-resisting	.0458	.1271	-.0143	.1081	1.0000					
36.	tingling-numb	.2807	.2972	-.2511	.2317	.2230	1.0000				
37.	boisterous-shy	-.1727	-.0338	.2473	.1795	.0801	.1196	1.0000			
38.	fair-unfair	.5942	.6154	-.3347	.1283	.1101	.2457	-.1877	1.0000		
39.	direct-indirect	.1990	.2792	-.0614	.1699	.0589	.0614	.0854	.0329	1.0000	
40.	leading-following	.1739	.2426	.0073	.2243	.2297	.1294	.1403	.1712	.1485	1.0000



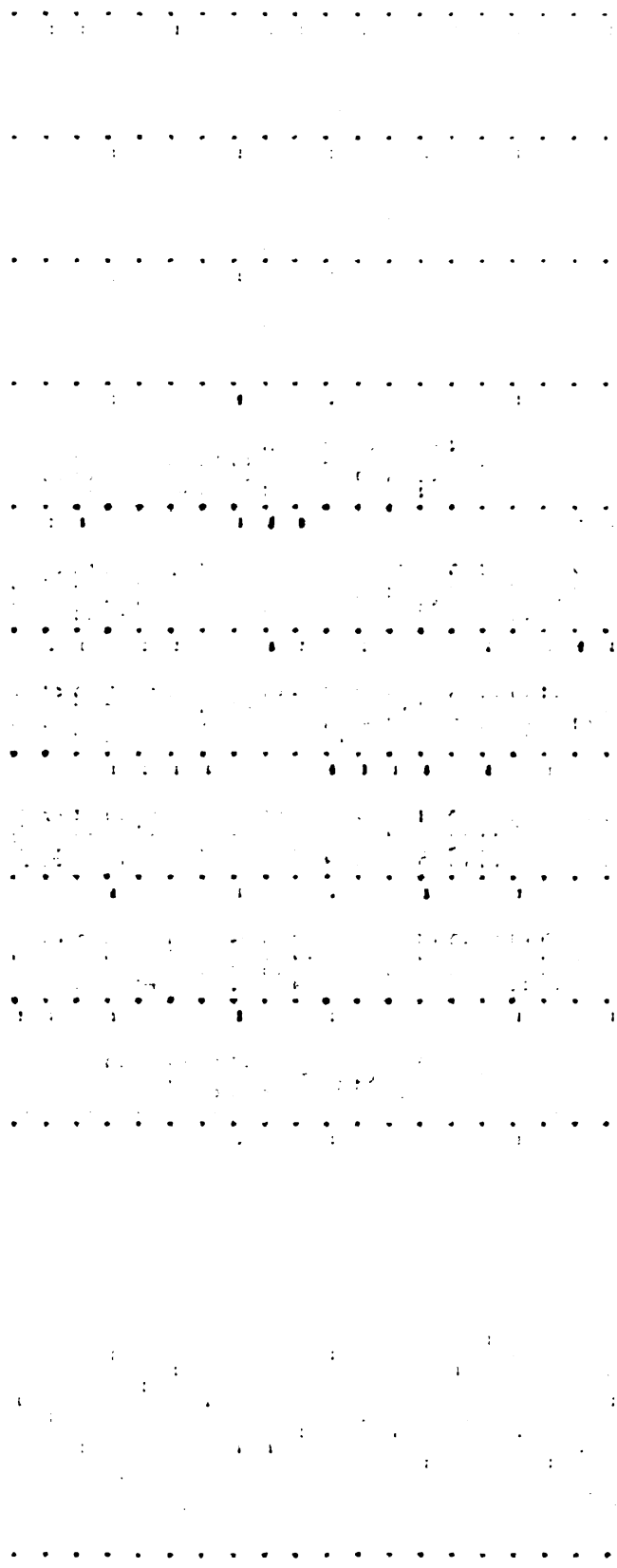
MEDIUM GROUP

	Scales	1	2	3	4	5	6	7	8	9	10
1.	colorful-colorless	1.0000									
2.	youthful-mature	.2438	1.0000								
3.	good-bad	.4450	.1615	1.0000							
4.	stable-changeable	-.1363	-.1928	.1751	1.0000						
5.	large-small	-.1164	-.1523	-.2239	-.0042	1.0000					
6.	excitable-calm	.2364	.2216	-.0917	-.3992	.1273	1.0000				
7.	straight-curved	-.0135	-.0303	.0540	.0922	.0590	-.0805	1.0000			
8.	loyal-disloyal	.3583	.0467	.6301	.1965	-.1104	-.1220	.1537	1.0000		
9.	heavenly-hellish	.3596	.1891	.6648	.1629	-.2449	-.0817	.0451	.4932	1.0000	
10.	unusual-usual	.1001	.0573	-.1413	-.2532	.0498	.1861	-.0918	-.1218	-.1728	1.0000
11.	strong-weak	.1350	-.1852	.1835	.1213	.3495	.0070	.0826	.2649	.0099	-.0294
12.	sensitive-insensitive	.3407	.1455	.3795	-.0666	-.1992	.1288	.0927	.3361	.3739	-.0180
13.	aggressive-defensive	.1106	-.0457	.0055	-.1227	.0566	.1555	-.0212	-.0368	-.0889	.0409
14.	fast-slow	.2568	-.0065	.0740	-.1352	.1832	.1988	.1108	.1333	-.0549	.0954
15.	angular-rounded	.0083	-.0043	-.0761	-.0162	.0475	.0138	.2715	-.0658	-.0986	.0263
16.	severe-lenient	-.1995	-.0684	-.4466	-.1427	.2888	.2124	-.0187	-.3979	-.4566	.0694
17.	active-passive	.3412	.0865	.1714	-.1752	.1055	.2713	.1092	.1687	.0254	.0536
18.	sober-drunk	.1856	-.0785	.3546	.1752	-.0662	-.1387	.1978	.4646	.3318	-.1142
19.	advanced-retarded	.3808	.0059	.4241	.0041	.0393	.0647	.1499	.4626	.2370	-.0207
20.	refreshed-weary	.3818	.1678	.4265	-.0008	-.0995	.0410	.0637	.3389	.3922	.0066



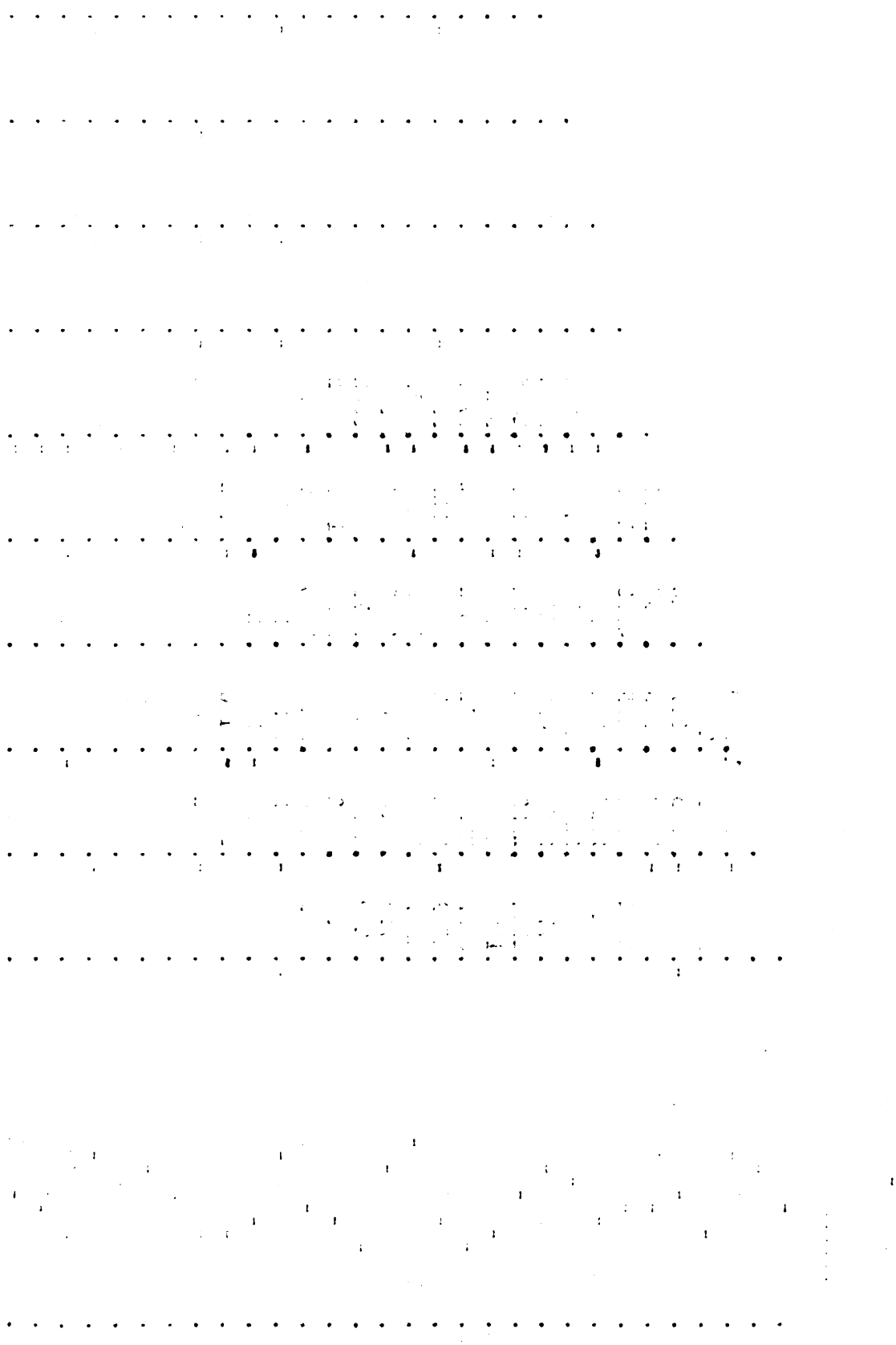
Medium Group - continued

	Scales	1	2	3	4	5	6	7	8	9	10
21.	careful-careless	.2918	-.0663	.5093	.1435	-.0629	-.0771	.0946	.4795	.3555	-.0635
22.	kind-cruel	.4196	.1440	.7422	.1296	-.2336	-.1100	.0804	.5992	.6241	-.0947
23.	new-old	.2749	.3550	.3043	-.0862	-.1493	.0620	.0550	.2735	.2286	.1792
24.	heavy-light	-.2603	-.2761	-.3769	.0443	.3969	.0626	-.0420	-.2517	-.3709	-.0315
25.	interesting-boring	.4619	.0868	.3320	-.0513	-.0042	.1736	.0559	.2632	.2677	-.0122
26.	propelled-drawn	.2003	.0553	.1736	.0309	.0373	.0422	.0038	.2046	.0782	-.0056
27.	hot-cold	.1788	.0031	-.0062	-.0818	.1240	.2271	.0598	.0521	-.1105	.0894
28.	sharp-blunt	.2288	.0528	.1036	-.1117	.0130	.0948	.0559	.0832	.0582	.0443
29.	savory-tasteless	.4127	.0963	.3906	-.0104	-.0458	.0873	.0920	.3018	.3253	-.0341
30.	unexpected-expected	-.0031	-.0002	-.1573	-.1591	.0616	.0874	-.0620	-.1385	-.1387	.3332
31.	clean-dirty	.4094	.1634	.6397	.0807	-.2440	-.0784	.0795	.5568	.5848	-.0474
32.	sane-insane	.3466	.0381	.6060	.1563	-.1819	-.1199	.1015	.5602	.5211	-.1704
33.	hard-soft	-.2932	-.2407	-.3827	.0410	.3152	-.0237	-.0385	-.2787	-.4709	.0415
34.	complex-simple	.2348	.0356	.1379	-.0753	.0461	.1456	.0780	.1546	.0447	.1041
35.	impelling-resisting	.1851	.0125	.1268	-.0575	-.0294	.1038	.0642	.0587	.0464	-.0091
36.	tingling-numb	.3886	.1813	.3126	-.0842	-.0508	.1813	.0199	.2204	.2755	.0445
37.	boisterous-shy	.1033	-.0659	-.1543	-.1743	.1795	.2574	-.0144	-.1077	-.2367	.1160
38.	fair-unfair	.3004	.0849	.6432	.1643	-.2075	-.1316	.1231	.5761	.4941	-.1345
39.	direct-indirect	.1281	-.0461	.2284	.1382	-.0422	-.0361	.1695	.2670	.1669	-.1288
40.	leading-following	.2447	-.0456	.2600	.0014	.0350	.0059	.0915	.2525	.0932	.0344



Medium Group - continued

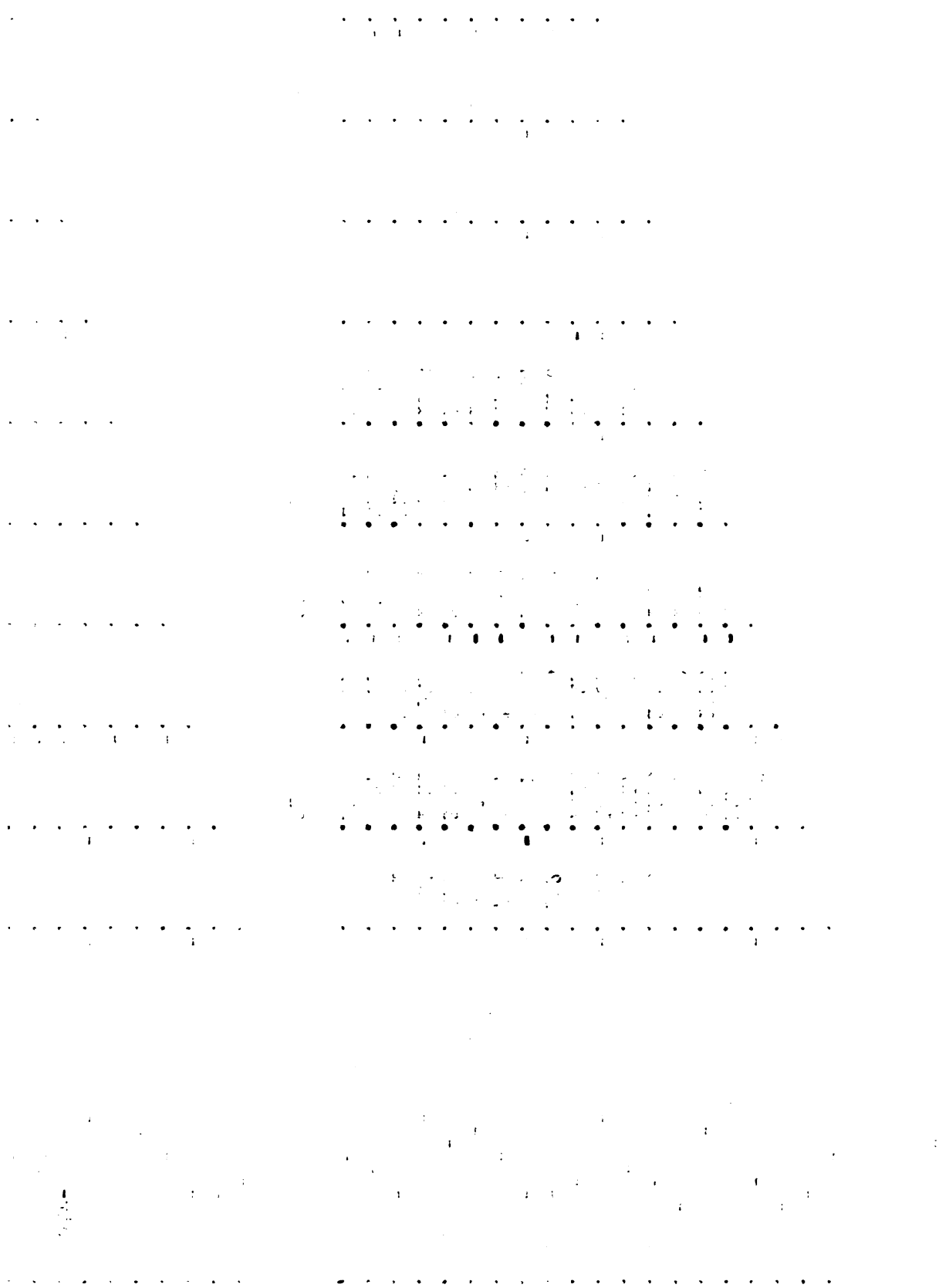
	Scales	11	12	13	14	15	16	17	18	19	20
11.	strong-weak	1.0000									
12.	sensitive-insensitive	.0249	1.0000								
13.	aggressive-defensive	.1755	-.0277	1.0000							
14.	fast-slow	.3039	.1835	.2755	1.0000						
15.	angular-rounded	-.0001	-.0145	.0367	.1018	1.0000					
16.	severe-lenient	.0601	-.2829	.1593	.1097	.1053	1.0000				
17.	active-passive	.2942	.2314	.2475	.4773	.1153	.0923	1.0000			
18.	sober-drunk	.2029	.2755	-.0241	.0984	-.0141	-.1799	.1391	1.0000		
19.	advanced-retarded	.3984	.3172	.1898	.4018	.0702	-.1572	.4619	.3572	1.0000	
20.	refreshed-weary	.1774	.2750	.1452	.2147	.0031	-.2540	.2721	.2115	.4169	1.0000
21.	careful-careless	.2144	.2522	.0162	.0821	-.0315	-.2445	.1856	.3826	.3791	.2605
22.	kind-cruel	.1187	.4150	-.0138	.0559	-.0661	-.5021	.1540	.3516	.4133	.4181
23.	new-old	.0037	.2238	.0111	.1432	.0582	-.1707	.1929	.1126	.2505	.2880
24.	heavy-light	.1599	-.2962	.0392	.0639	.0322	.3365	-.0313	-.1121	-.1189	-.2959
25.	interesting-boring	.1587	.2916	.0894	.1708	-.0287	-.1013	.2538	.2444	.3024	.2781
26.	propelled-drawn	.1754	.0964	.0969	.2083	.0043	-.0335	.1898	.1019	.1936	.1283
27.	hot-cold	.1260	.1054	.0889	.2775	.0750	.0842	.2863	.0355	.2484	.0527
28.	sharp-blunt	.0937	.1712	.0785	.2534	.1095	.0182	.2610	.0890	.2358	.2253
29.	savory-tasteless	.1405	.2994	.0766	.2200	.0069	-.1958	.2650	.1890	.3456	.3459
30.	unexpected-expected	-.0268	-.0862	.0728	.0304	.0094	.1002	-.0002	-.1614	-.0649	-.0118
31.	clean-dirty	.0544	.3938	-.0350	.0266	-.0489	-.4281	.1624	.3851	.3750	.4199
32.	sane-insane	.1362	.3674	-.0110	.0686	-.0552	-.3694	.1622	.4667	.3903	.3468
33.	hard-soft	.1441	-.3402	.0642	.0542	.0984	.3602	-.0731	-.1817	-.1595	-.2739
34.	complex-simple	.1466	.1990	.0846	.2183	.1092	-.0015	.2824	.1099	.2981	.1114
35.	impelling-resisting	.0638	.1159	.1994	.1747	.0970	.0174	.1880	.0591	.1885	.1641
36.	tingling-numb	.0891	.3213	.0703	.1775	.0243	-.1459	.2516	.1326	.3140	.3487
37.	boisterous-shy	.1440	-.0596	.1923	.2159	.0814	.2199	.2868	-.0993	.1366	-.0111
38.	fair-unfair	.1653	.3720	-.0524	.0593	-.0085	-.4122	.1458	.3616	.3744	.3361
39.	direct-indirect	.2153	.1635	.0563	.1123	.0317	-.0805	.1509	.2473	.2145	.1424
40.	leading-following	.2903	.0976	.1771	.2196	.0481	-.0616	.2631	.1702	.3485	.2415



