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A DISSERTATION

Presented in Partial Fulfillment of the
Requirements for the Degree of Doctor of Philosophy
in the Graduate School of
The Ohio State University

By

John Dahir Shibley, B. S., M. A.

*****

The Ohio State University
1964

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There is much to be understood about the processes of perception during the communication act. As with other constructs, such as learning and personality, the factors which bear influence upon the perceiving process make experimental control alarmingly complex. The difficulty of studying perception is compounded by the verbal confusion which arises out of attempts to explain certain behavior. For example, if a subject is presented a speech and asked to identify certain important words from the speech content immediately after its completion, it is difficult to determine whether any failures of identification are due to faulty perception or to faulty memory. Thus, while investigations of this sort have been undertaken by psychologists, albeit not with speeches and words but with visual images, students of communication have generally avoided the task.
It is believed that an understanding of the perceptual behavior of a group of persons may promote a more comprehensive understanding of how individuals will respond within some given speech situation.

At the outset it is noted that each person and his behavior is part of his unique physical structures, including the receptor, central, and effector nervous systems as well as the skeletal, respiratory, digestive, and other systems. It is also noted that the individual is part of a larger complex, a culture or sub-culture, which exerts additional influence upon his perceptual habits.

It appears useful to consider this study as an exploratory attempt to examine a set of concepts or intervening variables which constitute part of the perceptual behavior of an individual during the communication process. Most researchers in the area of perception are agreed that what a person does reflects to some extent what he has perceived. In other words, the content of one's perception is more or less congruent with one's pattern of behavior. A general hypothesis may be formulated which parallels the preceding statement: how a person reacts to certain aspects of a speech depends in part upon what words he has actually attended to or perceived during the presentation. It is with the listeners of the communication act, therefore, that
this study is concerned.

The questions which confronted this research were central to the problem of perceiving words or verbal stimuli within the communication process. Generally, perception was studied by noting subject responses to questions on scales which elicited reactions to verbal stimuli. It is necessary, therefore, to include operational definitions of the component factors of perception in this chapter. The experimental procedures also will be noted. Four sections will cover the above mentioned areas in question: they are headed (1) General Purpose, (2) Definition of Terms, (3) Statement of Specific Hypotheses, and (4) Experimental Procedures.

General Purpose. Speeches are made up of words and other symbols. The question arose, "Was it likely that those who retained the critical words of a speech capable of acquiring more information from that speech than were those who failed to perceive the critical words?" This required the construction of a scale which would assess the subject's ability to perceive critical words. It would, concomitantly, act as a predictive measure of the subject's reception of additional information within the communication.

Additionally, it was a general purpose to explore some of the processes involved in perception. (The scale alluded to in the preceding paragraph is one example.) For
while there has been abundant work in perceptual research, very little, if any, has been strictly concerned with the communication act. Most of the perceptual studies have been in "ground-configurations," "time-reactions," "leadership valences," and visual accuracies. Only recently have attempts been made to study the perceptual processes as they are related to social phenomena. (Particularly noteworthy in this general area are the works of Heider, Bruner and his colleagues, Bartlett, Allport, Lewin, and Osgood and his associates. Work of these researchers will be reported on in the review of the literature.)

In the scientific sense, very little is known about the cues or stimuli to which an audience may be attending. For instance, suppose a communicator is interested in changing the current meaning of a word as it is generally held by a group. The question arises, "Do word meaning-changes depend, at least partly upon perceived-recognition of the word in question?"

It was also the general purpose of this study to determine whether or not a word may be characterized as possessing some meaning-propensity for other words, and more specifically, for certain speech topics. Word association tests attest to the saliency of words in relationship to other words; however, the closeness of one word to another word in meaning is not
necessarily reflected in word association tests.¹


Definition of Terms. Four important terms may be operationally defined. Three less important terms are included. In the following chapter, each of the important terms is further elaborated and discussed.

Important Terms Operationally Defined:

1. Cognition: cognition is defined as the subject's synonym of a critical word. It is assumed that the meaning of the critical word is identified by the subject when he indicates his synonym preference. A subject may think of "purpose" as a synonym for the critical word "objectivity." When he is tested later, the subject's preference for a different synonym may be considered as a change in cognition. The subject's response on a multiple-choice scale is scored on an IBM Answer Sheet. Given a word and five possible choices of synonyms, the subject's selection constitutes his cognition of that word. Thus, as it is viewed in this study, cognition is the synonym of a given word. An example item of the Cognition Scale is now presented.

Objectivity most nearly means

1. Goals
2. Purpose
3. Open-mindedness
4. Preciseness
5. Analyze
2. Recognition: recognition is defined as the accuracy in identifying a critical word among five words. This scale differs from the typical recall test in that it requires the subject to specify an exact word. It is not enough that the subject understand or recall the information of a speech presented to him. His task requires the recognition of certain exact words. The inference to be drawn from this definition is that those who are capable of detecting the critical words have actually attended more carefully to the speech than did those who were faulty in their detections. The subject's response on a multiple-choice scale is scored on an IBM Answer Sheet. Recognition is determined by the correct selection of a word among five alternatives. Given five words a subject is asked to select the one which appeared in a speech presented to him. An example item of the Recognition Scale is now presented.

1. Selfish
2. Love
3. Inspired
4. Passion
5. Destructive

One of the foregoing words appeared in the speech; if the subject correctly identifies that word, he is said to have made accurate recognition.

3. Relational: relational is defined as the meaning-closeness of a critical word to the speech topic "Liberalism." The Relational Scale acts as a restricted word-association test, in that the subject associates a word to five speech topics. The subject's response is scored on a forced-choice scale. He is given a word and five speech topics,
including "Liberalism". Then he is asked to numerically express the order in which he would expect to hear the word in the five topics. In the following example, the subject associated the word wonder closely to the speech topic Liberalism, as he scored it number 1.

Wonder 5 Family Crisis 1 Liberalism 4 Atomic War 2 Salvation 3 Civil Rights

4. Retention: retention is defined as the subject's ability to recall specific information in the speech as measured by a multiple-choice test. Thus, retention is determined by the correct selection of available answers to a given question. In other words, retention is used in the standard way "information testing" is employed. An item example is presented.

The most basic principles of Liberalism is

1. Truth
2. Co-operation
3. Pluralism
4. Love
5. Freedom

Other Terms Discussed:

1. Perception: a construct which contains, at least, four aspects which may be measured. Each individual is viewed as perceiving information in four different ways, although there is much inter-relatedness among these ways. A listener's perception may be measured in each of the four aspects. These aspects have been operationally defined in the preceding section. It should be noted that no attempt has been
made to include motivational factors within the measuring aspects of perception.

2. Communication: as this study is concerned with perception during the communication act, it is necessary to establish a general understanding of communication. Essentially communication occurs when information has been transmitted from a source to a receiver. Successful transmission is measurable by scales. In short, there is no peculiar meaning attributed to the way communication is used in this study.

Statement of Specific Hypotheses. Since the specific hypotheses for this study imply specific purposes, there exists no inclusion of a section headed "specific purposes." The hypotheses are stated in null form. They will be analyzed by appropriate statistical tests. The .05 level of significance will be used. No direction has been predicted where treatments with the subjects vary; thus, two-tail analysis will be used in the statistical results.

1. There is no relationship between scores on the Recognition Scale and scores on the Retention Scale.

2. There is no relationship between scores on the Recognition Scale and scores on the Relational Scale.

3. There is no relationship between scores on the Recognition Scale and the number of changed responses evidenced on the Cognition Scale.

4. There is no difference between students in treatment I and students in treatment II in their abilities to score on the four separate instruments
involved in this study.

5. There is no difference between scores with the experimental groups and scores in the control group.

Experimental Procedures. Prior to a description of the experimental procedures per se, a statement of the treatments is necessary, since such a discussion is not included within the procedures. The two treatments varied in the instructions to the subjects preceding the speech presentation. Treatment I subjects were advised to pay particular attention to the words of the speech. Treatment II subjects were merely asked to pay attention to the speech. Exact instructions and their wording are presented as part of the Appendix.

The experimental procedures were to be conducted with approximately 180 students from basic speech courses at the Ohio State University. Fourteen students were omitted in lieu of their absences during one of any of the stages of the experiment. The 166 subjects were divided into five groups: two groups for immediate recall testing, two groups for delayed recall testing, and one control group. The delayed-group of subjects differed from others in their testing conditions in that they were not tested for immediate recall.

All groups were administered the Cognition and Relational
Scales two prior to the speech presentation. The administration and completion of these tests lasted 15 minutes, although no time-limit was imposed. Two weeks later all but the control group were presented an eight minute speech dealing with the meaning of "Liberalism." Immediately following the speech both treatment groups were given four tests in two separate class hours. This was done to avoid fatigue. In all the average time of testing for the immediate recall condition was 45 minutes.

A more detailed discussion of the experimental procedures is delineated in Chapter III, where, also, are presented the experimental stimuli, the measuring instruments, and a description of the subjects. Chapter I has presented the General Purposes of the study, the Specific Hypotheses, Definition of Terms, General Plan, and Experimental Procedures. In the next chapter a review of the experimental and theoretic issues of the literature will be discussed.
CHAPTER II

REVIEW OF LITERATURE

Review of Definitions of Perception. The definition of perception has changed considerably in recent years. Warren states that perception is "the awareness of external (or internal) objects, qualities which ensues directly upon sensory processes." ² In this definition emphasis is placed neither upon the affective or cognitive factors. The "awareness" of stimuli, moreover, is ignored, unless its meaning is to be equated with the "sensory processes," or at least its effect. The inadequacy of Warren's definition is inferred by observing a more inclusive and seemingly exacting description of the factors involved: "an event in the person or organism, primarily controlled by the excitation of sensory receptors, yet also influenced by other factors of a kind that can be shown to have originated

in the life history of the organism. The event is primarily cognitive rather than affective or conative, though it usually (or always) manifests all three aspects. The notion of the "cognitive" factor clarifies two important questions which were unresolved in Warren's statement. First, that the awareness of stimuli is at least partly, if not strongly, directed by learned responses of the past. Second, that by knowing what relevant events have occurred in the perceiver's development, some prediction may be made about his perceiving behavior. The logical corollary to this second notion, and linked with the first, is that perceptions are modifiable. (What this might mean in lieu of the present study and training in speech in general will be described at the end of this chapter.)

In the preface to his book on perception, Tagiuri established the psychological influence upon perception: "Perception depends on the activation of psychological structures by patterns of stimuli which initiate events

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leading to the identification and classification of stimuli."\(^4\)


Re-stating, in different words, the psychological factor involved in perception, Ittelson and Cantril have explained that "when we perceive, we externalize certain aspects of our experience and thereby create for ourselves our own world of things and people....The world as we experience it is the product of our perception, not the cause of it."\(^5\) While these authors have re-opened the philosophical enigma of mind independent or dependent upon stimuli, they have retained the significance of experience of the individual in ordering and codifying his subsequent perceptions.