Medium Group - continued

	Scales	21	22	23	24	25	26	27	28	29	30
21.	careful-careless	1.0000									
22.	kind-cruel	.5307	1.0000								
23.	new-old	.1450	.3388	1.0000							
24.	heavy-light	-.1398	-.4102	-.3976	1.0000						
25.	interesting-boring	.3410	.3221	.1741	-.1130	1.0000					
26.	propelled-drawn	.1486	.1336	.1133	-.0157	.2330	1.0000				
27.	hot-cold	.0936	.0377	.1060	.1097	.2368	.1406	1.0000			
28.	sharp-blunt	.1318	.1350	.2020	-.1496	.2124	.2092	.1845	1.0000		
29.	savory-tasteless	.3115	.4117	.1965	-.1994	.4580	.2236	.2701	.2925	1.0000	
30.	unexpected-expected	-.1211	-.1422	.0907	.0475	-.0489	-.0187	-.0033	-.0203	-.0671	1.0000
31.	clean-dirty	.4994	.7151	.3425	-.4468	.3546	.1790	-.0529	.1645	.3975	-.0859
32.	sane-insane	.5322	.6448	.1706	-.2805	.3757	.1206	.0887	.1054	.3906	-.1782
33.	hard-soft	-.1877	-.4672	-.2391	.5062	-.1646	.0144	.0919	-.1283	-.2565	.0664
34.	complex-simple	.2771	.1807	.1831	-.0678	.2815	.1738	.2824	.2215	.1978	.0050
35.	impelling-resisting	.0928	.1170	.1129	-.0864	.2258	.1748	.1328	.1438	.2383	-.0182
36.	tingling-numb	.2439	.3624	.2420	-.2640	.3717	.1366	.2650	.2917	.4850	.0067
37.	boisterous-shy	.0281	-.1621	-.0525	.1924	.0756	.1308	.2798	.0963	.1119	.0736
38.	fair-unfair	.4711	.6811	.2659	-.3517	.3281	.1066	.0471	.0873	.3559	-.2115
39.	direct-indirect	.2835	.2427	.0635	-.0361	.2519	.1324	.0877	.0095	.2085	-.0987
40.	leading-following	.2980	.2360	.1439	-.0847	.2082	.2156	.1448	.1233	.2450	.0457

		31	32	33	34	35	36	37	38	39	40
31.	clean-dirty	1.0000									
32.	sane-insane	.6458	1.0000								
33.	hard-soft	-.5298	-.3566	1.0000							
34.	complex-simple	.1647	.1520	-.0279	1.0000						
35.	impelling-resisting	.1065	.1233	.0148	.1441	1.0000					
36.	tingling-numb	.3324	.3155	-.2719	.2678	.2438	1.0000				
37.	boisterous-shy	-.1584	-.1200	.2030	.2086	.1480	.1518	1.0000			
38.	fair-unfair	.5938	.6406	-.3506	.1452	.1427	.3051	-.1581	1.0000		
39.	direct-indirect	.2270	.2824	-.0825	.1857	.1473	.1365	.1054	.3130	1.0000	
40.	leading-following	.2394	.2611	-.0364	.2036	.1891	.2315	.2252	.2369	.2656	1.0000



APPENDIX F

Summary of identified factors for each solution for closed, open, and medium groups.

Summary of identified factors for each solution for closed, open, and medium groups.

Open System Individuals

Solutions:

Three-Factor	Four-Factor	Five-Factor
evaluative	evaluative	evaluative
dynamism	dynamism	dynamism
predictability	predictability	predictability
	sensory-ennui	aggressiveness
		activity-boisterous

Closed System Individuals

Solutions:

Three-Factor	Four-Factor	Five-Factor	Six-Factor
evaluative	evaluative	evaluative	evaluative
dynamism	dynamism	not identifiable	aggressiveness
stability	predictability	predictability	predictability
	sensory-ennui	sensory-ennui	not identifiable
		not identifiable	not identifiable
			activity-sharpness

Medium System Individuals

Solutions:

Three-Factor	Four-Factor
evaluative	evaluative
activity	activity
potency	potency
	tautness

APPENDIX G

Rotated factor loadings
for closed, open, and medium groups.

Closed

	FACTORS				
	I	II	III	IV	h^2
colorful-colorless	.5635	.0633	-.1720	-.3693	.4876
youthful-mature	.2349	-.4606	-.2908	-.2318	.4056
good-bad	.7966	.1464	.2076	-.1214	.7138
stable-changeable	.2024	.2304	.5137	.2008	.3982
large-small	-.3739	.5123	-.0743	-.0191	.4081
excitable-calm	-.1894	-.0976	-.4176	-.3828	.3663
straight-curved	.2807	.2521	-.0239	-.0600	.1465
loyal-disloyal	.6905	.3048	.1972	-.0401	.6102
heavenly-hellish	.7530	-.0094	.2191	-.0337	.6162
unusual-usual	-.0612	.0541	-.5922	.0519	.3600
strong-weak	.0917	.6754	.1301	-.1379	.5005
sensitive-insensitive	.5858	.0217	-.1092	-.1799	.3879
aggressive-defensive	-.2159	.2219	-.0947	-.2663	.1758
fast-slow	.0262	.5118	-.3185	-.2344	.4190
angular-rounded	-.0567	.0598	-.3442	-.0485	.1276
severe-lenient	-.6442	.0788	-.1145	-.0694	.4391
active-passive	.1155	.4095	-.3646	-.4496	.5162
sober-drunk	.4654	.3154	.2216	.0860	.3726
advanced-retarded	.4730	.5238	-.0683	-.2331	.5571
refreshed-weary	.5698	.2329	-.0785	-.2361	.4408

Closed - continued

	FACTORS				
	I	II	III	IV	h^2
careful-careless	.5232	.3412	.2207	-.2213	.4879
kind-cruel	.8109	.0640	.1576	-.1250	.7020
new-old	.4587	-.1264	-.3659	-.1186	.3744
heavy-light	-.6479	.3074	.1367	.0601	.5365
interesting-boring	.4084	.0764	-.0105	-.5127	.4357
propelled-drawn	.1170	.2372	-.0181	-.3725	.2090
hot-cold	-.0469	.1705	-.0125	-.5307	.3131
sharp-blunt	.1629	.0233	-.1315	-.5276	.3227
savory-tasteless	.5056	.0234	.0216	-.5084	.5151
unexpected-expected	-.1402	.0661	-.4972	.2314	.3248
clean-dirty	.8187	-.0059	.1128	-.1147	.6962
sane-insane	.7328	.1147	.2732	-.1367	.6435
hard-soft	-.6929	.3061	-.0166	.0707	.5791
complex-simple	.0583	.2166	-.3234	-.2999	.2448
impelling-resisting	.0990	.0268	.1707	-.5344	.3252
tingling-numb	.4113	-.1079	.0331	-.5505	.4849
boisterous-shy	-.4144	.2567	-.0938	-.3724	.3851
fair-unfair	.7430	.1013	.2563	-.1514	.6510
direct-indirect	.1881	.1638	.3627	-.3206	.2966
leading-following	.1399	.4573	-.0423	-.3146	.3294
Proportions of Variance	.2160	.0725	.0606	.0835	

Open

	FACTORS				
	I	II	III	IV	h^2
colorful-colorless	.4778	.2195	.2375	-.3537	.4579
youthful-mature	.3209	-.2055	.4939	-.0045	.3891
good-bad	.6605	.3286	-.2597	-.1545	.6356
stable-changeable	.0655	.2153	-.6043	.0784	.4219
large-small	-.4474	.3563	.0883	-.0878	.3426
excitable-calm	-.1354	-.0018	.5410	-.2099	.3551
straight-curved	.1684	.4277	-.0188	.1147	.2248
loyal-disloyal	.4391	.4956	-.3238	-.1570	.5679
heavenly-hellish	.6951	.1540	-.1643	-.0234	.5344
unusual-usual	-.0387	-.0562	.5289	-.0865	.2919
strong-weak	-.1181	.6404	-.1805	-.1960	.4951
sensitive-insensitive	.5185	.2343	.1711	-.0355	.3543
aggressive-defensive	-.2493	.1939	-.0516	-.2492	.1645
fast-slow	-.0592	.5647	.3629	-.1176	.4679
angular-rounded	-.0691	.0771	.2758	.0563	.0900
severe-lenient	-.5767	.0625	.2959	.0502	.4266
active-passive	.0539	.5644	.3845	-.2277	.5212
sober-drunk	.3131	.5246	-.1855	.0499	.4101
advanced-retarded	.2362	.5999	-.0574	-.2975	.5075
refreshed-weary	.4527	.4052	.1547	-.0964	.4024

Open - continued

	FACTORS				
	I	II	III	IV	h^2
careful-careless	.3891	.3760	-.2769	-.2873	.4520
kind-cruel	.7482	.3048	-.1725	-.1328	.7001
new-old	.4123	.0209	.3009	-.1680	.2892
heavy-light	-.6814	.1366	-.1537	-.0070	.5066
interesting-boring	.3172	.2741	.0709	-.4313	.3668
propelled-drawn	.0474	.0375	-.1080	-.6211	.4011
hot-cold	-.1151	.2220	.2022	-.4612	.3161
sharp-blunt	.1596	-.0795	.1136	-.5545	.3522
savory-tasteless	.4643	.1339	.1220	-.4682	.4677
unexpected-expected	-.0212	-.0238	.3748	.0809	.1480
clean-dirty	.7220	.2353	-.1260	-.0839	.5997
sane-insane	.5693	.3833	-.2113	-.2250	.5662
hard-soft	-.7069	.0964	-.0524	-.0423	.5135
complex-simple	.0158	.2981	.2511	-.3784	.2954
impelling-resisting	.0339	-.0329	-.1614	-.5486	.3293
tingling-numb	.3594	.0825	.2400	-.4767	.4208
boisterous-shy	-.3859	.1614	.1877	-.3698	.3469
fair-unfair	.6309	.3606	-.2010	-.0967	.5778
direct-indirect	.0828	.4552	-.1550	-.0746	.2437
leading-following	.0366	.3195	-.1433	-.4774	.3518
Proportions of Variance	.1619	.0988	.0698	.0771	

Medium

	FACTORS				
	I	II	III	IV	h^2
colorful-colorless	.4250	.4587	-.2887	-.1970	.5132
youthful-mature	.0239	.0893	-.5903	-.1363	.3756
good-bad	.8264	.0852	-.1474	-.0007	.7119
stable-changeable	.3021	-.3048	.3529	.3322	.4191
large-small	-.2158	.2484	.5007	-.0829	.3658
excitable-calm	-.2417	.4633	-.2364	-.2836	.4094
straight-curved	.0373	.1694	-.0112	.6072	.3989
loyal-disloyal	.7667	.1110	.0482	.0703	.6075
heavenly-hellish	.7157	-.0935	-.2870	.0253	.6039
unusual-usual	-.1756	.1915	-.1409	-.4775	.3154
strong-weak	.2809	.3672	.5656	-.0859	.5410
sensitive-insensitive	.4149	.2468	-.3506	.0962	.3653
aggressive-defensive	-.0315	.3748	.1515	-.2033	.2057
fast-slow	.0418	.6302	.1316	-.0467	.4185
angular-rounded	-.2149	.2590	-.1140	.5028	.3791
severe-lenient	-.5736	.2305	.2375	-.0021	.4386
active-passive	.1260	.6773	.0091	-.0305	.4756
sober-drunk	.5384	.0961	.1380	.2541	.3827
advanced-retarded	.4977	.5309	.1177	.0277	.5442
refreshed-weary	.4846	.3044	-.1895	-.1172	.3771

Medium - continued

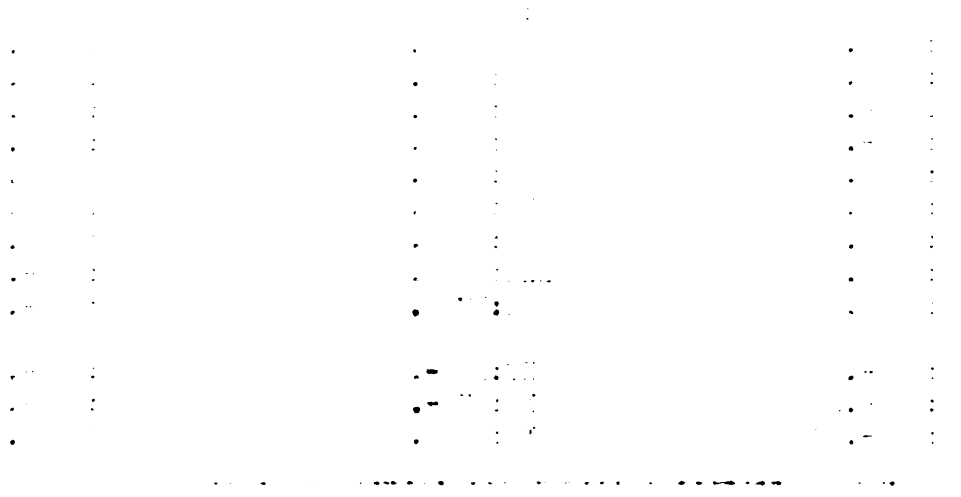
	FACTORS				
	I	II	III	IV	h^2
careful-careless	.6437	.2017	.1280	.0838	.4785
kind-cruel	.8226	.0875	-.2275	.0337	.7372
new-old	.2662	.2478	-.4372	-.1078	.3350
heavy-light	-.3801	.0477	.6139	.0005	.5237
interesting-boring	.3658	.4628	-.1222	.0611	.3666
propelled-drawn	.1879	.3420	.0881	-.0264	.1607
hot-cold	-.0596	.5536	.0249	.1001	.3207
sharp-blunt	.0570	.4523	-.2203	.1166	.2699
savory-tasteless	.4125	.4530	-.1930	.0880	.4204
unexpected-expected	-.1730	.0792	-.0203	-.4718	.2592
clean-dirty	.7713	.0867	-.2899	.0106	.6866
sane-insane	.7660	.1114	-.0619	.1565	.6275
hard-soft	-.4555	.0634	.5439	.0240	.5078
complex-simple	.1210	.5031	-.0486	.0998	.2800
impelling-resisting	.0613	.3980	-.0931	.1543	.1947
tingling-numb	.3058	.4723	-.3237	-.0059	.4214
boisterous-shy	-.2231	.5200	.1864	-.0933	.3636
fair-unfair	.7480	.0818	-.1242	.1883	.6170
direct-indirect	.3360	.2251	.1654	.2828	.2709
leading-following	.3318	.4065	.2009	-.0701	.3206
Proportions of Variance	.1906	.1174	.0743	.0429	

APPENDIX H

Indices of factorial similarity.

Comparisons:

Closed:Open	Closed:Medium	Open:Medium
I:II .53	I:II .27	I:II .18
I:III-.58	I:III-.54	I:III-.68
I:IV -.26	I:IV .23	I:IV .18
II:I -.04	II:I .31	II:I .57
II:III-.14	II:III .60	II:III .23
II:IV -.45	II:IV .16	II:IV .27
III:I .21	III:I .40	III:I -.37
III:II .12	III:II -.38	III:II -.46
III:IV .10	III:IV .52	III:IV -.42
IV:I -.34	IV:I -.39	IV:I -.42
IV:II -.50	IV:II -.08	IV:II -.08
IV:III-.30	IV:III .30	IV:III .11



APPENDIX I

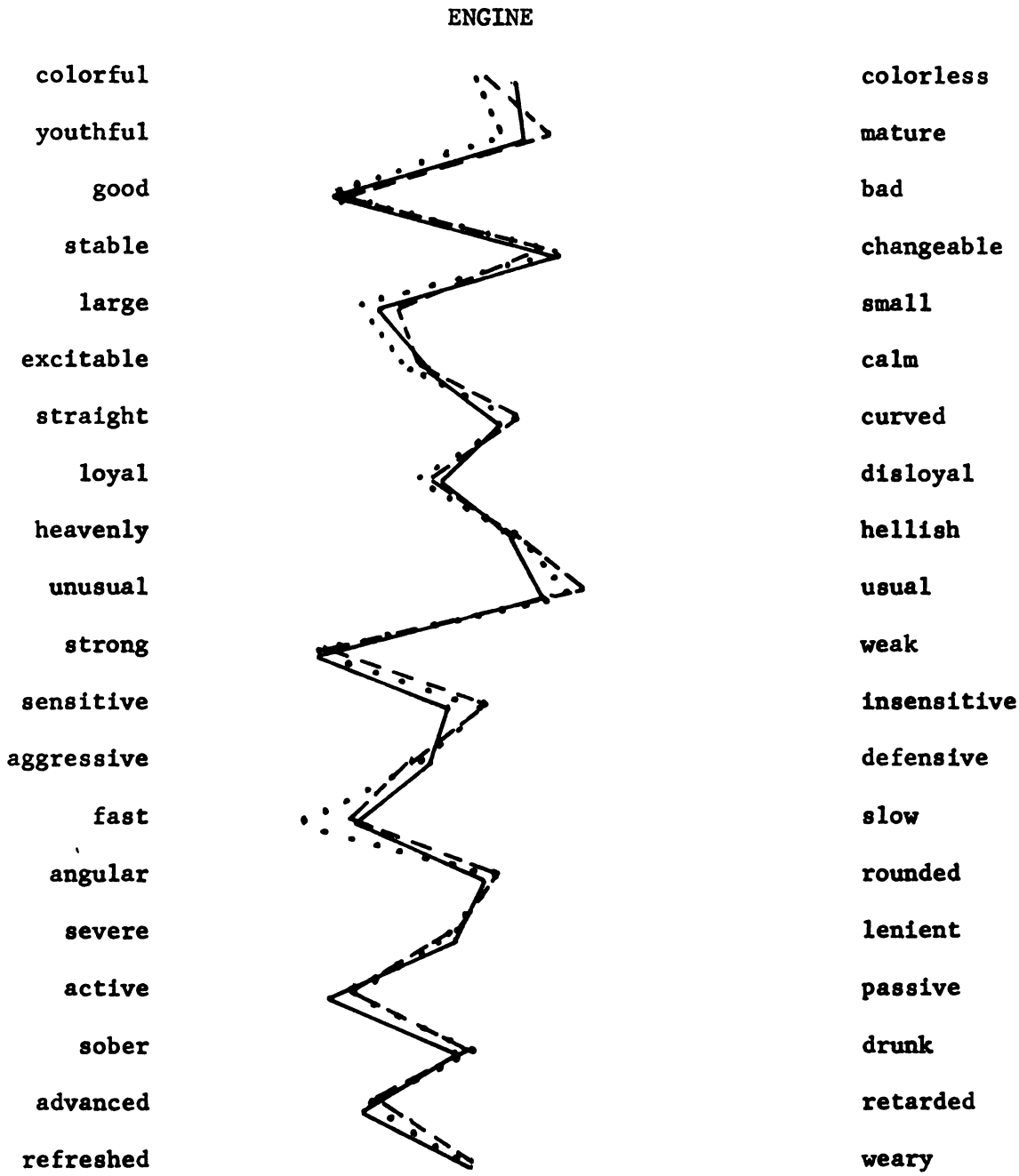
Comparison of variance across concepts for closed, open, and medium groups.

Standard Deviations Closed Individuals	Standard Deviations Open Individuals	Standard Deviations Medium Individuals
2.2	2.0	2.1
2.0	1.9	2.0
3.6	2.2	2.1
2.1	2.0	2.0
1.7	1.6	1.6
1.9	1.8	1.8
1.7	1.5	1.6
1.8	1.7	1.7
1.9	1.6	1.7
2.0	1.9	1.9
1.7	1.6	1.6
1.9	1.8	1.9
1.8	1.7	1.7
1.6	1.5	1.5
1.4	1.3	1.3
1.7	1.5	1.6
1.7	1.6	1.6
1.7	1.6	1.5
1.7	1.5	1.6
1.8	1.6	1.6
2.2	2.1	2.0
2.0	1.9	2.0
2.1	2.1	2.1
1.8	1.7	1.7
1.8	1.7	1.7
1.8	1.7	1.7
1.8	1.6	1.7
1.8	1.7	1.7
1.7	1.6	1.6
1.9	1.8	1.8
2.1	1.9	2.0
1.9	1.8	1.8
2.0	1.8	1.8
1.8	1.7	1.8
1.8	1.7	1.7
1.6	1.5	1.5
1.4	1.4	1.4
1.9	1.7	1.7
1.7	1.7	1.6
1.8	1.7	1.7

APPENDIX J

Mean judgment profiles.

Figure 3. Mean judgment profiles

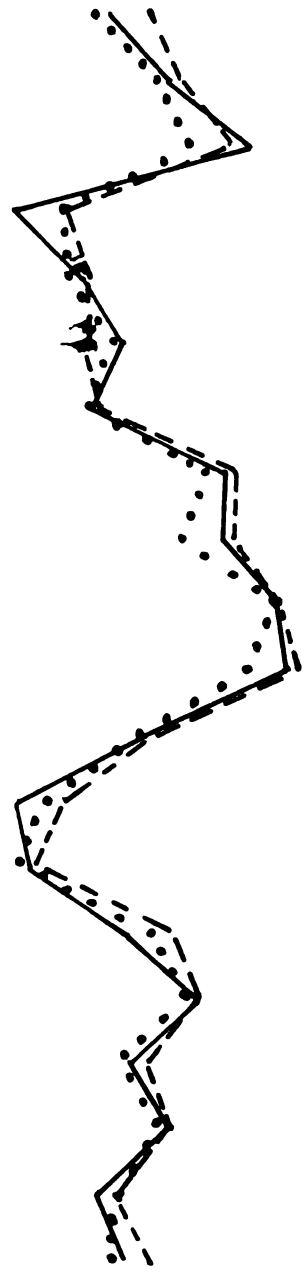


Key:

Closed _____ Open ----- Medium . . . . .

Figure 3 - continued

ENGINE



careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 4. Mean judgment profiles

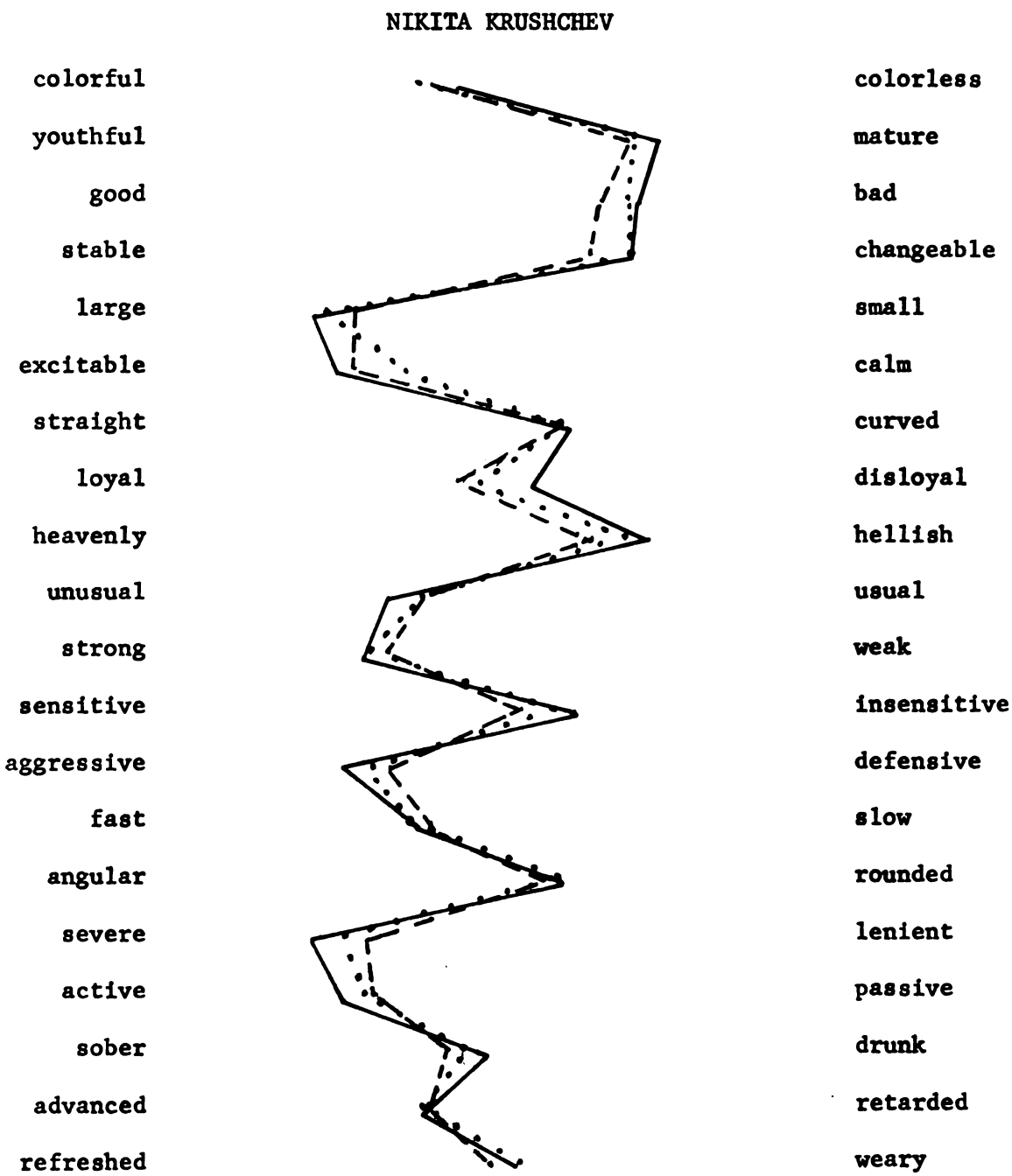
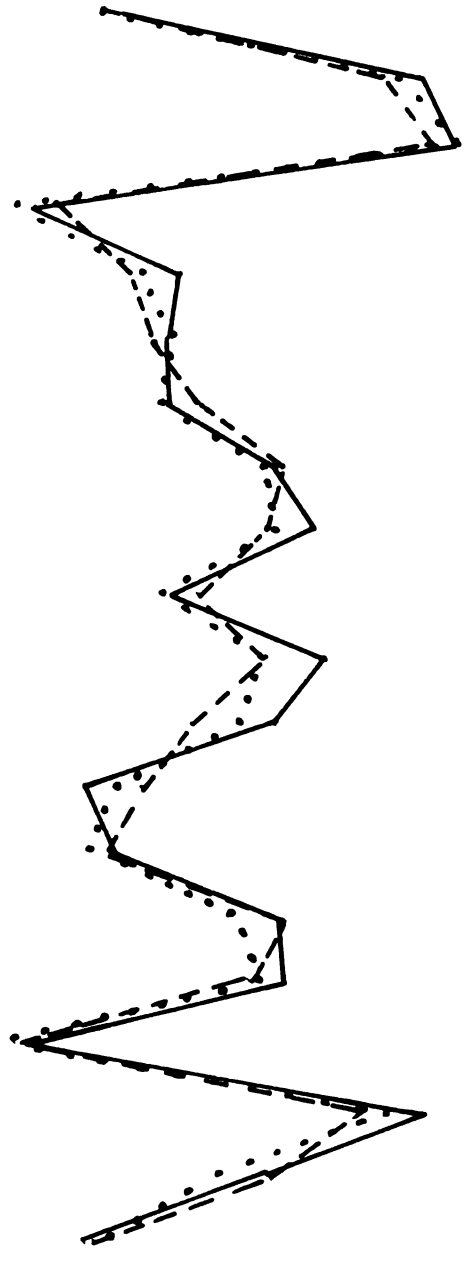


Figure 4 - continued

NIKITA KRUSHCHEV



careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 5. Mean judgment profiles