Among the authors who has enriched both methodological aspects and theoretic models for perceptual research is Jerome Bruner. Essentially, Bruner says that each individual is a category-creature, and that what the individual
perceives in his life is largely a by-product of his constellation of categories. "We are always to some extent prepared for seeing, hearing, smelling, tasting some particular thing or class of things....we receive information mediated from the external object" and "an event of verification follows." Bartlett's experimental investigations and speculative remarks about the variety of thinking processes have let some of his discussions into the realm of defining perception. In his studies of "closed," "open," and "adventurous" thinking, Bartlett found that the subject's task was strongly determined by the subject's perception of the task. "The direction," Bartlett writes, which a subject adopts "when he is confronted with a problem serves to specify for himself the nature of the task."  

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In another text by Bartlett, "direction" is defined as
The "properties of relevancies" as the perceiver notices or creates them. Related to Bartlett's description of


the direction adopted by the subject in confronting a problem is Bruner's phrase "selective registration." 9


The directional and selective character of perception support the cognitive-orientation of both Warren and Ittelson's position. In fact, there appears to be little disagreement among the authors cited in regard to factors which impinge upon the individual as he perceives. The inclusiveness of the proffered definitions, however, make difficult semantic and behavioral distinctions. Any one of the current interests of psychology, such as "thinking," "learning," "personality-development," and "habit-formation," may be substituted for the word perception in many definitional instances. Hence, Bartlett wrote of perception: "it is one of the fundamental of all human cognitive
reactions, yet it is exceedingly complex. Inextricably mingled with it are imagining, valuing, and the beginnings of judgment."\(^{10}\)

\(^{10}\)Bartlett, op. cit., p. 32.

The definitions which have been presented in this chapter were largely the outgrowth of empirical research. It appears useful, therefore, to turn directly to the methodologies and results of some of the experiments used in perceptual research. To do this, the experimental review has been divided into three sections: food imagery, abstract imagery, and social-relations imagery. The divisions are quite arbitrary, but they do afford an idea of the levels of complexity characteristic to the quality of each methodology in question.

Experimental Review

A. Food Imagery -- Lazarus, Yousem and Arenberg conducted a representative experiment of the studies dealing with recognition thresholds. They presented slides of food and non-food images to a group of children who had gone without food for varying numbers of hours. The number of hours of food-deprivation was obtained from the subjects
after the experiment was finished. When thresholds were plotted against the hours of deprivation, "thresholds for food objects decreased for two and four hours of deprivation, but then rose sharply at six."\textsuperscript{11} Simply, the


The crux of their method lay in classifying subject responses as being food or non-food. It should also be noted that the above mentioned study resembles many of the motivation experiments reported in Hall's recent purview.\textsuperscript{12}


Sanford gave a form of the Thematic Apperception Test to children either (1) after breakfast, or (2) before lunch, or (3) after lunch. Tests were then administered under all three conditions, revealing that "all subjects examined immediately prior to the meal gave significantly more food responses than when presented with similar material after
the meal." Again, the variable, food-deprivation was observed to be an influential antecedent to subject perception. Use of the Thematic Apperception Test resembles the Lazarus slide-picture method.

Departing slightly from either of the two-mentioned experiments, Wispe and Drambarean used words, rather than pictures, to evoke perceptual responses. Manipulating food and water deprivation for their subjects, these researchers, too, observed "lower recognition thresholds to be associated with increased hours of deprivation."

Levine, Chein, and Murphy used a "ground glass screen to provide ambiguity to a number of chromatic and achromatic drawings." Then subjects were asked to verbalize their impressions of the objects. Similar in methodology, this tended to elicit responses similar to the foregoing
experiments. In other words, the number of food responses to achromatic cards increased at three and six hours of deprivation, but decreased at nine hours to a point slightly below the three hour period.\textsuperscript{15}


In each of the foregoing investigations there seems to be support of the obvious: motivational antecedents, in these cases deprivation of food or water, carry a heavy weight in the overall load of perceptual determinants. The methodologies might be singled into one heading as classifying perceptual responses, for in each instance, the experiment's task was determining whether or not the subject had "seen" a food object. The importance of the physiological state of the individual has been alluded to in the first chapter. These studies related the relevancy of physiological state and "set" or perception. In the studies headed "abstract imagery," non-physiological components are noted as determinants or antecedents to the subject's perception.

B. Abstract Imagery -- Bruner and Goodman examined
how children whose economic background varied would perceive the size of coins. They found that poor children overestimated the size of coins more than did rich children.  


A year later Bruner worked with Postman. They learned that in the estimation of discs (one set bearing the Nazi swastika and the other set bearing the dollar sign) the dollar sign was judged larger.  


having explored an abstract symbolic value, size. Sounding much like William James, Bruner echoed that author's sentiments: "What one sees, what one observes, is inevitably what one selects from near infinitude of potential percepts. Perceptual selections depends not only upon the primary determinants of attention but is also a servant of one's
needs, interests, and values. Thus, economic and psychological contingencies are tacitly considered as determinants of perception.

Another abstract imagery experiment was conducted by Asch. He presented to his subjects the apparently easy task of determining from three lines the one which was equal in length to a fourth, standard line. Subjects were clearly made aware of how the other members of the group perceived the lines. Nine persons were brought into a room and shown the lines; however, all but one member co-operated with the experimenter by giving unanimously wrong answers. Several groups were handled and in each circumstances, one subject was ignorant of the pre-determined deception created by the experimenter and his eight cohorts. Some of the subjects remained entirely independent of the group in selecting the correct line. At the other extreme, however, were those who "yielded to the majority of the group's

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18 Bruner, op. cit., p. 43.
decision."\textsuperscript{19}


Elsewhere Asch has referred to his findings as an indication of "perceptual restructuring."\textsuperscript{20} The question which arises is "Does perceptual restructuring explain the dependent variable?, or does social conformity explain the subject's reaction?" If one is interested only in the \textit{apparent} belief, perception, or what-ever of a subject then no difficulty exists. Goffman has treated this problem by avoiding any distinction between covert and overt responses of the individual.\textsuperscript{21} His point, though well taken, is nevertheless unsatisfactory to students whose major interest


is the understanding of the true, or at least, covert, events of an individual.

In brief sum of the abstract imagery section, the following generalization may be formulated. Stimuli do not impinge upon an inactive receiver; rather, they are encountered and translated by an equipped perceiver. The equipment, be it economic or social or psychological in composition, prepares and readies the individual for his confrontation with the world of reality. The next section approaches the problem of persons perceiving social situations.

C. Social-Relations Imagery -- In this section, studies which dealt with person-perception will be reviewed. A number of such studies explored variables which speech teachers and experimenters have long understood. For example, Fiedler, Warrington and Blaisdell studied "traits" among college fraternity men. Fraternity men were asked to (a) name the men in their group whom they liked best and liked least, (b) rate themselves on a series of traits, and (c) rate the other men on the same traits. The results showed that these men "assumed greater similarity in personality traits between people they liked and themselves
than actually existed."


Speech training includes the promotion of listener-identification. Essentially the meaning here lies in the principle of empathy, which encourages the speech student to project himself into the role or roles of his audience. Reasons for this are obvious, but in line with the above mentioned study, speech teachers recognize that audience members are more likely to respond favorably to speakers who acknowledge their interests and peculiarities than to speakers who either consciously or otherwise avoid establishing a common ground with their listeners.

Zillig worked with this variable of likeability, too. She had several popular and several unpopular students perform calisthenics before a class. The "liked" pupils were instructed to commit errors; and the "disliked" pupils were instructed exactly so as to permit perfect execution of the tasks. At the end of the session, "the class rated the performers on the basis of correctness in the exercises."
The vote was in favor of the popular or liked students. Zillig talked with each pupil separately and concluded that the "voting reflected differences that were actually seen."23


Perceptual distortion has been the subject of part of a book written by Pudovkin. A simple, passive close-up of a well known and "much-liked" Russian actor, Mosjukhin, was joined to three different strips of film. Pudovkin describes the effects upon the viewing audience:

In one this close up was followed by photographs showing a dead woman in a coffin; in another it was followed by a photograph of a bowl of soup on the table; in the third it was followed by photographs of a little girl playing with a funny toy bear. The effects on an unsuspecting audience were terrific. The reactions were, in fact, raves about the acting artist. They pointed out the heavy pensiveness of his mood over the forgotten soup, were touched and moved by the deep sorrow with which he looked at the dead woman, and admired the light happy smile with which he surveyed the girl at play. But we knew that in all three cases the face was exactly the same.24

Dusenbury and Knower studied the reactions of subjects who were experimentally exposed to certain "symbolic codes of action and voice." Whereas Pudovkin worked with mobile visual material, these investigators used moving and still photos. A series of emotions and attitudes were facially produced by two speech teachers. Subjects were asked to judge among the available descriptions which ones most closely identified with the performer's intended emotional expression. Accuracy of subject response was generally high, indicating that audiences can interpret symbolic behavior when such behavior is void of verbal cues.25


An ingenius technique for studying person perception, and in this social-relations imagery section, was devised by Sherif. In a sense, this study by Sherif resembled part of the Pudovkin and Knower studies. All three researchers were interested in detecting how the subjects' responded to the value of the experimental stimuli: Pudovkin's and Knower's subjects interpreted visual symbolic values, and
Sherif's subjects interpreted the meaning of verbal material in lieu of its association to 16 authors. Groups of college students read a set of 16 brief prose passages, each consisting of two or three sentences. Each passage was accompanied by the name of a well known author. The task was to rank the passages in "an order of merit." On a previous occasion the same group had ranked the 16 authors for their merit. Unwittingly to the subjects, Sherif had extracted the passages from the writings of one author, Robert Louis Stevenson. The "passages were selected so as not to differ in quality." Hence, "There was no relation between the passages and their presumed authors." The question which Sherif posed for the experiment was "Would the evaluations of the passages be equally independent of the authorship imputed to them?" They were not. "Although there was no intrinsic relation between the passages and the authors attached to them, the subjects showed a tendency to rank the passages in the same directions as the arbitrarily coupled authors."\(^{26}\) In line with Zillig,

Pudovkin and others the "prestige of the author automatically transferred to the passage."\textsuperscript{27} Lippman has written that "stereotypes" persist "because they often provide us with a consistent picture of the world in which we come to feel at home."\textsuperscript{28}

\textsuperscript{27}Ibid., p. 122.


This concept of consistency has been amplified in theoretic models and experimental findings by a variety of writers. Some are included in this section because their work has centered around human behavior in social relations. Others are elaborately reported on in different texts, such as by Festinger, Osgood, Lindesmith and Strauss, and others.\textsuperscript{29}

Heider formulated a theory of consistency which was then put to experimental testing by another researcher. Heider was concerned with the way "relations among persons involving some impersonal entity are cognitively experienced by an individual." As an example, the following is a paraphrase of Heider's model. P represents a person who is the focus of analysis. O represents some other person, and X symbolizes "an impersonal entity." O might be a physical object, an event, an idea, or the like; the object of inquiry is to determine how relations among P, O and X are organized in P's "cognitive structure." Further, the analysis seeks to discover "whether there exist recurrent and systematic tendencies in the way these relations are expressed." In brief, a subject is measured in terms of "liking" or "disliking" a given entity.

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31 Ibid., p. 201.

32 Ibid., p. 201.
Newcomb applied the basic model which has just been cited to empirical testing. He administered a questionnaire to college students in 1951, the time of General MacArthur's dismissal by President Truman. (Newcomb's findings reflect those which have been cited earlier in this chapter).

Newcomb obtained data on his subjects' attitudes toward Truman's decision and their perceptions of the attitudes of their closest friends. "Of the pro-Truman subjects 48 wrote that their closest friends favored Truman's decision, and none that their closest friends were opposed to his decision." Of the "anti-Truman subjects, only two


indicated that their friends were generally pro-Truman and 34 that they were anti-Truman."\[34\]

\[34\] Ibid., p. 403.

Newcomb's methodology somewhat mirrors Sherif's approach, and certainly substantiates those finding of studies which support symmetry or balance or cognitive consistency
hypotheses. In brief sum, it may be stated that perceptions are inclined to parallel anticipated realities of the perceiver.

A theoretic explanation of this consistency is present in part of the Gestalt framework. It will be discussed in the section which immediately follows, and other Gestalt principles will be reviewed.

**Theoretic Review**

A. Gestalt Thought — In presenting a summary statement of the gestalt outlook, Ellis wrote: "When we are presented with a number of stimuli we do not as a rule experience a number of individual things, this one and that and that. Instead larger wholes separated from and related to one another are given in experience." 35 Thus, when a gestaltist views a picture, say with "two faces cheek to cheek," Ellis supplies the logical description as follows: "I see one face with its, if you will, 57 brightnesses, and the other 49 brightnesses. I do not see an arrangement

of 66 plus 40 nor of 6 plus 100. There have been non-gestalt theories which would require that I see 106. In reality, I see two faces!"\(^{36}\)

\(^{36}\) Ibid., p. 73.

This is a way of saying that phenomena are determined by their intrinsic nature as a whole. And as a summary statement, albeit brief as it is, Ellis's explanation is representative of the basic tenets of gestalt thought.

To illustrate this thought more specifically, a discussion of four significant premises or hypotheses of its foundation will now be presented. It will become evident that there exists a high interrelatedness among these tenets.

1. The Law of Pragnanz. Hilgard says that the German word for "pragnanz" is difficult to translate, however, "pregnancy" is offered as an admittedly weak substitute.\(^{37}\) Allport explains it as the "tendency

toward good form." but nowhere in his discussion is "good" unambiguously defined. "The law of equilibrium" is invoked by Hilgard to draw some meaningful comparison.

It is in this respect that hypotheses of "consistency" of "strain toward symmetry" are parallel by gestalt thought. The individual sees that reality with which he has accustomed himself to in the past. Sherif's subjects anticipated the authors of certain verbal material, because they found it was easier to retain consistent relationships of material and author than it was to do otherwise.

2. Form-Concept. "Form is a fundamental law." 

The individual who perceives an object, psychologically, takes in the form of that object not unlike the way a person remembers the form of an object once he closes his eyes immediately after he has looked upon it. How the object
takes on form is explained by several psychological mechanisms, among which are "memory" or "insight" as examples. These forms occur within "the nervous system or brain in the same configuration as they did when they arose as a consequence of the individual's percepts."\(^{40}\)

\(^{40}\) \textit{Ibid.}, p. 114-115.

"The law of similarity" is Hilgard's way of describing the form-concept. He writes, "similar items (e.g., alike in form or color) or similar transitions (e.g., alike in the steps separating them) tend to form groups in perception."\(^{41}\) To illustrate this principle, Hilgard explains it by the process of recognition.. An individual meets another person and pays particular attention to his face. According to the form-concept or law of similarity, the face "establishes" a form of itself, becoming, so to speak, a "property" of the perceiver. Later, when the perceiver encounters another face which recalls the one
seen earlier, the perceiver senses a "feeling of familiarity." The second exposure described by Koffka, and reported by Hilgard, is called a "memory trace," and is not altogether identical in perceptual process to the first experience. This is due, in part, to the fact that the "stimuli have been reacted to before."

3. The Law of Proximity. This law states that "perceptual groups are favored according to the nearness of their parts." Hence, if several parallel lines are spaced unevenly on a page, those closer together will tend to form groups against a background of empty space. The relatedness of this law to the preceding one is apparent,
and both are similar in principle to the fourth tenet.

4. The Law of Good Continuation. This law, paraphrased by Hilgard as Wertheimer’s laws of organization, does not seem dissimilar in meaning to any of the three aforementioned laws. Hilgard explains that "organization in perception tends to occur in such a manner as to create articulateness."\(^45\) Essentially this means that a straight line will continue as a straight line, an almost-complete circle will appear as a complete circle and so on. "Closure and continuation are aspects of articulate organization."\(^46\)

\(^45\)Hilgard, op. cit., p. 184.

\(^46\)Hilgard, op. cit., p. 183.

Recalling part of Ellis’s summary statement of the gestalt outlook, it is hoped that its meaning is now more intelligible and logically coherent within the gestalt framework: "larger wholes separated from and related to one another are given in experience."\(^47\) What the gestalt

\(^47\)Allport, op. cit., p. 72.
outlook means, then particularly for researchers in perceptual studies may be explained in the word caution. A configuration of events occur within an event, and the failure to appreciate this factor may very well lead to a superficial analysis of some part or parts within the configural whole.

That certain elements or parts within a larger complex are more important than others is undeniable. And one gestalt-oriented theorist and experimentalist, to be sure, is an example that certain parts do stand out and can be studied among the whole's other parts. For this reason alone, it should be useful to review some of the more basic concepts of Kurt Lewin's Vector Psychology.

Lewin's Basic Concepts

Lewin, like other Gestalt Psychologists, is convinced that psychology should spend considerable time figuring out what the determinants of behavior may be. His vector or topological approach, as it has been called, is based upon both armchair and laboratory work. He has maintained that vector psychology is more an approach or "method".48

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than it is a systematized theory in the typical sense. Yet the innumerable concepts which Lewin has borrowed from other disciplines, such as mathematics and physics, make his works appear as theoretic discussions more than anything else. In a "critique" of Lewin by Leeper over 90 concepts are defined and reviewed. This section of 


this chapter will discuss four basic concepts, those to which Leeper pays particular attention.

A. Life Space.-- This refers to "the totality of psychobiological factors which produce effects in a person's life at any given moment." The term has also been used by Lewin to mean the psychological, rather than psychobiological factors. In this way, more emphasis is placed

50 Leeper, op. cit., p. 12.

upon the immediately, observable happenings. Events which are not related to the observable factor under study are outside of the life space. When such events or stimuli do take on added significance they pass through a barrier known as the foreign hull and become part of the life space. There is much movement or locomotion within the life space, and the movement may be physical or psychological.

B. Tension.-- This term may be applied to the individual or to the situation in which he is moving. Tension is the basis for change, or, at least, one of change's antecedents. When two events or two stimuli are competing, there is said to arise tension. Within the life space of the individual, then, tensions are ever present in varying amounts. Tensions which are accumulated during conflict situations are attributed to the fact that "opposed forces in a situation of stable equilibrium prevent behavior of the sort that would discharge a tension, or at least prevent its mounting higher and higher." 52

52 Leeper, op. cit., p. 216.

Differences of tension are differences of the strength of
motives; thus, events within a situation may be considered hierarchical in significance.

C. Valence. -- This term is very much related to Tension. Valence is "the attractive or repulsive character of a region" within the life space or situational context of the individual. In a figurative sense, the valency of an object is said to exert force upon the individual -- he is either attracted toward it or repelled away from it. "Valence is not necessarily synonymous with pleasantness and unpleasantness, but may characterize an unconscious region, and even with regard to conscious activities it is to be determined on a basis of tests of behavior rather than on an introspective basis."\(^{53}\)

\(^{53}\)Leeper, op. cit., p. 217.

D. Vector Psychology. -- Since there no doubt exists a great detailed dynamics involved in the perceptual process, Lewin maintains that "vector psychology may be used as a study of the dynamics of at least the grosser aspects of perceptual activity."\(^{54}\) Vector refers to the "psychological

\(^{54}\)Lewin, op. cit., p. 32.
force" of a given event or stimulus. Its force is inseparable to its valency.

In brief sum, it may be stated that four basic concepts of Lewin's approach to the study of human behavior point up the significance of observing certain factors or variables within a situation to determine their peculiar impact upon behavior.

**Tolman's Viewpoint**

Tolman's contribution to this particular research will be discussed at length in the succeeding chapter. There, his explanation of the "requisites" for a "sign-gestalt-expectation" will be discussed and applied to a discussion of the construction of the Relational Scale. It will be sufficient in this brief section to present his viewpoint of how men (and rats, if you will) go about perceiving.

Tolman speaks of the "causal texture of the environment" to refer to the probability with which cues or signals point to their "referents."

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a discrimination apparatus leads to food with a probability of 1.0, to take an example." 56 How the rat

56Ibid., p. 87.

or human learns is explained in the next chapter. But the learned behavior which is acquired is very much the result of the "cognitive map" which the organism acquaints himself with. This map provides him with the necessary cues or attributes in his confrontation with the environment about him. The "causal texture" is in fact the cognitive map which must be learned and dealt with when a rat or person masters a task. It can be inferred from Lewin's and Tolman's statements that cues and signals will be influenced by their valencies.

There have been two general areas of the literature which were reviewed: included were experimental studies and theoretic concepts. A review of some of the meanings or definitions of perception was also presented here.

As a summary statement of the chapter, a few of the more basic notions may be enumerated:

1. Persons tend to retain perceptual balance or consistency.
2. When inconsistencies arise, tensions occur.

3. Certain elements within a complex are more salient to the individual than are others, and, therefore, are said to have greater valency or exert a stronger vector upon him.

4. Persons tend to experience and perceive configural wholes, rather than bits of the wholes.

5. Cognitive maps are used by persons as they confront reality.

In the following chapter, the measuring instruments will reflect some of the foregoing notions. In cases where the review of literature were incomplete, as in Tolman's instance, the succeeding chapter will supplement this chapter's inadequacy. This was done so as to illustrate the relatedness of Tolman's notions to the construction of a measuring instrument, to take an example.
CHAPTER III

THE MEASURING INSTRUMENTS

This writer has used the term perception to mean a mediation process which contains a set of interacting components. These components have been stated in the first chapter as the Cognition, Recognition, Relational, and Retention aspects of perception. In this chapter they will be discussed in light of the four measuring instruments which were designed to assess these four variables.

Since this study is centered around the perception of verbal material within the communication act, the basic source of stimuli will be words. The words to be studied were elicited from a speech prepared by the experimenter and judged by a manuscript reading group. In the development of certain scales, particularly the cognition instrument, a discussion of the speech construction
and evaluation appeared necessary as an integral part of the entire procedure. Hence, the stimulus or speech development was included in the section which covered the cognition scale.

The purpose for this chapter, therefore, is to present a discussion of the four scales which were designed to measure four corresponding behaviors of perception. The research appears to be an exploratory attempt in so far as the scales were relatively novel, albeit their roots are associated to common thought.

I. Cognition Scale

The cognition of a word will be defined as the subject's response in the selection of a synonymn for that given word. Such responses will be observable on a forced-choice scale. Thus if a subject selects the synonymn "independence" among a set of alternatives for the word "freedom", it will be said that his cognition of "freedom" is "independence."

Cognition defined: a subject's choice of synonymn for a given word, selected from five alternatives presented to him in the form of a forced-choice scale.