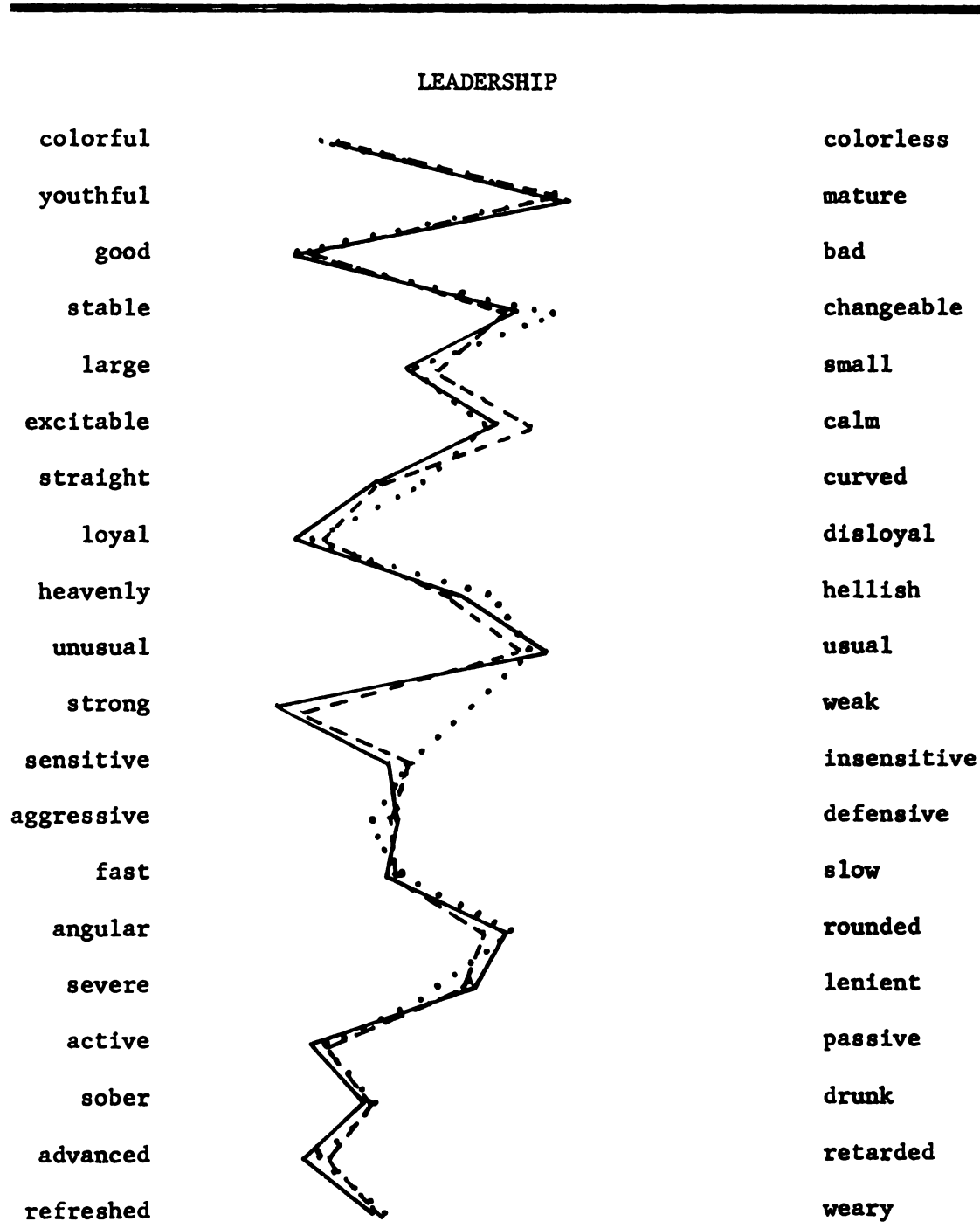
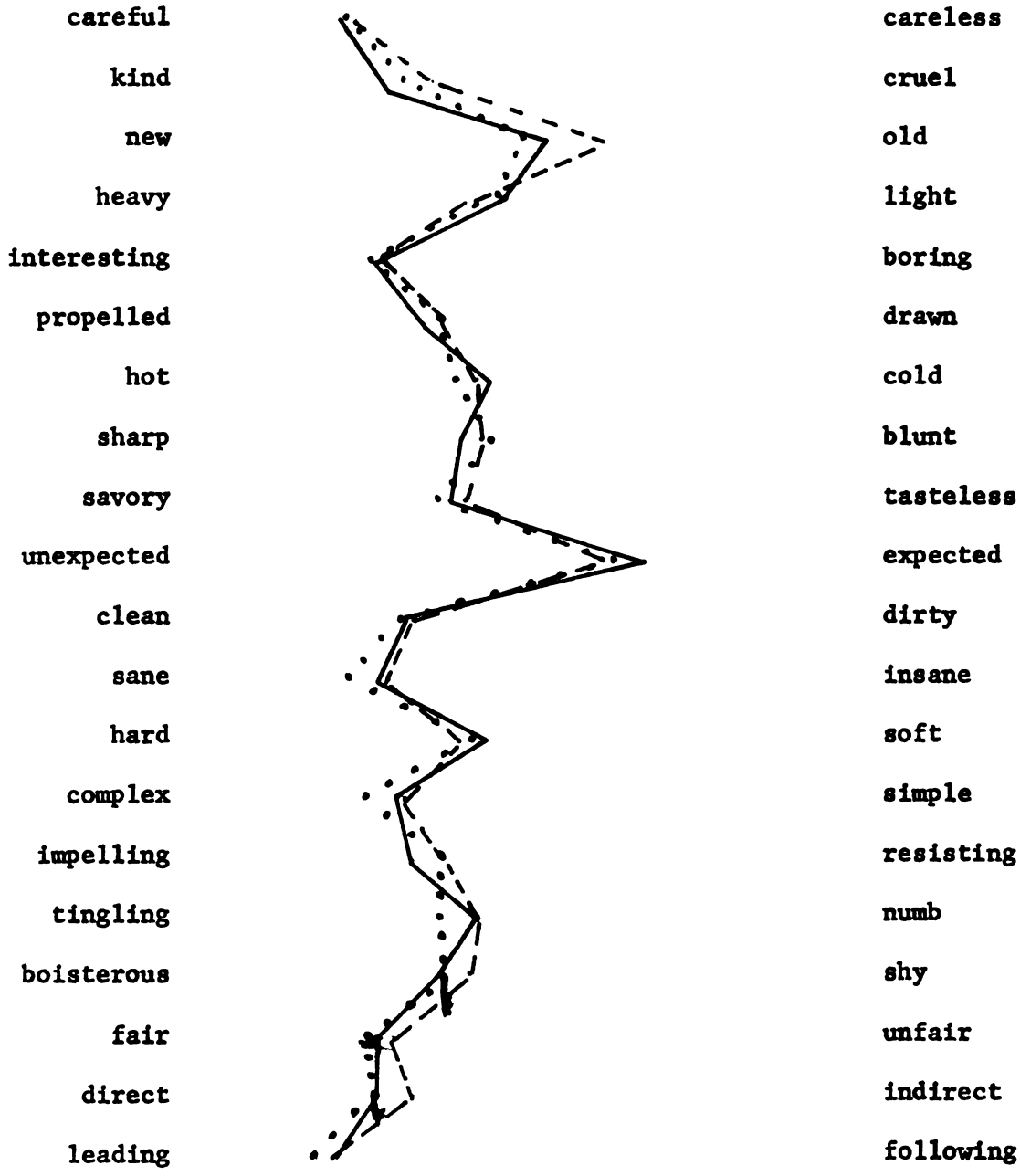


Figure 5 - continued

LEADERSHIP



Key:

Closed _____ Open ----- Medium . . . . .

Figure 6. Mean judgment profiles

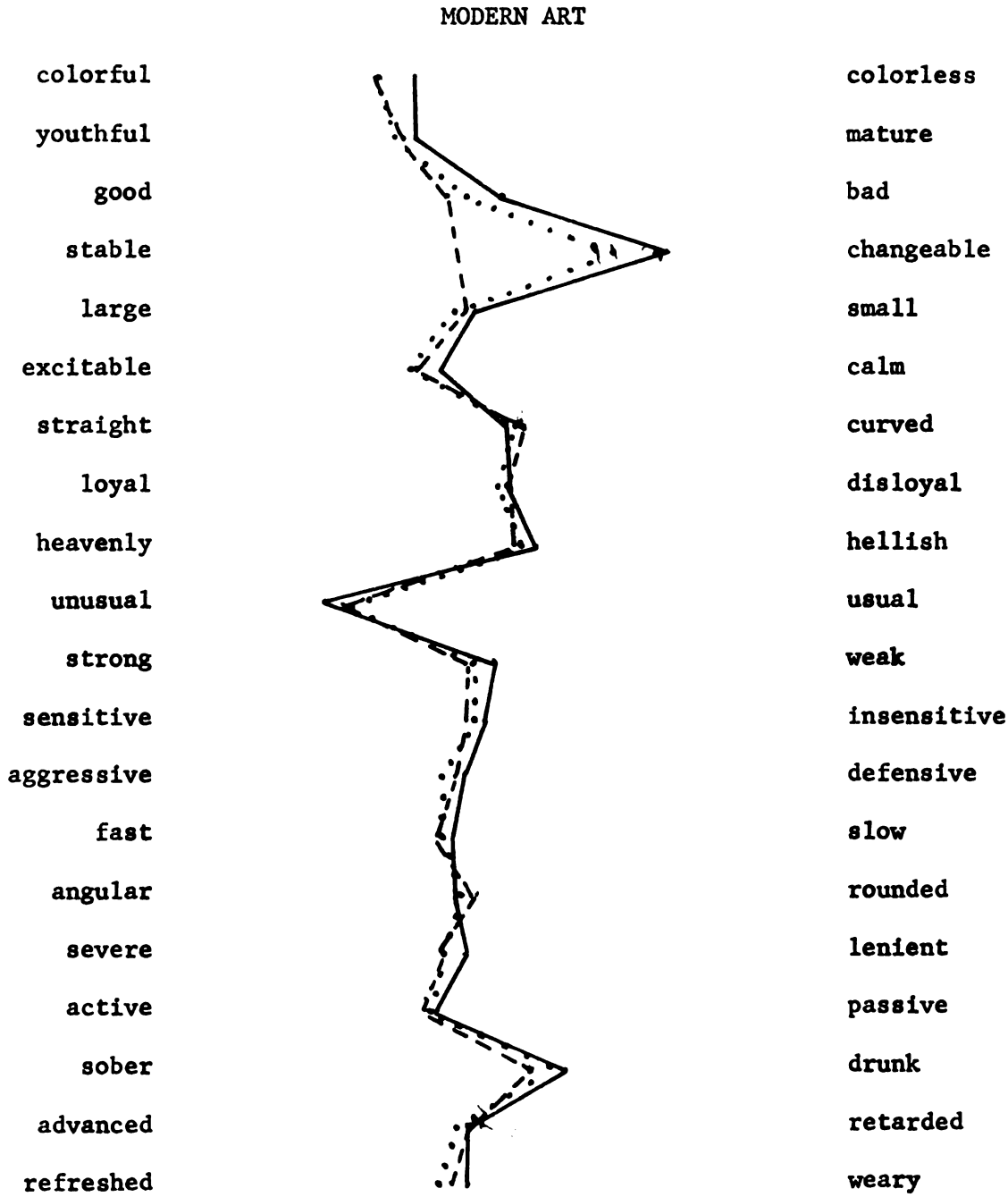
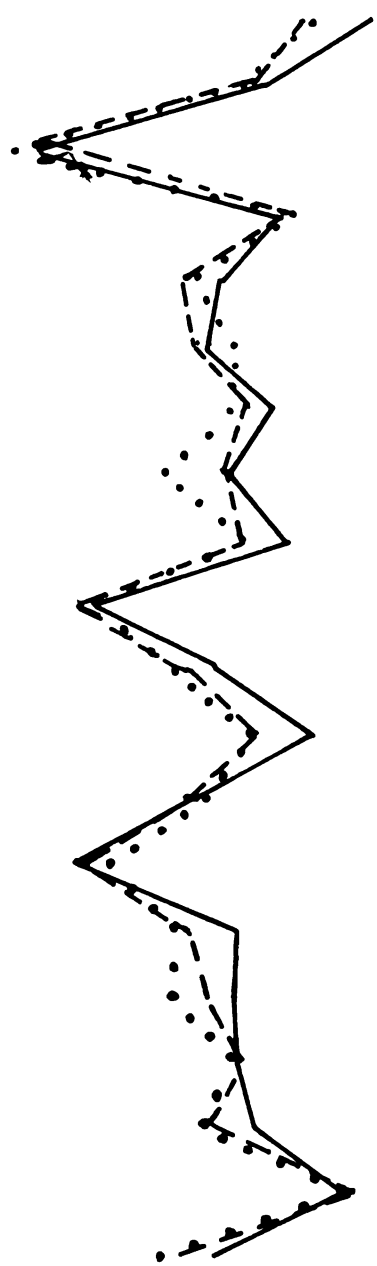


Figure 6 - continued

MODERN ART



careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 7. Mean judgment profiles

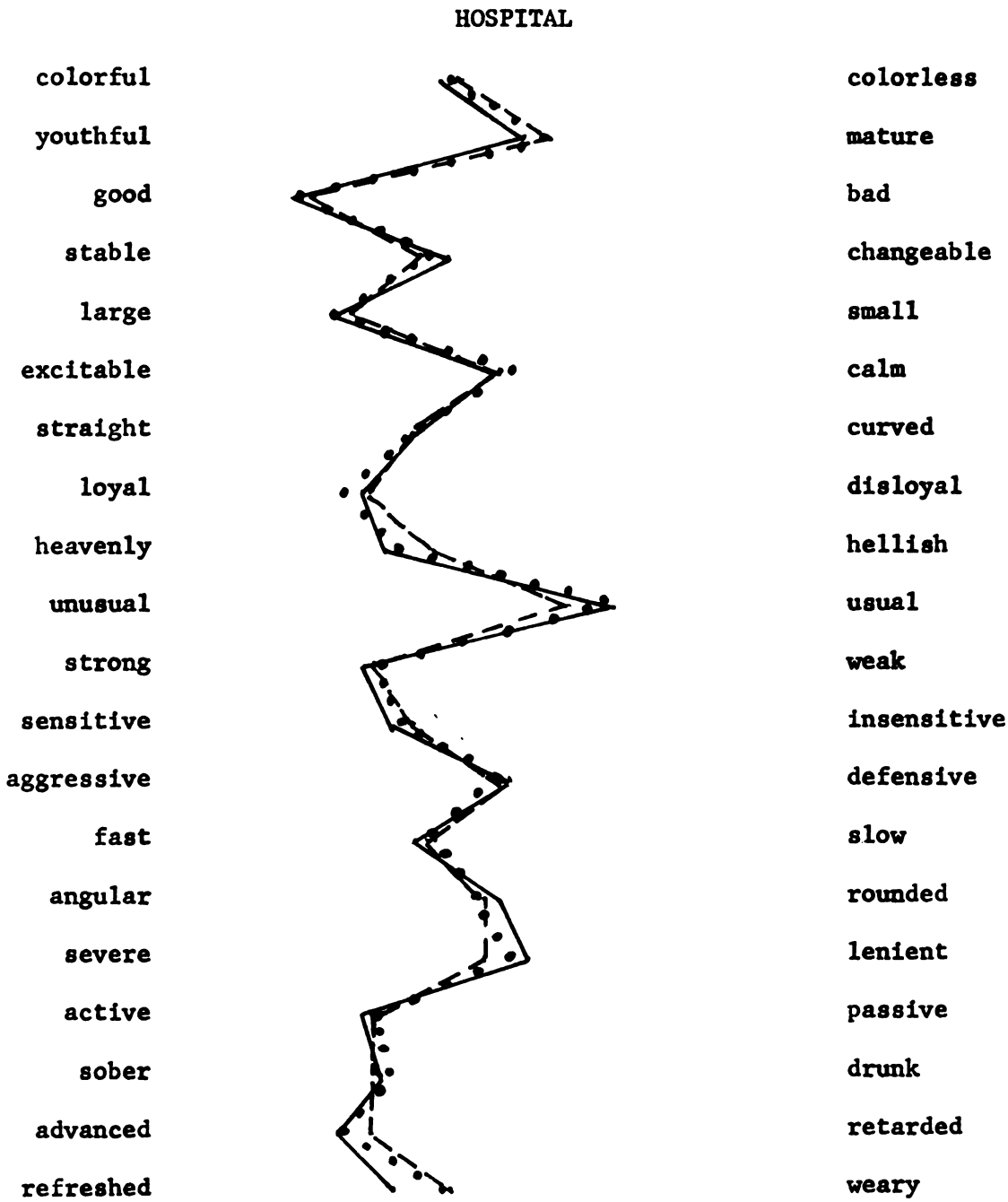
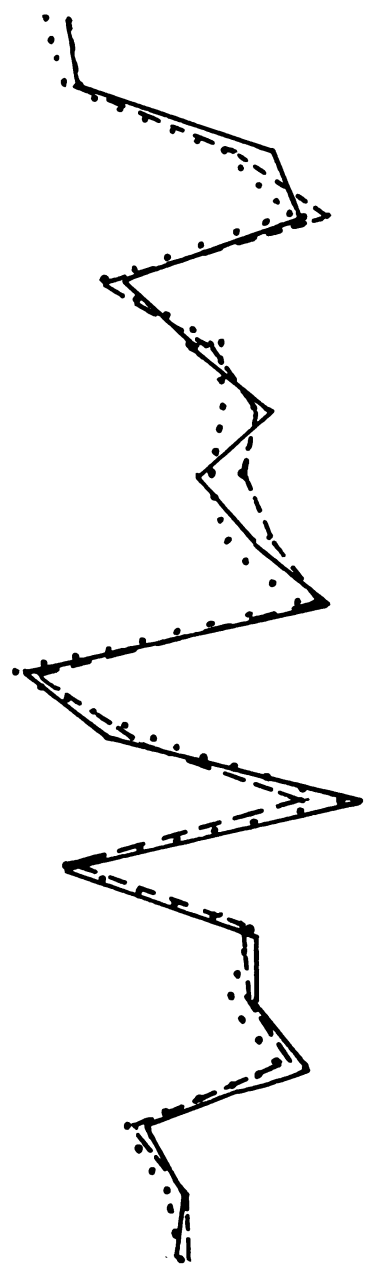


Figure 7 - continued

HOSPITAL

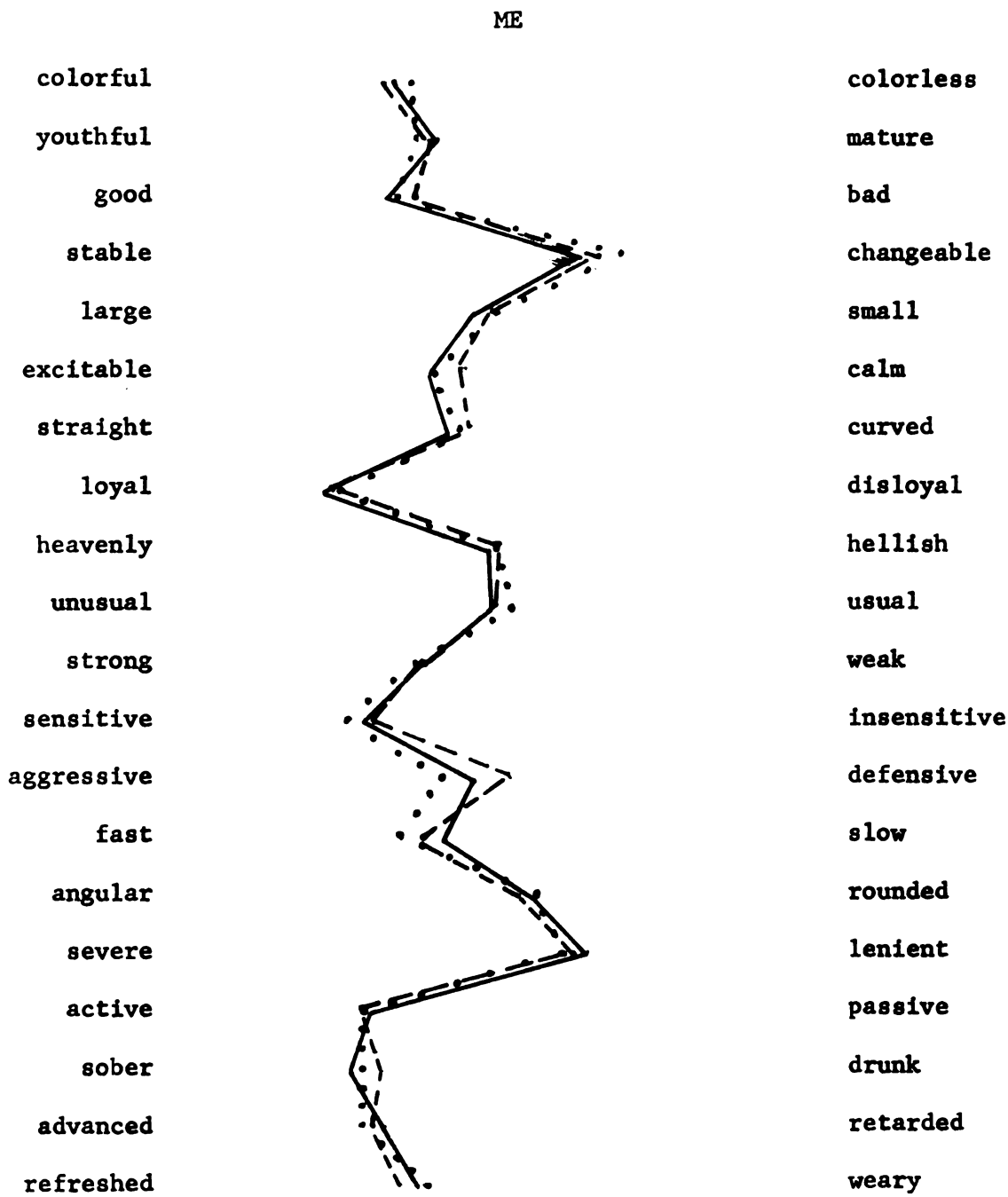


careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

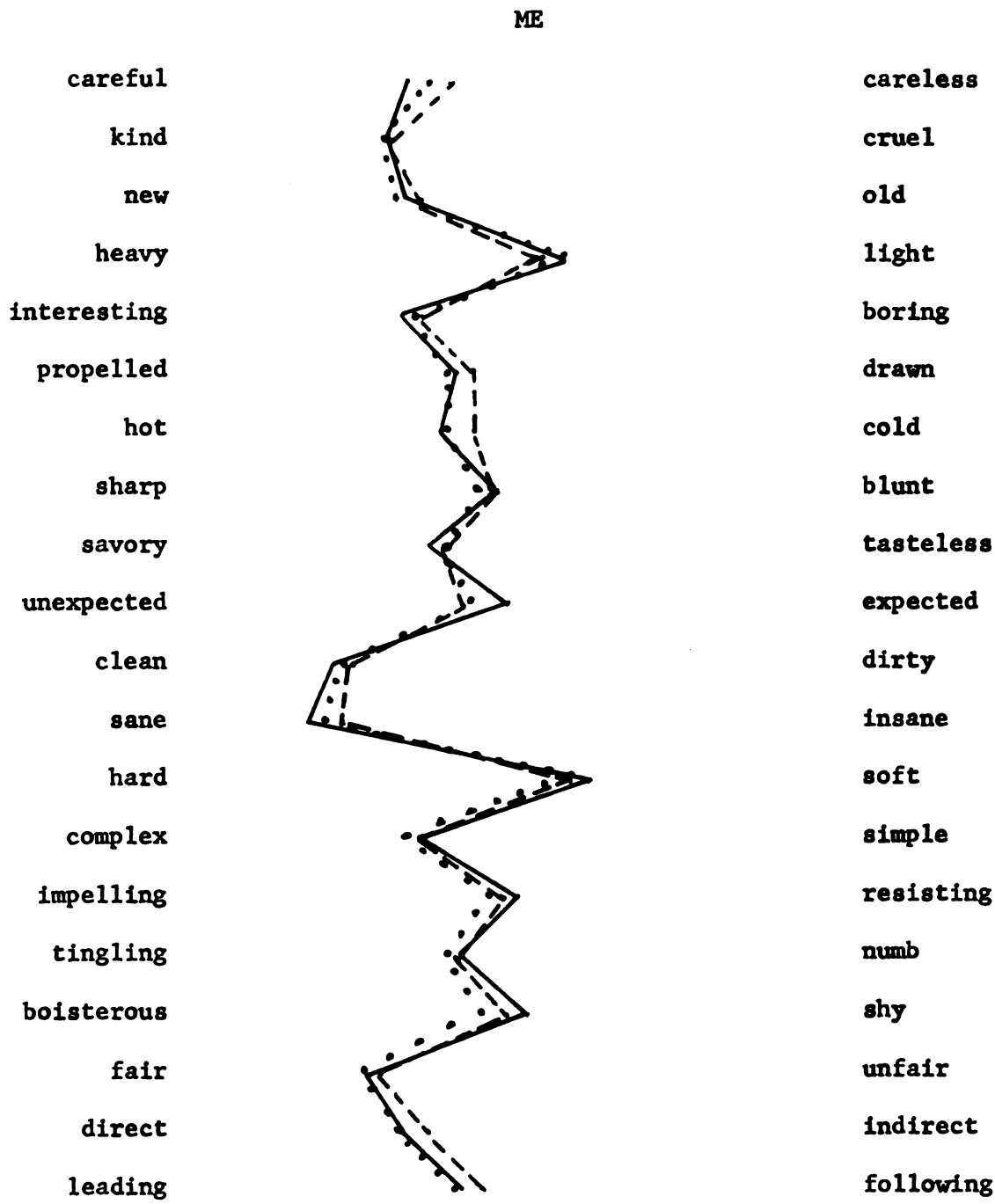
Figure 8. Mean judgment profiles



Key:

Closed _____ Open ----- Medium . . . . .

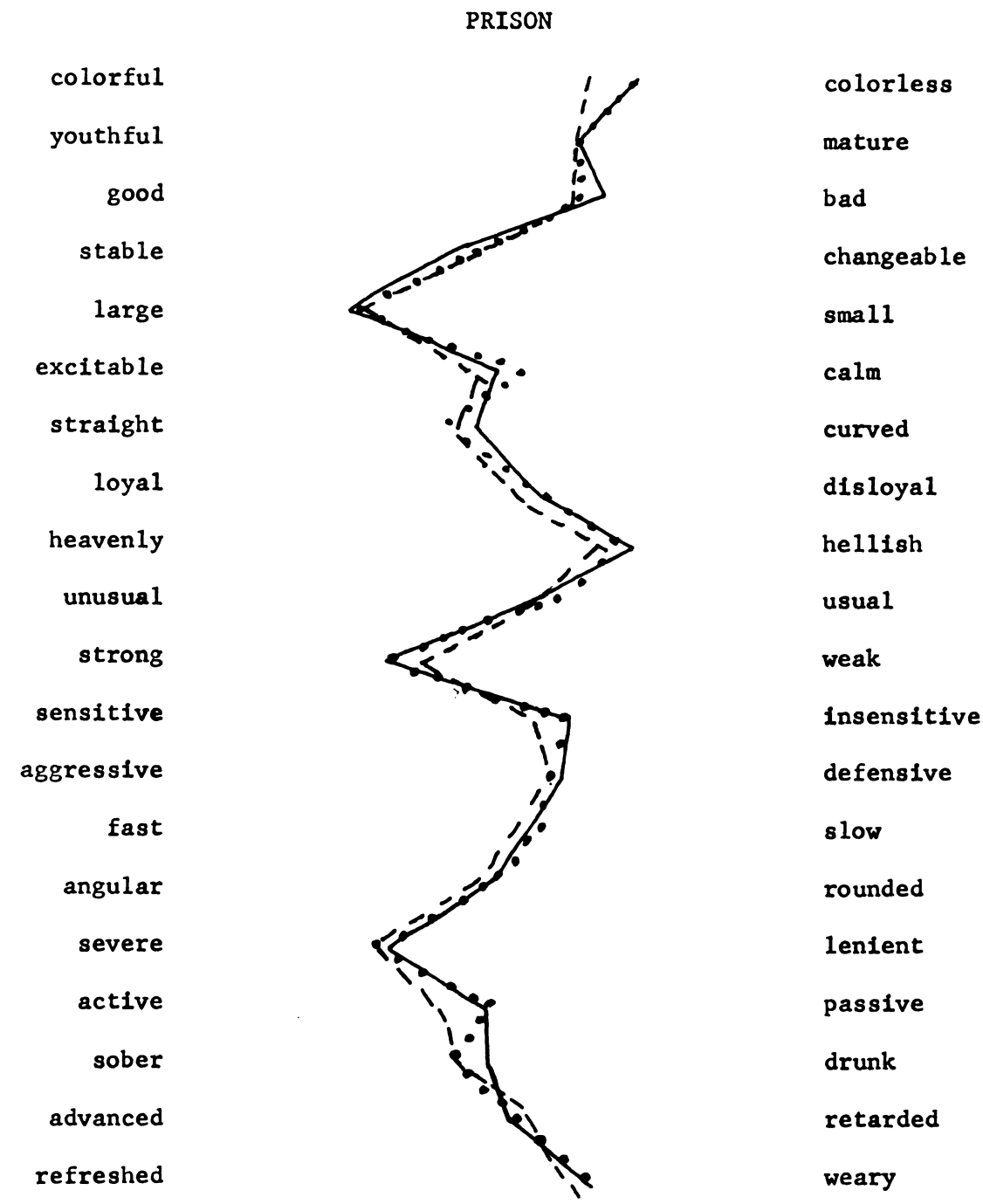
Figure 8 - continued



Key:

Closed _____ Open ----- Medium . . . . .

Figure 9. Mean judgment profiles

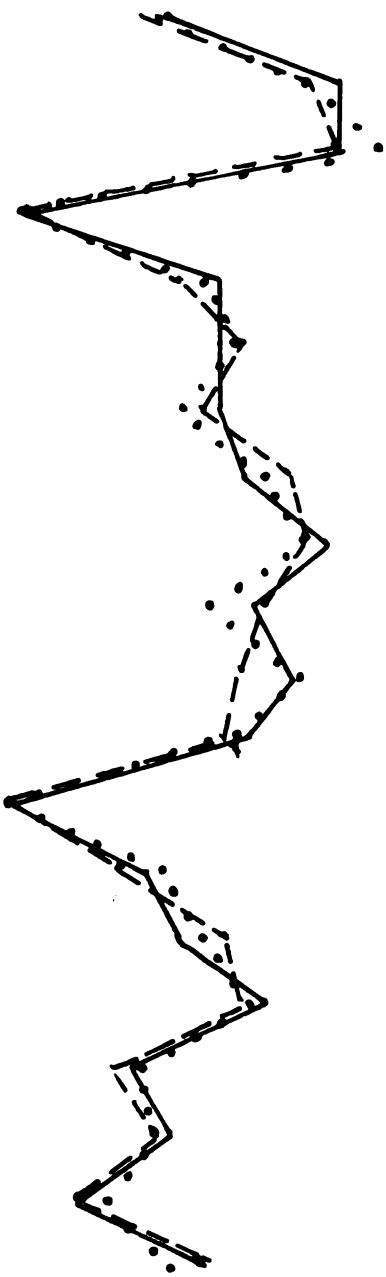


Key:

Closed _____ Open ----- Medium . . . . .

Figure 9 - continued

PRISON



careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 10. Mean judgment profiles

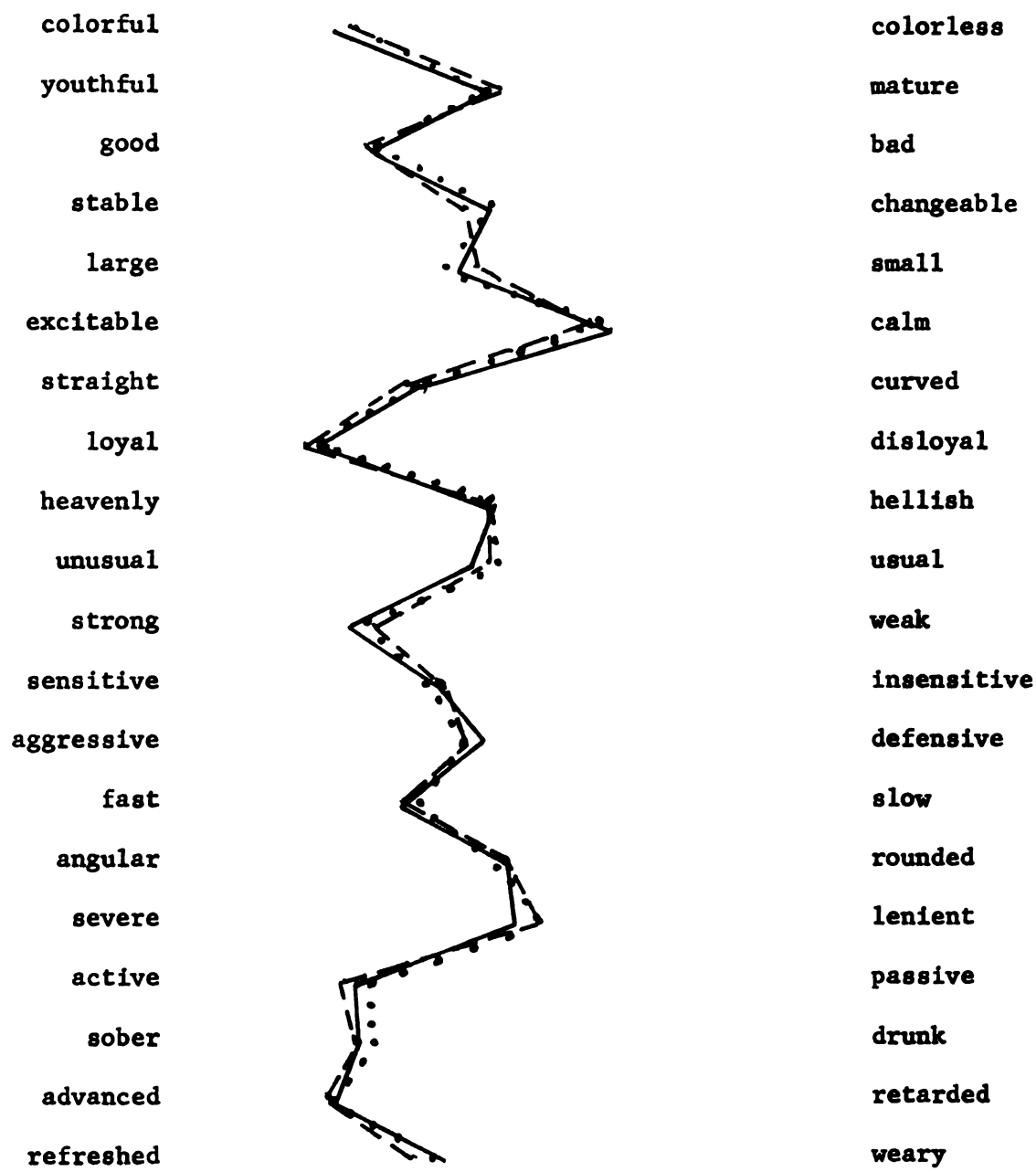
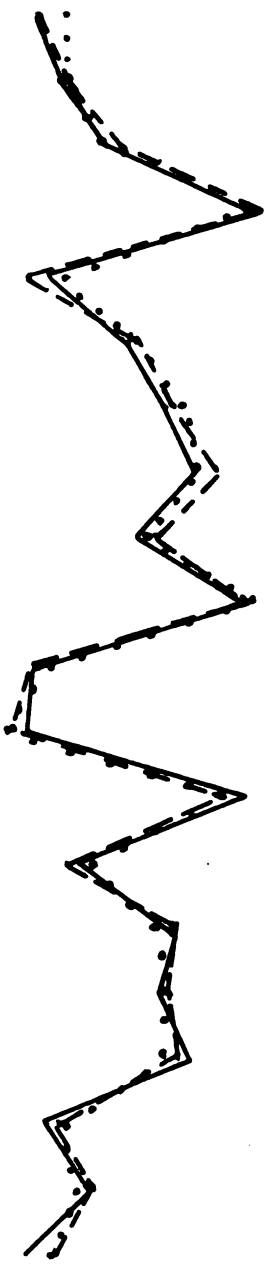


Figure 10 - continued

JOHN F. KENNEDY



careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 11. Mean judgment profiles