To acquire subject responses or cognitions to given words, it was necessary to determine such given words and
to procure a set of corresponding synonymns. Since the experimental study was concerned with perception during the communication process, it was further decided that the source from which words might be abstracted should be a speech-manuscript. In developing the Cognition Scale, therefore, an integral part of its construction depended upon the creation of a speech and the selection of certain words from that speech. The method for building the cognition instrument, therefore, included three steps: construction and evaluation of a speech-manuscript, selection-process of certain words from the speech, and the acquisition of synonymns for those given words.

**Speech Construction**

"The Meaning of Liberalism" was selected by the experimenter as an appropriate theme for a speech designed for freshmen and sophomore college students. "Liberalism," like other concepts, is a somewhat inexact term. The speech was written around the central concept, liberalism, and had as its specific purpose the transmission of certain details which could be tested on a comprehension test. Certain words were kept in mind during the writing of the speech. These words, or any others in the speech, were
to be examined for their relevancy to the pervasive intent in the speech. The point of the speech was to present the meaning of liberalism as a "state of mind...an attitude" which embodied certain attributes or characteristics. Each of these attributes or characteristics of liberalism was represented in each instance by a single word. In the writing of the speech, the experimenter was inclined to employ familiar words which would serve as "attributes" of liberalism. Hopefully this precaution minimized the conspicuousness of a word.

**Speech Evaluation**

The speech was evaluated in two respects. First it was tested for its "fairness" as an expression of the meaning of liberalism. Three judges were used, each a teacher and graduate student; their fields included political science, English, and speech. They were given the manuscript and asked to rate it on a scale from 1 to 5, using 1 to mean "very unfair" and 5 to mean "very fair," Ratings of 5 were unanimously obtained. The purpose of this rating was useful only insofar as it assured the experimenter that what was written had some approval on the grounds of its perspective.

The second test of the speech was the administration
of Flesch's readability formula. Flesch maintains that his test applies to speaking as well as to writing materials. In fact, he asserts that "in a sense the test works even better for speaking than for writing." The Chall-Dial and White studies on listening are cited to support his claim.

Four samples of the speech manuscripts were randomly chosen to be submitted to the Flesch formula. Each sample contained the required 100 words, the total word-count of the manuscript being 1275. Each sample achieved a "reading ease score" which was interpreted by the Flesch Chart. The four samples received the following scores; 31, 57, 59, and 32. Their mean score was 44.8. When applied to the chart, a score ranging from 40 to 55 was considered "fairly difficult" material. Flesch's Chart indexes "very difficult" (0-15), "difficult" (16-39),


58 Ibid., p. 43.
"fairly difficult" (40-55), "standard" (56-65), on up to "very easy" (95-100).

Flesch also translates scores into magazines which would represent given reading levels and into "grade levels" which correspond either to the magazines or to the "reading ease score". "Fairly difficult" represents a description of style which is exampled by Harper's Atlantic, and corresponds to the grade levels between "13th to 16th" (pp. 5, 6, 43).

Hence, the two evaluative steps rendered the speech fair as an expression of "liberalism," and as "fairly difficult" in style. This level of difficulty appeared satisfactory, as the speech was aimed primarily for freshmen and sophomore college students.

Selection-process of certain words in the speech.

The words which were selected from the speech to be used in the experimental study shall hereafter be called "critical words," the abbreviated form CW. A word was found to be critical if it had been selected by a reading group as being relevant to the meaning of liberalism as it was conveyed in the manuscript. If a reader decided that a given word was relevant to liberalism he underlined that word; thus the number of times a word was underlined constituted its score.
Critical word score defined: the frequency selection of a word as it was underlined by a group of manuscript readers. Critical was defined as a score of 9.

Twelve persons composed the reading group: three graduates in political science, two graduates in English, five graduates in speech, and two senior undergraduates in economics. Each person was instructed to read the manuscript, then to underline those words which seemed to be most relevantly related to the meaning of liberalism as it was conveyed in the speech. These data were analyzed for frequency of occurrence. An analysis of the data revealed a high level of agreement as to which words should be considered critical. The selection of the critical words and their respective scores are tabulated below:

<table>
<thead>
<tr>
<th>Critical Words</th>
<th>Score-Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freedom</td>
<td>12</td>
</tr>
<tr>
<td>Cooperation</td>
<td>12</td>
</tr>
<tr>
<td>Discipline</td>
<td>12</td>
</tr>
<tr>
<td>Objectivity</td>
<td>11</td>
</tr>
<tr>
<td>Wonder</td>
<td>11</td>
</tr>
<tr>
<td>I don't know</td>
<td>11</td>
</tr>
<tr>
<td>Love</td>
<td>10</td>
</tr>
<tr>
<td>Pluralism</td>
<td>10</td>
</tr>
<tr>
<td>Tolerance</td>
<td>10</td>
</tr>
<tr>
<td>Curiosity</td>
<td>10</td>
</tr>
<tr>
<td>Responsibility</td>
<td>10</td>
</tr>
</tbody>
</table>
Three words received score 12, three received score 11, five received score 10, and one received score 9. The list of critical words numbered twelve, and included one phrase, "I don't know." The word "liberalism" was ultimately rejected from the critical word list, since its appearance in the speech was highly frequent. In the revised speech draft, the number of words in the CW list was held constant.

Thus a critical word was defined by its frequency selection as determined by a reading group. Eleven words which had received at least a score of 10 out of a maximum of 12 were designated as critical.

Acquisition of CW synonyms

Once the list of critical words had been devised it was necessary to establish a set of synonyms for each word. The standard sources were either a dictionary or a thesaurus. "What were the probable meanings of these words as perceived by college students?", not "What are the available standard or official meanings of the critical words?" was the question which directed this aspect of the construction.

The experimental study was to be conducted with students enrolled in basic speech courses at The Ohio State
University. It was important to the study that such students receive no undue association with the critical words prior to the experimental conditions. For this reason, a group of students at Capital University, enrolled in essentially the same basic speech courses, were selected as the source for acquiring sample synonyms.

Ideally the group which selected the synonyms should have closely resembled the experimental and control groups. Descriptive data, however, implied more inconvenience for the instructors of the Capital University group than it seemed proper. Hopefully this inadequacy did not significantly affect the content of synonyms.

The nature and number of the content of the synonyms obtainable were influenced by at least two factors: (1) the critical word list, and (2) the variability of responses made by the students. A group of 100 students were presented the 11 critical words. As far as the students were concerned, these were ordinary words, the word "critical" was not suggested anywhere on the sheet they were handed. They were presented a sheet with eleven words which had ample space where a synonym for each word could be written.

The students were instructed to write down beside each word (or phrase, as the case was) a synonym which
represented their "best thinking." They were told that they should strive to select words which they felt their classmates would likely understand. No time limit was imposed. Instructors reported the average time as fifteen minutes for the entire list. In a sense this was a restricted word-association test, inasmuch as the synonyms were purportedly restricted to the probable familiarity of similar classmates.

The process for determining synonyms which were written most frequently constituted a sample of synonyms for that given critical word. Hence, there were 11 sets of 5 synonyms. To complete the construction of the scale and to ensure against contamination factors during the experimental procedure, it was necessary to "mask" the 11 critical words and their synonyms by scattering them among other words and their corresponding synonyms. Thirteen additional words and their accompanying synonyms were chosen by the experimenter. His sources were the "Ohio State University Psychological Test," form 19, issued October, 1935, and Webster's New World Dictionary.

The cognition scale was composed of the 11 critical words, 13 noise or mask-words, and the accompanying synonyms for all 24 words. An item on the scale was made up of one
test word and its five synonyms. The scale is designed to assess one variable: the number of changes in cognitions made by a subject, comparing his pre and post stimulus responses.

The multiple choice format was used. An item of the Cognition Scale is presented below; the underlined word is the critical word:

**Objectivity** most nearly means

1. Goals  
2. Purpose  
3. Open-mindedness  
4. Preciseness  
5. Analyze

II. **Recognition Scale**

The rationale of the Recognition Scale is inextricably bound to some of the theoretical considerations stated previously. From the Gestalt, Lewin, and Tolman reviews a major theme recurred: a wealth of accumulated facts about the total situation in which an individual acts is essential to a clear and thorough understanding of "personality development, social relations, cognition, and motivation."\(^{59}\)

\(^{59}\) Lewin, *op. cit.*, p. 238.
Animals and humans select what stimuli they perceive and respond accordingly. This notion is amply supported by theoreticians such as William James, Gordon Allport, Floyd Allport, Wolfgang Kohler; and it is equally substantiated by experimentalists such as Fredrick Bartlett, Jerome Bruner, Leo Postman, Solomon Asch, and others. The idea has been expressed by Bruner's phrase, "selectivity process" and by James' phrase "attending to." The referents for either phrase is constant, that is, James and Bruner refer to stimuli which the individual pay greater attention than do they to other stimuli within a situation. Now, it is not the interest of this research to investigate the causes of stimuli prominence. A probing of that nature would require an altogether different formulation of questions to be answered, and an altogether different methodology of studying the problem. It is believed that certain stimuli provoke greater attention from a subject than do other stimuli. The Recognition Scale proposes to investigate what appears to be a likely inference extrapolated from the tenet; namely, that does the acquisition of certain stimuli within a given condition suggest the attention of a subject to additional, yet relevant, stimuli within the greater complex? Thus it was the purpose of
the Recognition Scale to act as a predictive measure for additional stimuli within the greater communication experience.

The additional stimuli within the greater communication experience included comprehension details of the speech on liberalism, changes of CW cognitions, and changes of CW's in relation to their propensity as attributes of the concept liberalism. Knowing the Recognition Score of a subject was purportedly to act as an index to a subject's performance on the three other scales. What was needed for the construction of the Recognition Scale had been previously established. A stimulus in the form of a speech was discussed in an earlier section of this chapter. Furthermore, certain stimuli, in the form of critical words, had also been established. These words comprised a meagre quantity in the face of their larger complex: the number of critical words was 11, while the number of items on a comprehension test for the speech was 33. The major variable of the scale was therefore conveniently prepared, the recognition of the 11 critical words.

It was the purpose of the Recognition Scale to assess the degree of critical word recognition on the part of audience members who acted as subjects for this
experimental study.

Recognition score defined: the sum of correct responses made by a subject in selecting the appropriate choice among five alternatives; correct response was dependent upon the accuracy in the selection of a critical word.

An item on the Recognition Scale was composed of five words, one of which was one of the eleven CW's. The subject was presented the Recognition Scale after he had heard the presentation on liberalism. He was then asked to score on an IBM Answer Sheet the choice which would indicate that he recognized that given word in the speech. An example of an item from this scale would be:

1. coherent 2. responsibility 3. progressive 4. reactionary 5. obedient.

The four foils in each item were determined on the basis of their probable associative value to the term liberalism. In a preliminary investigation of this study, word-association tests had been administered to similar groups at The Ohio State University. Some of the responses which were elicited from such persons were chosen by the experimenter to act as foils in the Recognition Scale.

The "instructions" at the top of the Recognition
Scale page made apparent the subject's task: "...one of the five words appeared in the speech on "Liberalism". Choose the correct word by scoring it in the corresponding place on the IBM Answer Sheet." There were 11 items, each comprised of five possible choices.