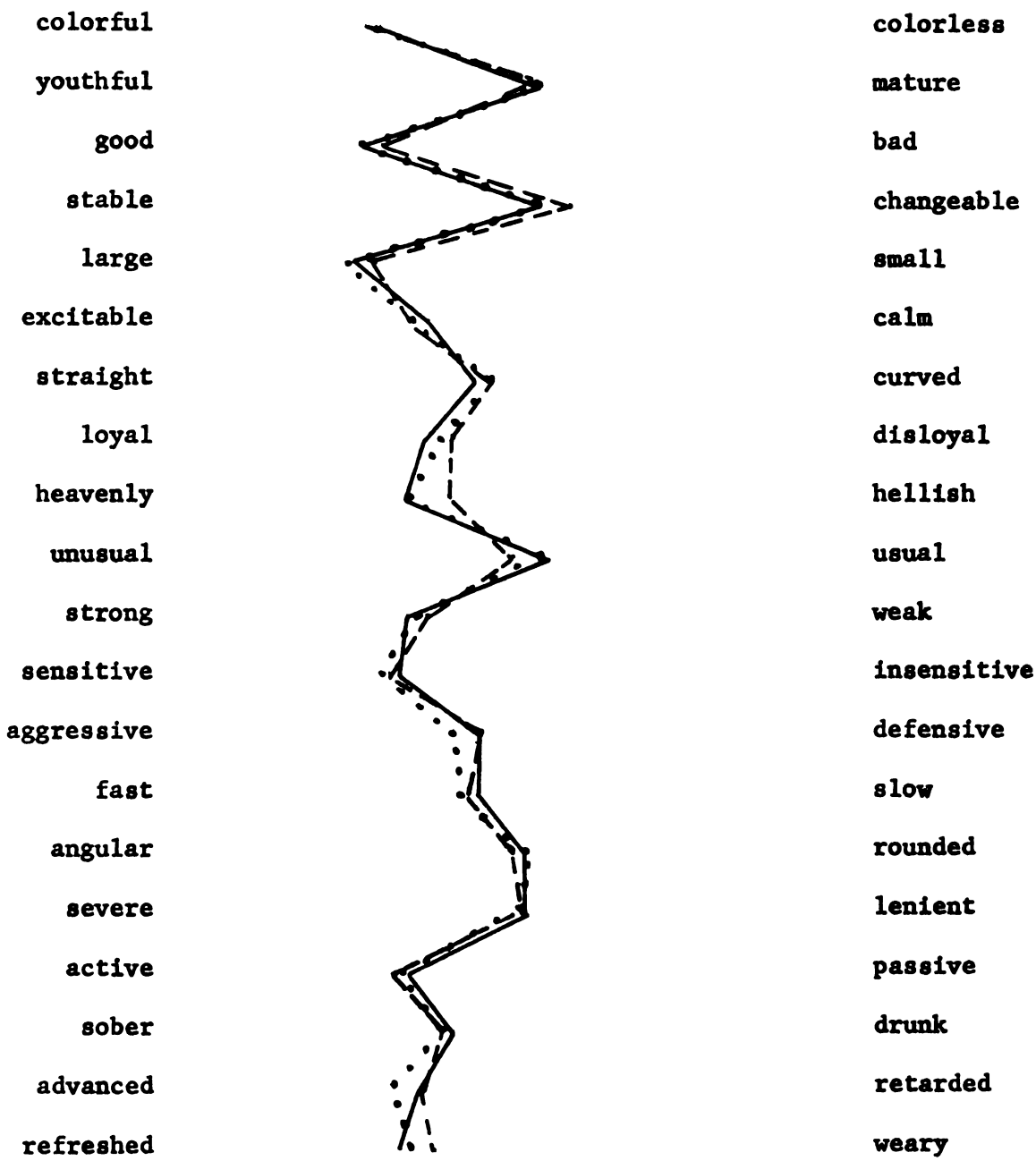
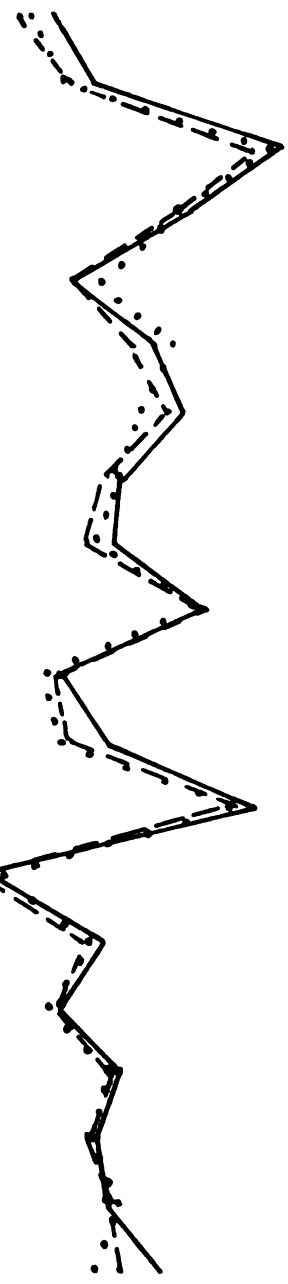


Figure 11 - continued

SYMPHONY

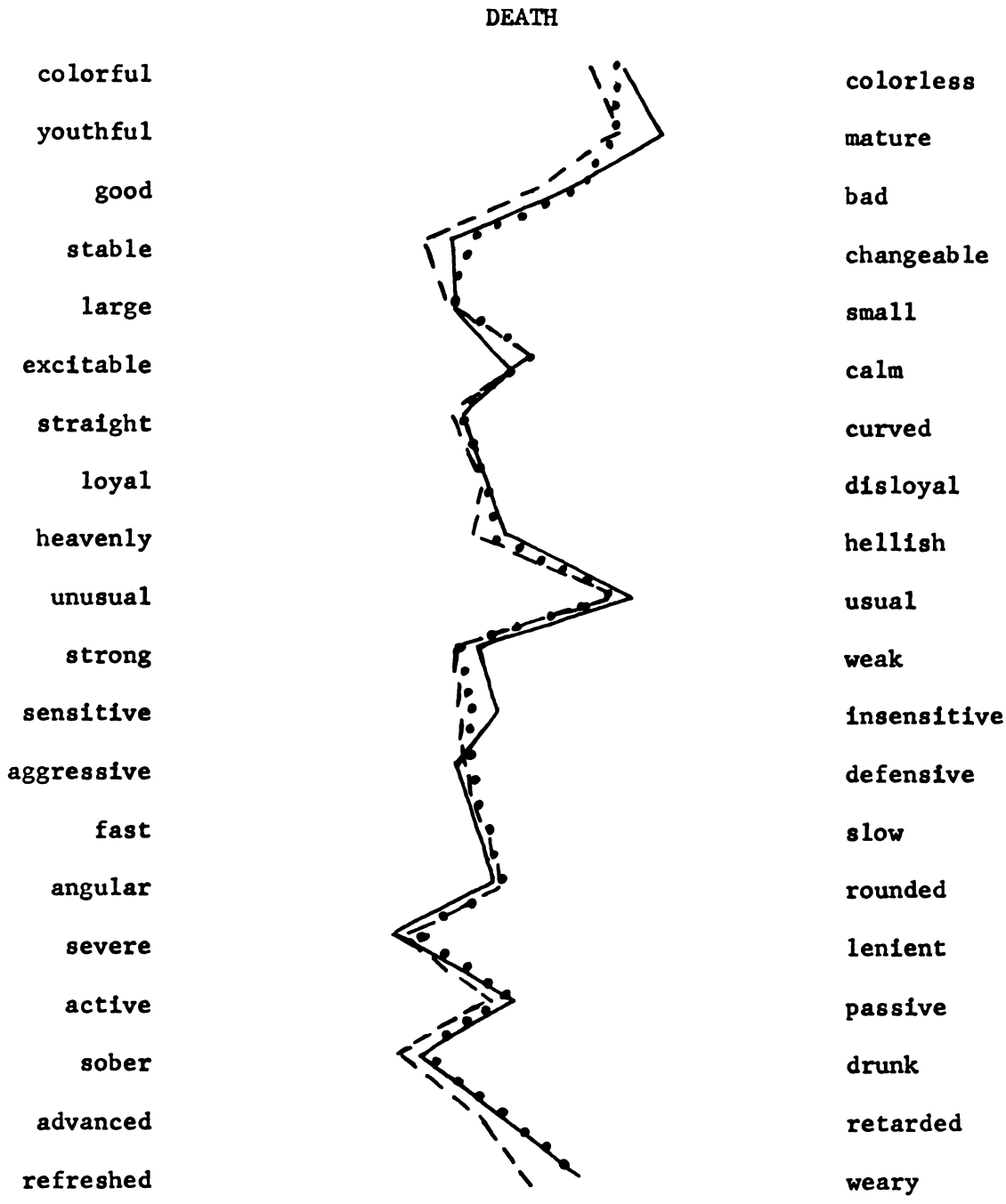


careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

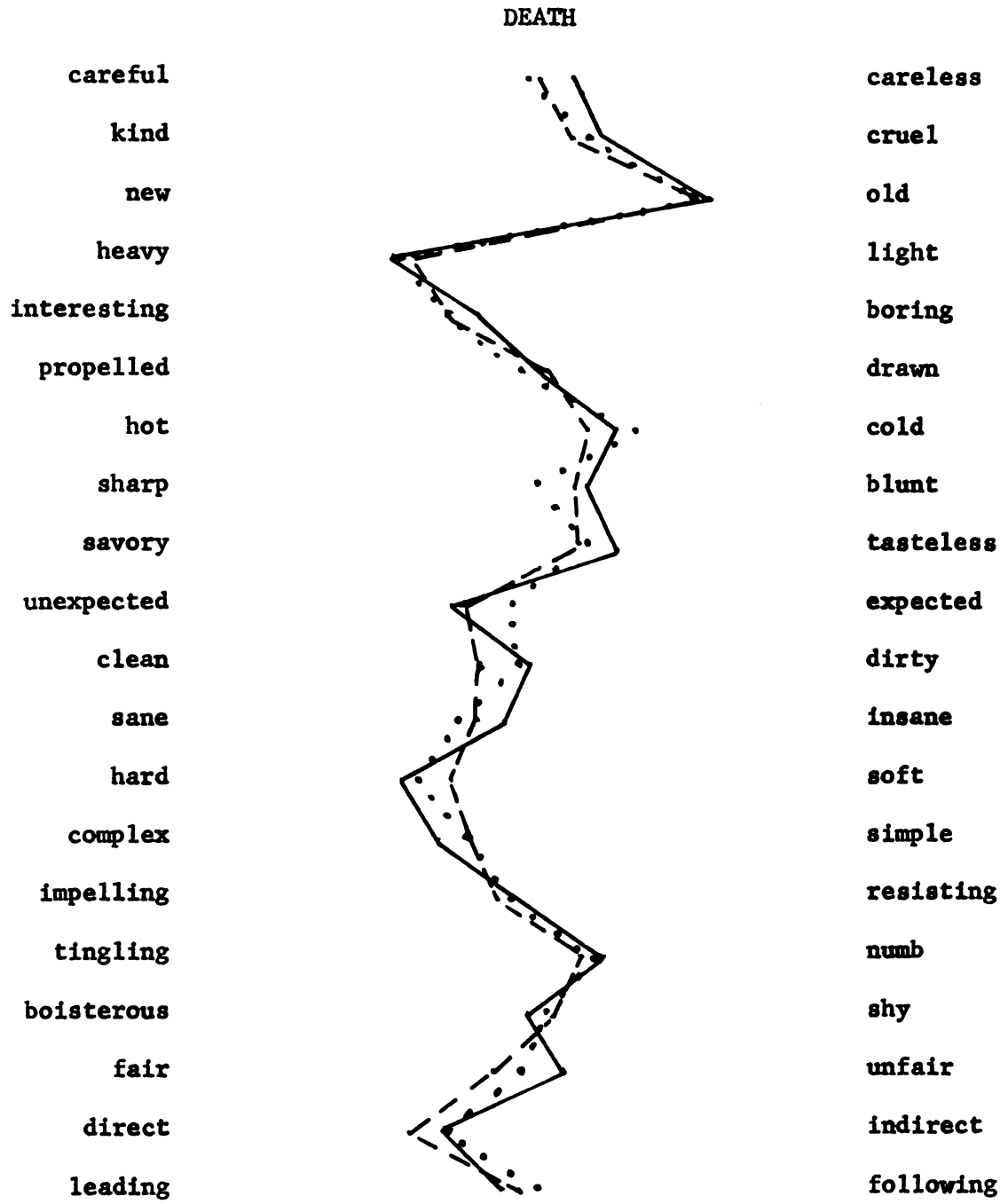
Figure 12. Mean judgment profiles



Key:

Closed _____ Open ----- Medium . . . . .

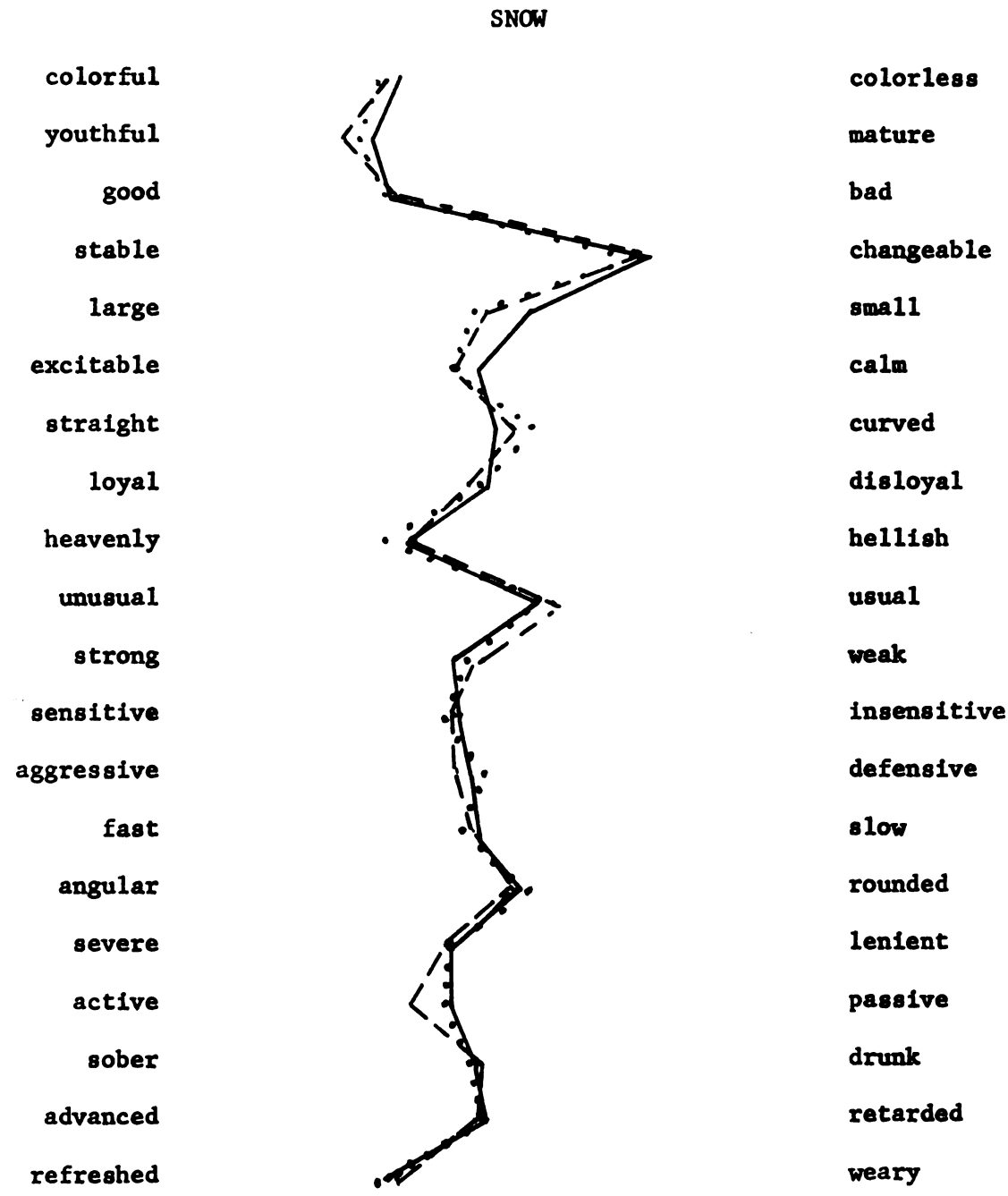
Figure 12 - continued



Key:

Closed _____ Open ----- Medium . . . . .

Figure 13. Mean judgment profiles

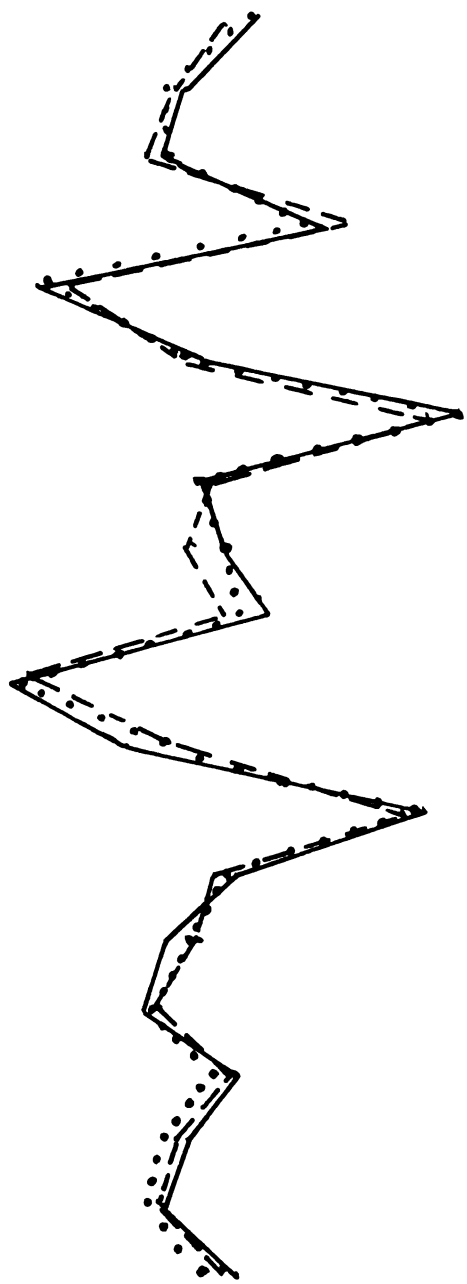


Key:

Closed _____ Open ----- Medium . . . . .

Figure 13 - continued

SNOW

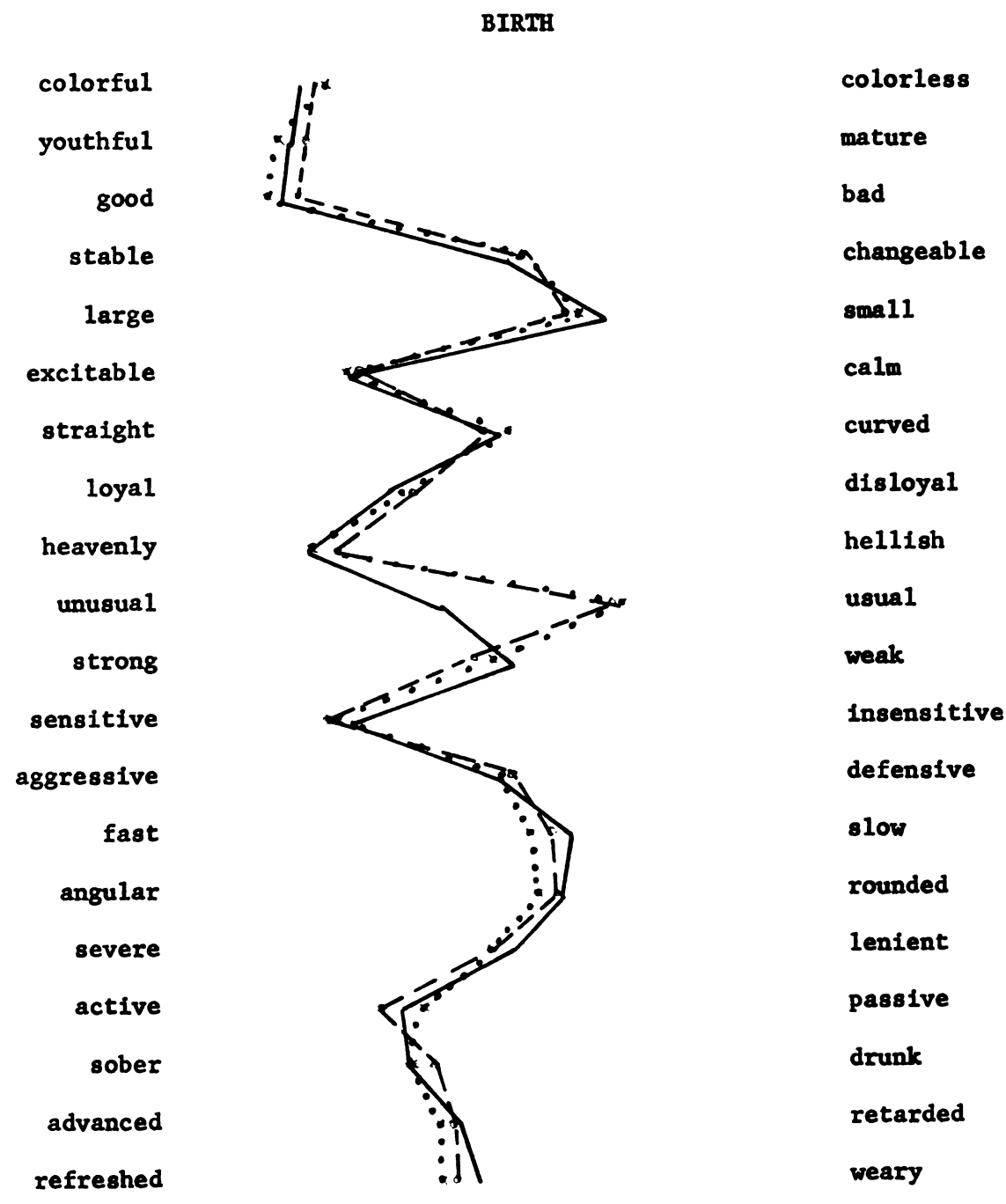


careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 14. Mean judgment profiles

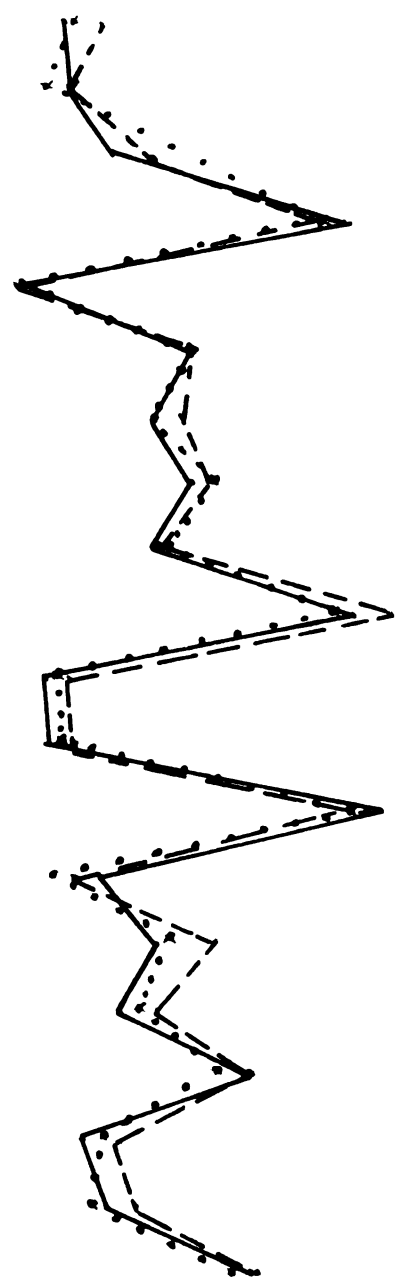


Key:

Closed _____ Open ----- Medium . . . . .

Figure 14 - continued

BIRTH



careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 15. Mean judgment profiles

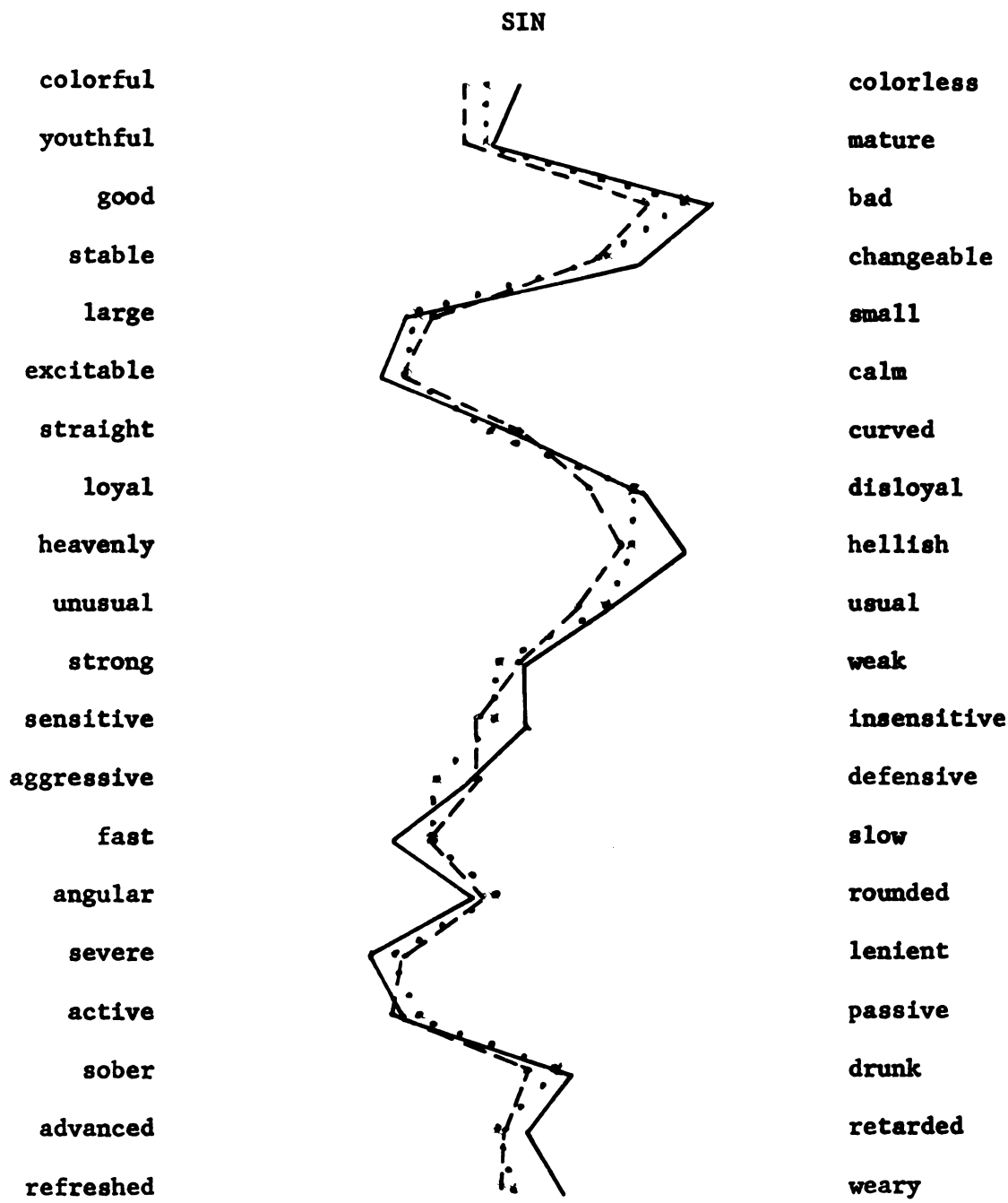
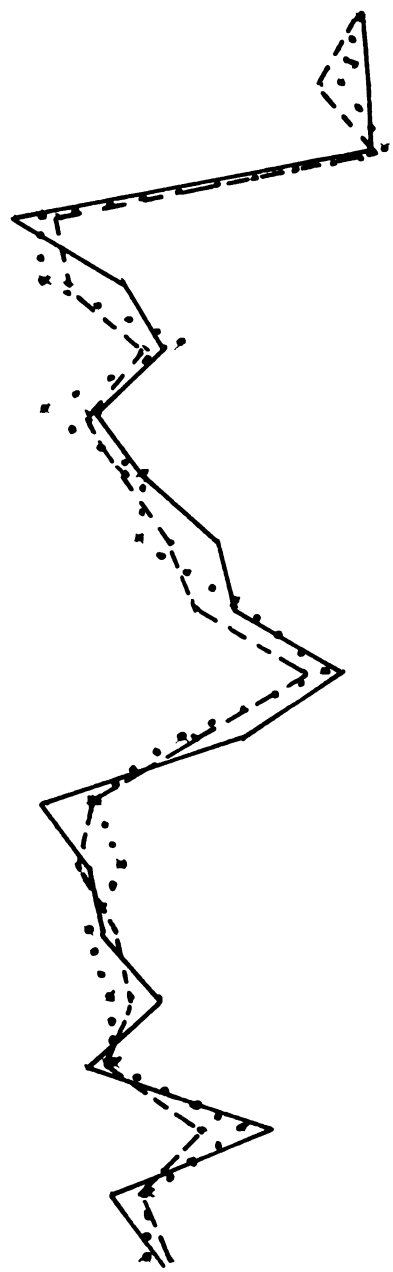


Figure 15 - continued

SIN



careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 16. Mean judgment profiles

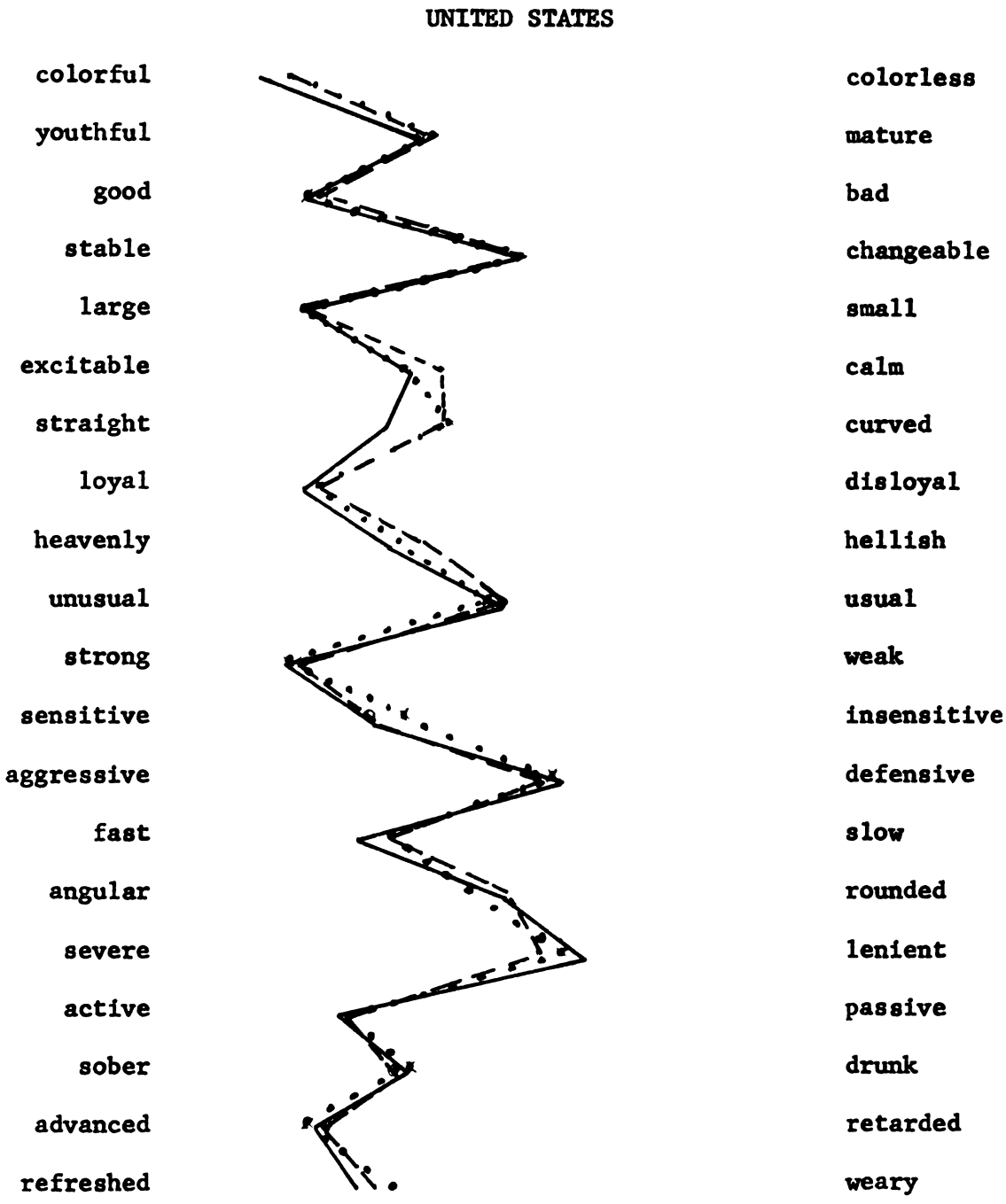
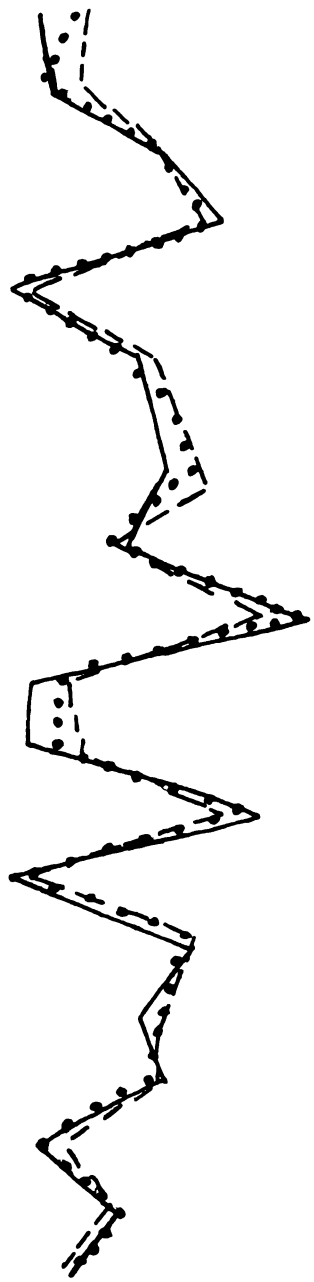