In this discussion, the evaluation will be based on a pilot study which was composed of stimulus presentation and post-stimulus testings. Pre-testings were not conducted, preventing, therefore, an analysis of differences between the pre and post stages of the speech presentation. Twenty-six subjects were used. The speech was presented to them, then the Recognition Scale with written and oral directions were delivered. No time limit was imposed; however, everyone was completed five minutes after the test was administered. Again, no time limit was imposed. All were finished within fifteen minutes. The Retention Test was composed of 33 multiple choice items. The data for the two tests were compiled from a pilot study. They are plotted and presented on the following page:
Scores on the Recognition Scale range from 2 to 10, the mean being 6.4. Using the Pearson Coefficient, with a split-half method odd-even item for test reliability, an $r$ of .43 was achieved on the Recognition Scale. Corrected
for length, the r was .52. The meagre correlation may have been due to the small number of items on the scale. There is, of course, a third alternative for explaining the low correlation; namely, that the test’s reliability is weaker-than desired.

Since the Recognition Scale was intended to serve as a predictive measure for additional information within the greater complex of the communication situation, it was correlated with the Retention Test which was administered immediately following the former scale. Again, using the Pearson Product Moment formula a value for r of .71 was computed. The implication that the Recognition Scale may, in fact, represent an index of the amount of information acquired from the speech presentation appeared premature in lieu of the weaknesses of the pilot investigation. Tests of differences with the other two scales, and a larger body of subjects were apparent essentials to any serious speculation of the scale’s value.

In sum, the Recognition Scale was an outgrowth of the theoretic and experimental notions which emphasized the "selective" character of perception. The purpose of the scale was to determine whether this process occurs in the communication process to the extent that it is an
index to additional information within the over-all event. The scale was composed of 11 items, each item containing one of the eleven CW's and four foils. A subject's Recognition Score was determined by summing his correct choices on the scale. A split-half reliability test demonstrated an $r$ of .42; and a correlation coefficient of the Recognition Scale with the Retention Test measured .71.

III. **Relational Scale**

In this section the primary attention is directed toward the explanation of the Relational Scale. To do this, references will be made to Osgood's semantic space concept and Tolman's sign-expectancy concept. The two are related to the rationale which led to the development of the Relational Scale. The value of the scale rests principally upon the acceptability of construct validity, and will, therefore, receive particular consideration. Suffice to say, at this point, that the Relational Scale was intended to measure the probable association of a given word to a speech topic. For instance, "what", it may be asked, "is the likelihood of the word 'love' to appear as part of a speech on 'Liberalism'?"

Osgood *et al.* have discussed the "multi-dimensionality
of words or "signs." The principal dimensions which these authors labeled were the "evaluative," "potency," and "activity" variables. These dimensions function for an individual when he "mediates" with a given sign. The meaning of a word is said to be partly the result of several possible meanings or dimensions along the "semantic space." "Justice," as a word, may be judged for its "good-bad," "strong-weak," and "dull-active" qualities. Meanings are determined by "finding the successive allocations of a concept to a point in the multi-dimensional semantic space by selection from among a set of given scaled semantic alternatives." 60


The three dominant factors or dimensions which Osgood and others have categorized do not exhaust the semantic space. Osgood admits so, as do other writers.

Although Tolman has no where publicly written of multi-dimensionality, his basic doctrine seems to add to the three principal ones. According to Tolman, a "sign-gestalt" is said to be present when three conditions are
fulfilled: (1) there must be features of the behavior situation to which the animal responds (this is a way of saying there must be stimuli within a situational context to which the individual is attending); (2) there must be objects signified by these signs (which is to say that meanings are attached to signs); and (3) there must be signified the relation between the signs and their objects, that is "the manner in which, the previous occasions, the commerces with the signs led on to the commerce with the signicates." 61


It is clear from the above requisites, as well as from Tolman's frequent use of the phrase "sign-gestalt-expectation", that signs are to be interpreted as set-providers for the organism. In fact, elsewhere Tolman uses the term "readiness" to suggest the "expectant" character of signs. 62 The logic extended, if signs act

as expectancies for objects, they should also act as expectancies for other signs. At first blush, at least, the notion appears sound. The word "domestic" appears more related to "house" than does the word "avalanche" to "house." Similarly, one would more likely anticipate the word "radical" to appear in a speech dealing with "Liberalism" than in a talk on "Skin-diving." It is hypothesized, therefore, that words have a saliency value toward other words or toward speech topics.

To clarify this saliency or relational value of a word, a discussion of the construct, "relational value," is appropriate. The construct, and its measuring is admittedly in its infancy -- the remarks that follow will be more speculative, therefore, than what is quantitatively desirable.

Concepts or words are perceived by different persons with differing meanings or attributes. These differing meanings possess a differential relational-value, then, for different persons. To illustrate: using the word "cooperation" as an attribute of "Liberalism," it is conceivable, and quite probable, that two persons might disagree on its suitability. One might think of "cooperation" to be highly related with "Liberalism," while the other
sees it as only remotely connected, notwithstanding the attitude either may share toward "Liberalism" or "cooperation." To this extent, "cooperation" has a greater saliency or relational value toward "Liberalism" for the one individual than it does for the other. In a sense, this notion parallels the underlying idea of Lewin's "valency." Certain forces exert greater power than do others.

Another way of putting this matter is to discuss attributes or meanings in terms of hierarchies. A series of attributes may be hierarchically structured. The acme of the hierarchy is the point of greatest saliency or relational value. (Bruner et al. have alluded to something similar in the formulation of their paradigm. In discussing the "confirmation" and "infirming" processes of thinking, Bruner says a person tests hypotheses until they can be used as "criterial attributes" for later experiences.)

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To test the relational value of a word (i.e. the critical words) to "Liberalism," it was necessary to devise
a means by which a subject could compare a word to a number of speech topics, including "Liberalism." Since speech classes were to be used in this study, it seemed appropriate to ask this general question: "What are the chances of the word "cooperation" appearing in the five available speech topics presented to you?" The chances were determined by ascribing a score of 1 to the most likely topic and 5 to the least likely topic.

The scale was composed of 22 items. Eleven of these were the original critical words. The other eleven, randomly scattered throughout the test, acted as "noise" material. The five speech topics were "Family Crisis," "Atomic War," "Civil Rights," "Liberalism," and "Salvation." The four decoys were to act as a means for judging how subjects felt in terms of the relationship of the critical words and the term "Liberalism." The relational value of a word was determined by the score it received from the subjects. Its merits and weaknesses will be illustrated in the next chapter. There the scale is analyzed under the experimental conditions of this study. No data was obtained for the Relational Scale during the pilot attempt.

IV. Retention Test

Retention was defined as the number of items correctly
answered on a 33 item, multiple-choice test. Each item contained five choices; and in each instance, the correct answer had been abstracted from the speech content.

Using the split-half method for a reliability test, a corrected $r$ of .74 was calculated for the Retention Test.

Since the Recognition Scale was to be used as an index of additional information a subject would receive from the speech, the Retention Test was correlated with the former. This was done from the data yielded by the pilot study referred to in this chapter. Using the Pearson product-moment correlation coefficient formula, the relation between the two tests was found to be .76.

Hence, the two instruments which received reasonable examination were the Recognition and Retention Scales. In the statistical analyses of the experimental conditions, each of these tests will be re-examined in light of the new data.
Experimental Design Summarized

The stimulus was presented in the form of a speech on the meaning of "Liberalism", delivered in all instances by the experimenter who memorized the material and style of presentation. The speech stimulus was assumed, therefore, to be constant. Subjects ranged in age from 17 to 35, the mean-age for each group being 19.5, 20.5, 19.7, and 19.6. A control group of 34 subjects were used. They were administered pre-stimulus tests and post-stimulus tests only. Their mean age was 20.7.

There were four experimental groups. Two groups were used for immediate recall testing and two for delayed recalled testing. Groups were also divided on the basis of treatment variation. Treatment I consisted of directing the subjects to listen to the words of the speech.
Treatment II advised the subjects to pay attention to the speech. The specific instructions for the separate treatments were written out for each subject to read, although the experimenter did read such instructions aloud. Both instructions appear in the Appendix. The design is summarized in tabular form on the following page.

In re-examining the reliability of the Recognition and Retention scales, all four of the experimental groups were used. Pearson's correlation coefficient formula with the split-half method was calculated for each of the separate groups. Tables II and III show the reliability $r$'s for the Recognition and Retention scales, respectively. Four correlation coefficients were calculated for each test, whereupon $r$ transformations were used to obtain the mean value of these correlations. Hence, the mean $r$ for the four separate reliability tests of the Recognition Scale is .61. The mean $r$ for the four separate reliability tests of the Retention Scale is .67. These coefficients are slightly less than those which were reported on the basis of pilot data. The experimental figures are probably closer to their true value, since they are based upon a much larger sample of cases than were those of the pilot investigation.
**Table I**

**Experimental Design Summarized**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>Pre-Stimulus Testing</th>
<th>Post-Stimulus Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TREATMENT I, IMMEDIATE</strong></td>
<td></td>
<td>COGNITION &amp; RELATIONAL</td>
<td>RECOGNITION, RETENTION, COGNITION, &amp; RELATIONAL</td>
</tr>
<tr>
<td>RECALL</td>
<td>46</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TREATMENT II, IMMEDIATE</strong></td>
<td></td>
<td>COGNITION &amp; RELATIONAL</td>
<td>RECOGNITION, RETENTION, COGNITION, &amp; RELATIONAL</td>
</tr>
<tr>
<td>RECALL</td>
<td>46</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TREATMENT I, DELAYED</strong></td>
<td></td>
<td>COGNITION &amp; RELATIONAL</td>
<td>RECOGNITION, RETENTION, COGNITION, &amp; RELATIONAL</td>
</tr>
<tr>
<td>RECALL</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TREATMENT II, DELAYED</strong></td>
<td></td>
<td>COGNITION &amp; RELATIONAL</td>
<td>RECOGNITION, RETENTION, COGNITION, &amp; RELATIONAL</td>
</tr>
<tr>
<td>RECALL</td>
<td>19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Treatment I refers to the instructions which directed the subjects to listen to the words of the speech.

Treatment II refers to the instructions which directed the subjects to pay attention to the speech.
### TABLE II
RELIABILITY OF RECOGNITION TEST FOR FOUR SEPARATE EXPERIMENTAL GROUPS

<table>
<thead>
<tr>
<th>Treatment Type</th>
<th>N</th>
<th>$\Sigma_{hh}$</th>
<th>$\Sigma_{kk}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment I, Immediate Recall</td>
<td>46</td>
<td>.45</td>
<td>.62</td>
</tr>
<tr>
<td>Treatment II, Immediate Recall</td>
<td>46</td>
<td>.45</td>
<td>.62</td>
</tr>
<tr>
<td>Treatment I, Delayed Recall</td>
<td>21</td>
<td>.37</td>
<td>.54</td>
</tr>
<tr>
<td>Treatment II, Delayed Recall</td>
<td>19</td>
<td>.48</td>
<td>.64</td>
</tr>
</tbody>
</table>

Mean $r$ is .61

"$\Sigma_{hh}$" refers to reliability coefficient for a half test.
"$\Sigma_{kk}$" refers to reliability coefficient for a test lengthened $k$ times.
### TABLE III

**RELIABILITY OF RETENTION TEST FOR FOUR SEPARATE EXPERIMENTAL GROUPS**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Σhh</th>
<th>Σkk</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT I, IMMEDIATE RECALL</td>
<td>46</td>
<td>.66</td>
<td>.79</td>
</tr>
<tr>
<td>TREATMENT II, IMMEDIATE RECALL</td>
<td>46</td>
<td>.50</td>
<td>.66</td>
</tr>
<tr>
<td>TREATMENT I, DELAYED RECALL</td>
<td>21</td>
<td>.47</td>
<td>.63</td>
</tr>
<tr>
<td>TREATMENT II, DELAYED RECALL</td>
<td>19</td>
<td>.44</td>
<td>.61</td>
</tr>
</tbody>
</table>

Mean r is .67

"Σhh" refers to reliability coefficient for a half test.