Figure 16 - continued

UNITED STATES

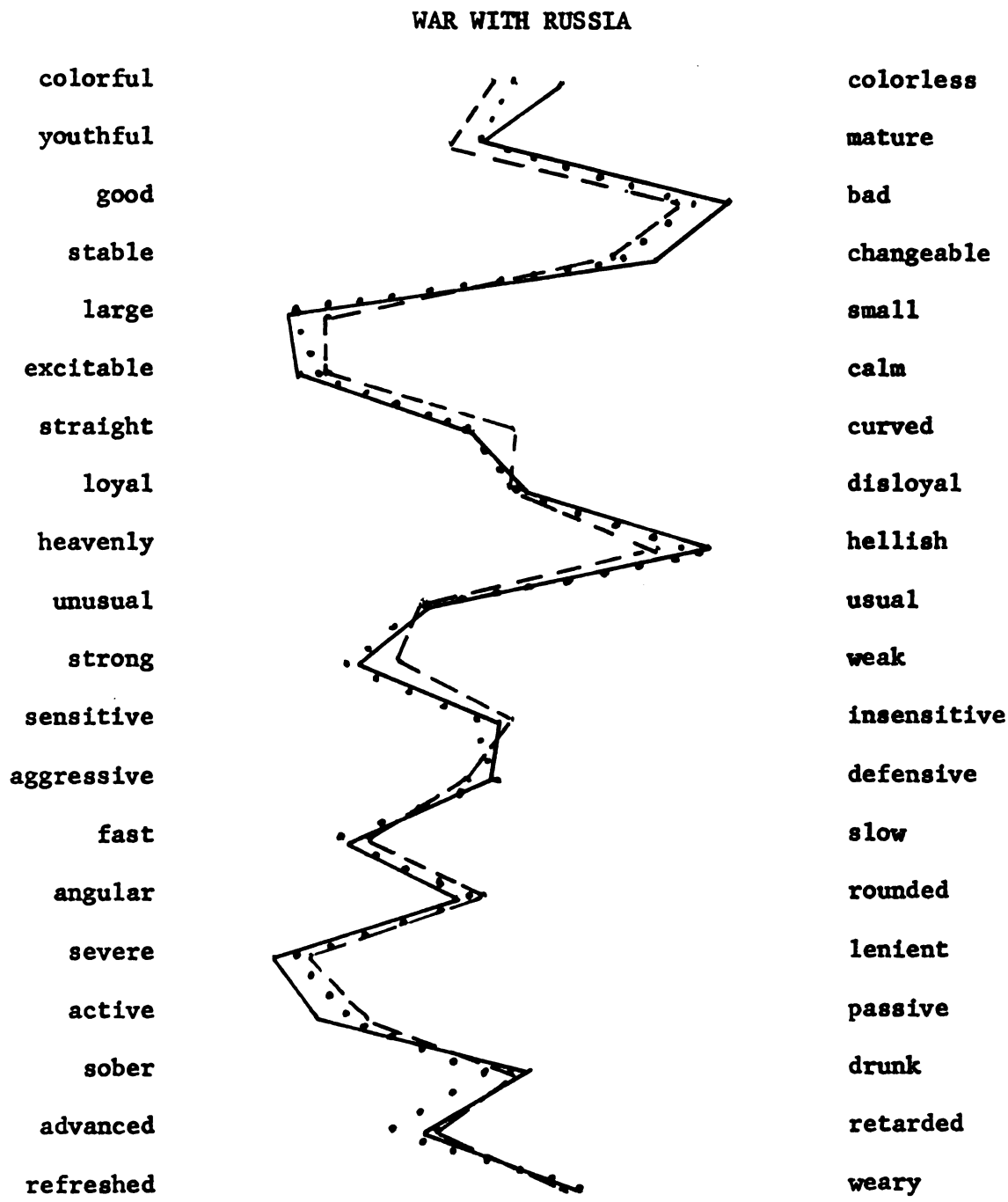


careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 17. Mean judgment profiles

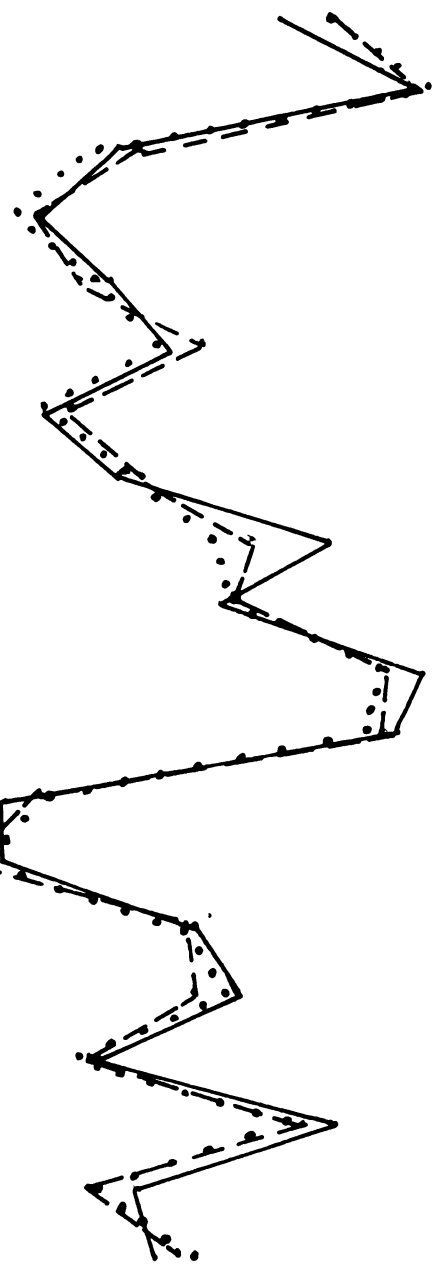


Key:

Closed _____ Open ----- Medium . . . . .

Figure 17 - continued

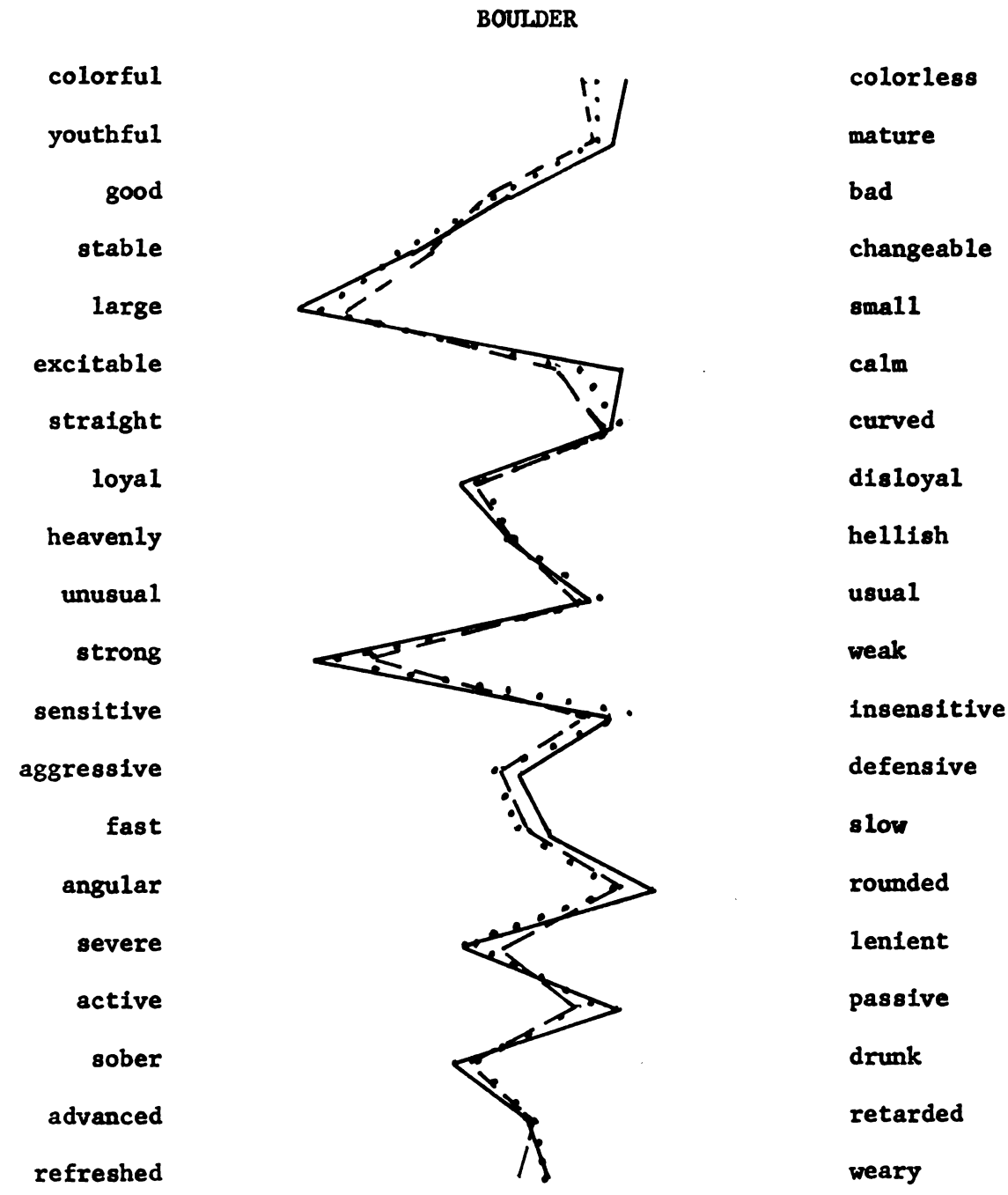
WAR WITH RUSSIA

careful		careless
kind		cruel
new		old
heavy		light
interesting		boring
propelled		drawn
hot		cold
sharp		blunt
savory		tasteless
unexpected		expected
clean		dirty
sane		insane
hard		soft
complex		simple
impelling		resisting
tingling		numb
boisterous		shy
fair		unfair
direct		indirect
leading		following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 18. Mean judgment profiles

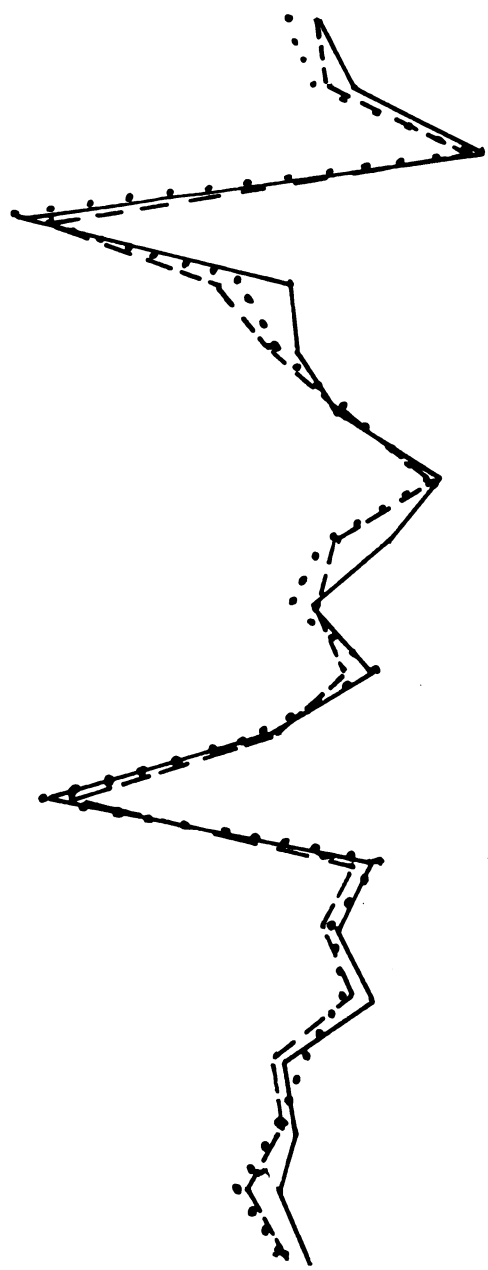


Key:

Closed _____ Open ----- Medium . . . . .

Figure 18 - continued

BOULDER

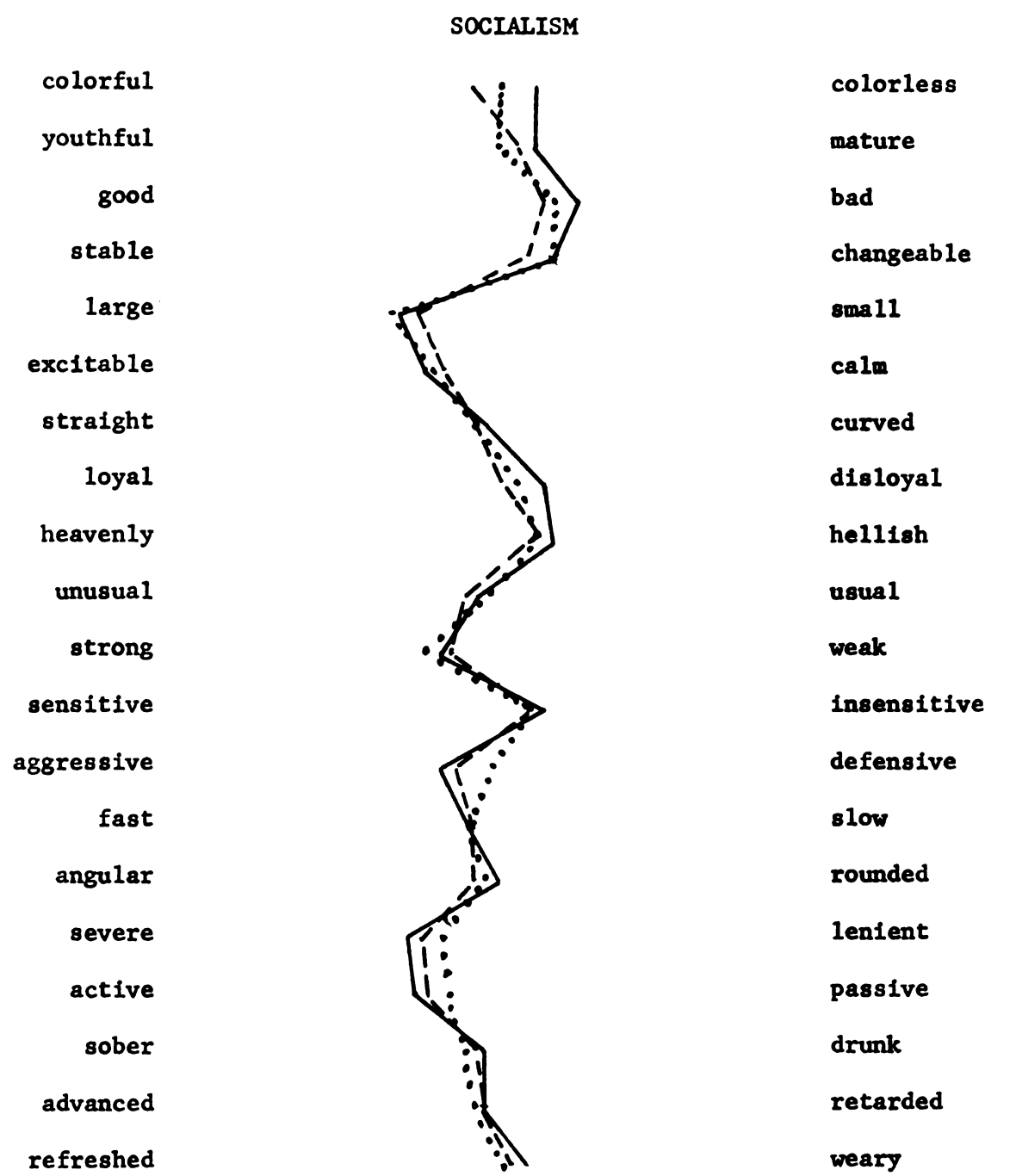


careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

Figure 19. Mean judgment profiles



Key:

Closed _____ Open ----- Medium . . . . .

Figure 19 - continued

SOCIALISM

careful	careless
kind	cruel
new	old
heavy	light
interesting	boring
propelled	drawn
hot	cold
sharp	blunt
savory	tasteless
unexpected	expected
clean	dirty
sane	insane
hard	soft
complex	simple
impelling	resisting
tingling	numb
boisterous	shy
fair	unfair
direct	indirect
leading	following

Key:

Closed _____ Open ----- Medium . . . . .

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