"Σkk" refers to reliability coefficient for a test lengthened k times.
The remainder of the chapter is characterized by re-statement of each of the null hypotheses, accompanied by a discussion of the statistical findings.

Null hypothesis I: There is no relationship between scores on the Recognition Scale and scores on the Retention Scale. Table IV.I shows that with the immediate recall groups, correlation coefficients were substantially high to justify rejection of null hypothesis I. When the two treatment groups were combined an $r$ of .88 was computed. Table IV.II shows that delayed recall scores between the two tests achieved considerably less correlation, although low positive correlations were calculated.

The implication to be drawn here is that the much smaller of the two instruments does act as a predictive index to the larger test, particularly under immediate recall testing conditions. There are several probable explanations, but one in particular appears reasonably appropriate. Since the smaller test, Recognition Scale, constituted critical words of the speech, it may be that students who recall such stimuli are in fact more involved -- more engrossed -- with the content of the speech than are those who do less effectively with the Recognition Scale. Hence, it may be that the Recognition Scale indexes
### TABLE IV.I
CORRELATION COEFFICIENT BETWEEN RECOGNITION & RETENTION SCORES FOR THE IMMEDIATE RECALL TESTING CONDITIONS OF TREATMENT'S I AND II

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT I</td>
<td>46</td>
<td>.90</td>
</tr>
<tr>
<td>TREATMENT II</td>
<td>46</td>
<td>.88</td>
</tr>
<tr>
<td>I &amp; II</td>
<td>92</td>
<td>.88</td>
</tr>
</tbody>
</table>

### TABLE IV.II
CORRELATION COEFFICIENT BETWEEN RECOGNITION & RETENTION SCORES FOR THE DELAYED RECALL TESTING CONDITIONS OF TREATMENT'S I AND II

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT I</td>
<td>21</td>
<td>.32</td>
</tr>
<tr>
<td>TREATMENT II</td>
<td>19</td>
<td>.54</td>
</tr>
<tr>
<td>I &amp; II</td>
<td>40</td>
<td>.46</td>
</tr>
</tbody>
</table>

"I & II" refer to treatments I and II combined.
the intellectual attentiveness of the subject. It does not assess whether the student enjoys or dislikes the content, nor whether how much the subject himself thinks he is paying attention to the speech. Rather, it specifies, albeit not without error, that if the student achieves a given score on the Recognition Scale, he will achieve approximately a given score on the over-all examination of the speech's content as measured by the Retention Scale.

Null hypothesis II: There is no relationship between scores on the Recognition Scale and scores on the Relational Scale. Tables V.I and V.II show that both the immediate and delayed recall groups attained meagre positive correlations, none exceeding .22. Hence, null hypothesis II was not rejected.

In retrospect, weaknesses in the Relational Scale seem manifold. For example, overexposure of the critical words may have made their appearances on the Relational Scale unduly noticeable. This scale was administered last among the four which contained the critical words, except in the case of the Retention Scale. Practice with the words therefore may have cause contamination.

Another weakness of the scale may be found in its ambiguity. It is purported to measure the likelihood of
### TABLE V.I
CORRELATION COEFFICIENT BETWEEN RECOGNITION & RELATIONAL SCORES WITH THE IMMEDIATE RECALL TESTING CONDITIONS OF TREATMENTS I AND II

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT I</td>
<td>42</td>
<td>.22</td>
</tr>
<tr>
<td>TREATMENT II</td>
<td>46</td>
<td>.08</td>
</tr>
<tr>
<td>I &amp; II</td>
<td>88</td>
<td>.13</td>
</tr>
</tbody>
</table>

### TABLE V.II
CORRELATION COEFFICIENT BETWEEN RECOGNITION & RELATIONAL SCORES WITH THE DELAYED RECALL TESTING CONDITIONS OF TREATMENTS I AND II

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT I</td>
<td>21</td>
<td>.06</td>
</tr>
<tr>
<td>TREATMENT II</td>
<td>19</td>
<td>.18</td>
</tr>
<tr>
<td>I &amp; II</td>
<td>40</td>
<td>.09</td>
</tr>
</tbody>
</table>
a word's inclusion within certain speech topics. However, this does not clarify for the subject the criteria by which he should judge such likelihood.

It had been the purpose for this hypothesis to determine whether recognition of a word in the speech facilitated the word's associative value to the speech. From the foregoing discussion of the weaknesses of the Relational Scale, it can be seen why the data did not yield any substantially, positive findings. The great majority of subjects had learned, through testing contamination, to associate the critical words with the speech they had heard. The fact that only the topic, "Liberalism," was presented to them added to the obviousness of association.

Null hypothesis III: There is no relationship between scores on the Recognition Scale and the number of changed responses evidenced on the Cognition Scale. Table VI.I indicates a fairly high relationship between recognizing the critical words and changing from the original responses on the Cognition Scale to new responses. This table reports the immediate recall groups as attaining an $r$ of no less than .74 and no higher than .75, suggesting that with 46 subjects in each of these experimental
### Table VI.1

**Correlation Coefficient Between Recognition Scores and Cognition Changes for the Immediate Recall Testing Conditions of Treatments I and II**

<table>
<thead>
<tr>
<th></th>
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<th>r</th>
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</thead>
<tbody>
<tr>
<td>Treatment I</td>
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<td>.74</td>
</tr>
<tr>
<td>Treatment II</td>
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<td>.75</td>
</tr>
<tr>
<td>I &amp; II</td>
<td>92</td>
<td>.75</td>
</tr>
</tbody>
</table>

### Table VI.2

**Correlation Coefficient Between Recognition Scores and Cognition Changes for the Delayed Recall Testing Conditions of Treatments I and II**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment I</td>
<td>21</td>
<td>.24</td>
</tr>
<tr>
<td>Treatment II</td>
<td>19</td>
<td>.08</td>
</tr>
<tr>
<td>I &amp; II</td>
<td>40</td>
<td>.23</td>
</tr>
</tbody>
</table>
conditions, either $r$ is probably close to the true coefficient. Each $r$ was sufficiently high to warrant rejection of the null hypothesis. A tentative implication may be stated. Word meaning changes may depend somewhat upon the listener's attentiveness to the meaning inherent in the message. At first blush, at least, the logic appears sound. Before someone can acquire a different meaning to a word, learning of the new meaning must take place, which requires attentiveness to the new or different meaning.

Table VI.II, however, shows that the delayed recall groups did not demonstrate sufficiently high correlations, preventing the rejection of the null hypothesis under delayed conditions. It may be that change of meaning requires less reinforcement, since the apparent modified behavior of the present does not really constitute a re-structuring -- in an enduring sense -- on the part of the individual.

What is operative in these findings may be speculated further. Students who are frequently associated with testing conditions may very well develop a sophistication about what is to be expected from them. Findings as those
in the immediate recall situation may in fact constitute a tacit gesture of appeasement to the experimenter. Suspecting that he is expected to respond in a certain way with the critical words on the Cognition Scale, particularly after having heard the speech, the sophisticated subject may spuriously change his response to supposedly satisfy the experimenter. Changes in response on the Cognition Scale, moreover, would be more frequent by those who scored higher on the Recognition Scale as they would logically detect more of the critical words as they appeared on the Cognition Scale.

Null hypothesis IV: There is no difference between students in treatment I and students in treatment II in their abilities to score on the four separate instruments involved in this study. Table VII.I shows that the hypothesis should not be rejected in terms of the Recognition Scale and the Retention Scale. Critical values needed at the .05 level of significance were not achieved by either test. The Relational and Cognition scores exceeded the necessary critical value. However, the discussed weaknesses of these two scales suggest the unreliability of their t-ratio values. Table VII.II also indicates the probable non-significant differences between the two treatments.
### TABLE VII. I

**TEST OF SIGNIFICANT DIFFERENCES BETWEEN TREATMENTS I AND II, USING THE t-RATIO FOR THE IMMEDIATE RECALL GROUPS. THE .05 LEVEL OF SIGNIFICANCE FOR TWO-TAILED TESTS IS THE CRITERION**

<table>
<thead>
<tr>
<th>CRITICAL VALUE</th>
<th>N</th>
<th>t VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECOGNITION SCORES</td>
<td>1.990</td>
<td>92</td>
</tr>
<tr>
<td>RETENTION SCORES</td>
<td>1.990</td>
<td>92</td>
</tr>
<tr>
<td>RELATIONAL SCORES</td>
<td>1.990</td>
<td>88</td>
</tr>
<tr>
<td>COGNITION CHANGES</td>
<td>1.990</td>
<td>88</td>
</tr>
</tbody>
</table>

### TABLE VII. II

**TEST OF SIGNIFICANT DIFFERENCES BETWEEN TREATMENTS I AND II, USING THE t-RATIO FOR THE DELAYED RECALL GROUPS. THE .05 LEVEL OF SIGNIFICANCE FOR TWO-TAILED TESTS IS CRITERION**

<table>
<thead>
<tr>
<th>CRITICAL VALUE</th>
<th>N</th>
<th>t VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECOGNITION SCORES</td>
<td>2.021</td>
<td>40</td>
</tr>
<tr>
<td>RETENTION SCORES</td>
<td>2.021</td>
<td>40</td>
</tr>
<tr>
<td>RELATIONAL SCORES</td>
<td>2.021</td>
<td>40</td>
</tr>
<tr>
<td>COGNITION CHANGES</td>
<td>2.021</td>
<td>40</td>
</tr>
</tbody>
</table>
Thus, the null hypothesis was not rejected.

The implication drawn here is that the differences in the scores between the treatments was not likely to have been due to the instructions, which were the variables involved. Asking a group to listen to the words of a speech, therefore, may not vary in meaning from requesting a group to pay attention to a speech. The motivations of either group may very likely have contaminated potential results, albeit it was assumed that motivations were held constant by inducing no threat or reward appeals.

Null hypothesis V: There is no difference between scores with the experimental groups and scores in the control group. Tables VIII.I and VIII.II show that other than chance factors were operating to account for the differences in scores between the experimental groups and the control group. Hence, this null hypothesis was rejected.

In the following chapter, a summarized statement of the purposes for this study, its experimental design, and statistical findings will be offered. The chapter will conclude with some further implications drawn from this investigation.
TABLE VIII.I
TEST OF SIGNIFICANT DIFFERENCES BETWEEN TREATMENT I AND CONTROL GROUP, USING THE t-RATIO AT THE .05 LEVEL OF SIGNIFICANCE

<table>
<thead>
<tr>
<th>CRITICAL VALUE</th>
<th>N</th>
<th>t VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECOGNITION SCORES</td>
<td>2.35</td>
<td>80</td>
</tr>
<tr>
<td>RETENTION SCORES</td>
<td>2.35</td>
<td>80</td>
</tr>
<tr>
<td>RELATIONAL SCORES</td>
<td>2.35</td>
<td>80</td>
</tr>
<tr>
<td>COGNITION CHANGES</td>
<td>2.35</td>
<td>80</td>
</tr>
</tbody>
</table>

TABLE VIII.II
TEST OF SIGNIFICANT DIFFERENCES BETWEEN TREATMENT II AND CONTROL GROUP, USING THE t-RATIO AT THE .05 LEVEL OF SIGNIFICANCE

<table>
<thead>
<tr>
<th>CRITICAL VALUE</th>
<th>N</th>
<th>t VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECOGNITION SCORES</td>
<td>2.35</td>
<td>80</td>
</tr>
<tr>
<td>RETENTION SCORES</td>
<td>2.35</td>
<td>80</td>
</tr>
<tr>
<td>RELATIONAL SCORES</td>
<td>2.35</td>
<td>76</td>
</tr>
<tr>
<td>COGNITION CHANGES</td>
<td>2.35</td>
<td>75</td>
</tr>
</tbody>
</table>
CHAPTER V

SUMMARY AND IMPLICATIONS

SUMMARY

This study has been concerned with certain aspects of audience perception. The aspects were operationally defined and experimentally tested. Four of the five aspects or variables were assumed to be some of the components which comprise perceptual behavior. They were studied in light of four instruments: Recognition Scale, Cognition Scale, Relational Scale, and Retention Scale. These measuring instruments had been discussed in terms of their purpose and construction.

The Recognition, Cognition and Retention Scales yielded satisfactory reliability coefficients, while the Relational Scale did not.

The fifth variable of the study was the variation of instructions imparted to separate experimental groups.
of equal size. One group had been told to listen to the words of the speech which were presented, while the other group had been requested to pay attention to the speech. Since the essence of the study had centered around certain words which had been pre-determined as being critical to the presented speech, the following question arose. Would attention toward the words of a speech, produce significantly different results from a group who were requested to pay attention to the speech? Thus, the instructions were handled as a variable which distinguished the treatments. The question which arose after the statistical results were computed was "does telling someone to listen to the words of a speech mean that he does listen thusly?" It might also be wondered whether the request, "pay attention to the speech," might itself act as an inducement to the listening of words more carefully than otherwise. In brief, as with the Relational Scale, the validity of the instructions seemed doubtful.

The null hypotheses were analyzed, and with the exception of the Relational Scale, it appeared that perceptual behavior as it had been defined, could be fruitfully studied. It was noted throughout the statistical analyses, that immediate recall correlations were substantially
higher in every instance than were the delayed recall scores and correlations. It should be noted that the low correlations with the delayed groups were, nonetheless, positive correlations.

IMPLICATIONS

While perception has been receiving considerable attention in areas of sociological and psychological interests, there has been less work done on perception in the field of communication. In speech, where the attention of audiences is inseparable to their perceptions, more research seems adviseable. One question implicit in this study appears worthy of investigation. When the experimenter maintains by operational definition that he is introducing a certain factor, what assurance is there that his subjects perceive it accordingly? Applied more specifically to speech, are these questions: Do audience members perceive supposed "loaded language" as such? Do audience members accept a supposed rational argument as being just that, a rational argument? In brief, do audiences perceive phenomena as speakers intend? If not, what perceptions do they have?

It should appear as an extremely productive study
if an investigation could be centered around listeners who typically retain high degrees of information, then to investigate listeners who typically receive meagre amounts of information, to learn what variations in perceptions these two groups have. To improve the competency of a listener, it seems imperative to discover his incompetencies.

Albeit meagrely, such was the underlying thought of the Recognition Scale. Other scales of this nature might be explored to investigate the saliency of certain stimuli over others as indices of competent listening behavior. It is believed that this experiment attests to the notion that certain perceptual behavior, such as recognition of critical words, is a variant among audience members. Indeed, it was shown that those who attained higher scores on that test performed more efficiently on an information test. The findings which indicated a strong relationship between cognition changes and recognition scores seems to serve as additional evidence of the importance of perceptual variance among individuals. Once again, those who achieved high on one scale tended to respond high on the other.
Briefly, it is believed that studies which unveil the differences in stimuli saliency among listeners should afford rewarding information.
BIBLIOGRAPHY

A. BOOKS


**B. PERIODICALS**


APPENDIX A

RECOGNITION SCALE
Instructions: In each of the items below, one of the five words appeared in the speech on "Liberalism." Choose the correct word by scoring it in the corresponding place on the IBM Answer Sheet.

11. 1. "I am certain" 2. "I don't know" 3. "I'm very interested" 4. "I'm lost" 5. "I know"
APPENDIX B

COGNITION SCALE
1. Certify most nearly means
   1. Choose
   2. Elect
   3. Certificate
   4. Attest
   5. Advocate

2. Incoherence most nearly means
   1. Incohesive
   2. Unheard
   3. Inept
   4. Ensure
   5. Rambling

3. Wonder most nearly means
   1. Amazement
   2. Curiosity
   3. Question
   4. Think
   5. Awe

4. Commence most nearly means
   1. Inward
   2. Initiate
   3. Struggle
   4. Alert
   5. Commune

5. Pluralism most nearly means
   1. Multiplicity
   2. Majority
   3. More
   4. Many
   5. Variety

6. Ineffable most nearly means
   1. Deceased
   2. Unpredictable
   3. Indescribable
   4. Ineffectual
   5. Irrevocable

7. Objectivity most nearly means
   1. Goals
   2. Purpose
   3. Open-mindedness
   4. Preciseness
   5. Analyze

8. Compute most nearly means
   1. Compare
   2. Calculate
   3. Computation
   4. Impute
   5. Confute

9. Discipline most nearly means
   1. Order
   2. Control
   3. Strictness
   4. Behavior
   5. Restraint

10. Trite most nearly means
    1. Strength
    2. Noble
    3. Noble
    4. Commonplace
    5. Most
<table>
<thead>
<tr>
<th>11. <strong>Fallacious</strong> most nearly means</th>
<th>16. <strong>&quot;I am certain&quot;</strong> most nearly means</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Falter</td>
<td>1. Determined</td>
</tr>
<tr>
<td>2. Infallible</td>
<td>2. Certitude</td>
</tr>
<tr>
<td>3. Invalid</td>
<td>3. Truth</td>
</tr>
<tr>
<td>4. Faulty</td>
<td>4. Authority</td>
</tr>
<tr>
<td>5. Foster</td>
<td>5. Indecisiveness</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. <strong>Love</strong> most nearly means</th>
<th>17. <strong>Co-operation</strong> most nearly means</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Affection</td>
<td>1. Help</td>
</tr>
<tr>
<td>2. Like</td>
<td>2. Togetherness</td>
</tr>
<tr>
<td>3. Devotion</td>
<td>3. Agreement</td>
</tr>
<tr>
<td>5. Brotherly</td>
<td>5. Harmony</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. <strong>Immutable</strong> most nearly means</th>
<th>18. <strong>Altruistic</strong> most nearly means</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Unchangeable</td>
<td>1. Truthful</td>
</tr>
<tr>
<td>2. Modifiable</td>
<td>2. Perplex</td>
</tr>
<tr>
<td>3. Deaf</td>
<td>3. Benevolent</td>
</tr>
<tr>
<td>4. Immaculate</td>
<td>4. Infinite</td>
</tr>
<tr>
<td>5. Ultimately</td>
<td>5. Cultural</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. <strong>Empathy</strong> most nearly means</th>
<th>19. <strong>&quot;I don't know&quot;</strong> most nearly means</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Embitter</td>
<td>1. Ignorance</td>
</tr>
<tr>
<td>2. Project</td>
<td>2. Agnostic</td>
</tr>
<tr>
<td>3. Empty</td>
<td>3. Uninformed</td>
</tr>
<tr>
<td>4. Sympathize</td>
<td>4. Doubt</td>
</tr>
<tr>
<td>5. Immediate</td>
<td>5. Indecisive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. <strong>Freedom</strong> most nearly means</th>
<th>20. <strong>Demise</strong> most nearly means</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Liberty</td>
<td>1. Transfer</td>
</tr>
<tr>
<td>2. Democracy</td>
<td>2. Lawful</td>
</tr>
<tr>
<td>3. Unrestricted</td>
<td>3. Decease</td>
</tr>
<tr>
<td>4. Independence</td>
<td>4. Demur</td>
</tr>
<tr>
<td>5. Responsibility</td>
<td>5. Delineate</td>
</tr>
</tbody>
</table>
21. **Tolerance** most nearly means
   1. Patience
   2. Understanding
   3. Allowance
   4. Acceptance
   5. Liberal

22. **Redundant** most nearly means
   1. Clear
   2. Concise
   3. Superfluous
   4. Natural
   5. Lovely

23. **Curiosity** most nearly means
   1. Wonder
   2. Inquisitive
   3. Interest
   4. Nosey
   5. Searching

24. **Responsibility** most nearly means
   1. Duty
   2. Capability
   3. Obligation
   4. Care
   5. Active
APPENDIX C

RELATIONAL SCALE
Instructions:

We are interested in determining the degree to which you would expect to find certain words in the body of five different speeches. To do this, 22 words appear on the next page. They are listed numerically, and along side of each of the 22 words are five titles of speeches. The five speech topics remain the same for the 22 separate words. For each word, please rank in order the probability which you expect for that word to appear within the five speeches. Numeral 1 is to be given to the speech topic which you feel would most likely include that word into its discussion. Rank the next most likely with the numeral 2, and so on to numeral 5 which would represent the least probable topic of including that word.

There are no right answers, but we should like your sincere response.

Instructions for Ranking the topics:
place the numeral on the line immediately to the LEFT of the speech topic. Thus, in the example below, the speech topic Civil Rights is ranked No. 1 for the word "Prejudice".

Example:
1. Prejudice: 2 Family Crisis 5 Atomic War 1 Civil Rights 4 Liberalism 3 Salvation
1. Crucify: Family Crisis Atomic War Civil Rights Liberalism Salvation
2. Tolerance: Family Crisis Atomic War Civil Rights Liberalism Salvation
3. Lust: Family Crisis Atomic War Civil Rights Liberalism Salvation
4. Peace: Family Crisis Atomic War Civil Rights Liberalism Salvation
5. Pluralism: Family Crisis Atomic War Civil Rights Liberalism Salvation
6. "I am certain": Family Crisis Atomic War Civil Rights Liberalism Salvation
7. Freedom: Family Crisis Atomic War Civil Rights Liberalism Salvation
8. Power: Family Crisis Atomic War Civil Rights Liberalism Salvation
9. "I don't know": Family Crisis Atomic War Civil Rights Liberalism Salvation
10. Jealousy: Family Crisis Atomic War Civil Rights Liberalism Salvation
11. Love: Family Crisis Atomic War Civil Rights Liberalism Salvation
12. Evil: Family Crisis Atomic War Civil Rights Liberalism Salvation
13. Co-operation: Family Crisis Atomic War Civil Rights Liberalism Salvation
14. Disaster: Family Crisis Atomic War Civil Rights Liberalism Salvation
15. Wonder: Family Crisis Atomic War Civil Rights Liberalism Salvation
16. Famine: __Family Crisis __Atomic War __Civil Rights __Liberalism __Salvation

17. Responsibility: __Family Crisis __Atomic War __Civil Rights __Liberalism __Salvation

18. Hell: __Family Crisis __Atomic War __Civil Rights __Liberalism __Salvation

19. Objectivity: __Family Crisis __Atomic War __Civil Rights __Liberalism __Salvation

20. Sacred: __Family Crisis __Atomic War __Civil Rights __Liberalism __Salvation

21. Curiosity: __Family Crisis __Atomic War __Civil Rights __Liberalism __Salvation

22. Discipline: __Family Crisis __Atomic War __Civil Rights __Liberalism __Salvation
APPENDIX D

RETENTION SCALE
12. When asked to comment on the term "liberalism", Rockefeller explained that
   1. it best describes the attire of the typical beatnik
   2. it represents an increase in government control over bankers
   3. its meaning is politically clear
   4. its meaning is vague and misleading
   5. it is the core of our free enterprise system

13. Notwithstanding college examinations it takes a pretty smart fellow to say
   1. "life is here to stay, whether we like it or not"
   2. "I know what I know"
   3. "I don't know"
   4. "I know all the answers"
   5. "I am unconcerned"

14. The speech's purpose was to present the meaning of liberalism as a
   1. concept related to political theory
   2. concept related to the conservative philosophy
   3. state of mind which is adaptable to political and religious problems
   4. state of mind which is adaptable to a monolithic society
   5. state of mind which is adaptable to most any human experience

15. The three principles of liberalism were
   1. Freedom, Responsibility, and Competition
   2. Truth, Freedom, and Co-operation
   3. Love, Pluralism, and Research
   4. Freedom, Co-operation, and Pluralism
   5. Love, Pluralism, and Freedom

16. The essence of freedom is rooted in
   1. the right to do as one pleases
   2. strength and humility
   3. discipline and responsibility
   4. the will to rebel
   5. courage and equality
17. The process advocated by the liberal in trying to answer a problem is characterized by
   1. inquiring to a known authority
   2. establishing the answer as absolutely true
   3. accepting divine revelation
   4. adhering to the scientific method
   5. adhering to one's own biases

18. Einstein maintained that
   1. "wonder is the beginning of wisdom"
   2. "the most beautiful thing we can experience is the mysterious"
   3. "the orchestration of life depends upon unity"
   4. "truth is constantly changing"
   5. "science requires a cold and rational approach"

19. Whitehead was used as an example of
   1. warmth
   2. conservatism
   3. scientific method
   4. life's absurdity
   5. political persuasion

20. Two quotations, one from Shakespeare and one from Albert Camus, raised the issue of
    1. discovering how conservative and liberal forces can bring themselves together
    2. how should a government act towards other governments
    3. what is the meaning of life
    4. the basic value of a monolithic culture
    5. how pessimistic the liberal spirit has traditionally been

21. To Hamlet and Camus, life was, respectively
    1. "worthy and sufferable"
    2. "noble and absurd"
    3. "outrageous and absurd"
    4. "pro or con"
    5. "outrageous and absurd"
22. According to the speech, a monolithic culture is said to have
1. a liberal climate, primarily in its schools
2. a liberal climate, primarily in its churches
3. a liberal climate, primarily in its politics
4. ultimate truth
5. a driving interest for the development of an open society

23. The author of the book, *The Liberal Spirit*, was
1. Sam Marini
2. Dahir Wilder
3. Marjo Tingle
4. Horace Kallen
5. Thomas Zraik

24. The example of the biochemist served to show
1. the frequent successes of the physical sciences
2. how Einstein came to accept liberalism
3. how Einstein came to reject liberalism
4. that fools rush in where wise men fail to tread
5. the means for which ultimate truth can be found

25. Browning's quote, "God's in His Heaven, all's right with the world", was
1. in agreement with the liberal position
2. not used in the speech at all
3. used to show the optimistic nature of liberalism
4. not in agreement with the liberal position
5. not actually used in the speech, but was hinted several times

26. The periodical which interviewed Rockefeller was
1. The U. S. Newsweek
2. Time
3. The U. S. News and World Report
4. The Liberal Reporter
5. The Worldy News
27. The most basic principle (of the three principles) of liberalism, was
   1. truth
   2. co-operation
   3. pluralism
   4. love
   5. freedom

28. The liberal person prefers
   1. a closed society
   2. a pessimistic society
   3. a Christian society
   4. an open society
   5. an unrestricted society

29. The orchestra example was used to show that
   1. skills are necessary to a liberal climate
   2. individuals are more important than the whole
   3. common purposes transcend individual purposes
   4. freedom must be unrestricted
   5. life is bedlam

30. Kant's categorical imperative means
   1. demanding categories
   2. categorizing rules for society
   3. man's will to survive
   4. brotherly love
   5. atheistic tendencies

31. According to the speech, ultimate truth is likely to be found in which society
   1. an open society
   2. a pluralistic society
   3. a new society
   4. a closed society
   5. an old society
32. The speech suggested that, to some, liberalism meant
   1. agnosticism
   2. defeatism
   3. atheism
   4. fatalism
   5. pessimism

33. A monolithic culture is essentially the
   1. same as a liberal culture
   2. opposite of a liberal culture
   3. mid-way point between a conservative and liberal perspective
   4. same as a conservative culture
   5. opposite of a conservative culture

34. The most important aspect of the speech was found in
   1. the Rockefeller interview
   2. Hamlet's quotation
   3. Camus's quotation
   4. the bio-chemist example
   5. Einstein's quotation

35. Pluralism depends upon humility
   1. True
   2. False

36. The basic ingredient of tolerance is freedom
   1. True
   2. False

37. The most common meaning of atheism is liberalism
   1. True
   2. False

38. The most common meaning of liberalism is atheism
   1. True
   2. False

39. Freedom is dependent mainly upon liberty
   1. True
   2. False
40. The most common meaning of liberalism is welfare agencies
   1. True
   2. False

41. The speech presented a common meaning of liberalism
   1. True
   2. False

42. The author of this speech was likely a conservative
   1. True
   2. False

43. The liberal believes that ultimate truth is obtainable
   1. True
   2. False

44. Pragmatic truth is achieved best when one employs the scientific method
   1. True
   2. False
APPENDIX E

FINAL DRAFT OF SPEECH-STIMULUS MANUSCRIPT
Instructions:

Please underline between ten to fifteen of the words which you feel are most relevant to the concept liberalism as it is viewed and talked about in this speech. In other words, which of the words - among all of them in the speech - do you think most facilitate the meaning of liberalism as it was intended to be conveyed.

________________________________________________________________________

I would appreciate your turning your copy over to me as soon as you have finished, or you may leave it with Jan, the secretary in 205.

thank you,

john shibley
The U. S. News and World Report recently interviewed Governor Nelson Rockefeller to determine where this potential presidential candidate stands. Among the questions posed to him were: do you feel a "liberal nominee" could win in the next election? and would you characterize yourself as a "liberal"? The Governor hedged in answering either question, but the reason was clear. As Rockefeller explained, the words liberal and liberalism have been so misused in both the religious and political contexts that their meanings at present are vague and misleading.

To some, liberalism means atheism; to others it signifies "welfare agencies"; to others it represents increase of government control; and, to still others it suggests a reduction of government activity. We could go on; for example, there are those who believe that the meaning of liberalism is aptly depicted by the dress and manner of the typical beatnik. But rather than continue this parade of surface glimpses at liberalism, let me come directly to the heart of the matter.

It is the purpose of this speech to present the meaning of liberalism as a state of mind, not as a specific
political or religious doctrine. In order to do this I have chosen three principles of this way of thinking which I hope will enhance your understanding of the term. The three principles are freedom, pluralism, and co-operation.

Among the most basic of the three is freedom, but it is not the kind that is allowed to run rampant. The liberal is not free to believe or do as he pleases, but what he must believe and do. The essence of this kind of freedom is rooted in discipline and responsibility.

Suppose that a biochemist is working on a new idea which, if verified, would provide a major breakthrough in understanding the life process. Suppose also that it is an unorthodox idea, that it does not conform to the established theory in his field nor to his own previous observations. Yet the idea will not let him alone. His curiosity vibrates with it. He must test it.

How does he test it? This is the important question. Does he claim that his idea has been divinely revealed, and should now be accepted by all as authoritative rule? No. What he does is to put his idea through the most rigid experimental tests he and his colleagues can devise.
He shares his idea and his methods with fellow scientists, urges them to uphold or upset his findings, solicits alternative ideas that may clarify or change his own thinking. Then if his idea survives this process, which we might call liberal-objectivity, it graduates from the status of an idea to that of a verified truth: not an absolute truth, but a verified or pragmatic truth.

Freedom in the liberal-objective sense therefore means the opportunity to cultivate an attitude toward knowledge and understanding which characterized the research scientist. But it should be noted that this scientific rigor is not the "coldly" rational exercise which it frequently is misunderstood to be. Witness a few examples of warmth which emanate from the scientific spirit. "In all human experience," said Whitehead, "wonder is the beginning of wisdom." Again, perhaps the most thoroughly clear thinker of this age, Albert Einstein, wrote: "The most beautiful thing we can experience is the mysterious. It is the source of all true art and science. He to whom this emotion is a stranger, who can no longer pause to wonder and stand wrapped in awe, is as good as dead: his eyes are closed."
Related to the notion of freedom is the second principle, pluralism. Most of you can easily guess its meaning -- logically it suggests variety or diversity; it means many or a multiplicity of things or ideas. But unlike the trite expression "variety is the spice of life," there is a richer, more profoundly philosophical reason why the liberal mind prefers a pluralistic climate. Let me try to explain it.

Notwithstanding college examinations, it takes a pretty smart fellow to say "I don't know." He isn't dead-certain of any of his answers. In fact, if he is to be completely honest, he will admit that most of his answers are open to serious examination. Here are two quotations to point up what I mean. The first is part of Hamlet's famous soliloquy:

To be or not to be, that is the question;
Whether tis nobler in the mind to suffer
the slings and arrows of outrageous fortune,
Or to take up arms against a sea of troubles
And by opposing end them.

The other is an excerpt from Albert Camus' the Rebel:
"If nothing has any meaning and if we can affirm no values whatsoever, then everything is possible and nothing has any importance. There is no pro or con: the murderer
is neither right nor wrong. We are free to stoke the crematory fires of the concentration camp or to devote ourselves to the care of lepers. Evil and virtue are mere chance and caprice."

Each of these quotes point up the eternal quest for meaning; each wants to know "how should man act and in what should he believe?" To Hamlet life was an "outrageous fortune." To Camus life was "absurd." There is not this stark pessimism with the liberal; however, neither is he inclined to agree with Browning that "God's in His Heaven, all's right with the world." He knows the one-way system of monolithic cultures, and they are in direct opposition in character to the pluralistic society. In a monolithic culture the ultimate truth has been found, whether it is Marxism, Fascism, Republicanism, Democratism, Christianity, Buddhism, Judaism, or what-have-you. When you have the final truism, you shut the political, economic, religious, and social doors on foreign views; this is the closed or monolithic society, the antithesis of liberal pluralism.

The liberal not only pursues whatever intelligent choices he sees available, but is also bent on re-checking his present actions and thoughts. In this sense, pluralism
depends upon humility. For although he employs his most efficient tool, liberal-objectivity, in arriving at decisions, he is still conscious of its limitations; and what is more, he is still at wonder and wrapped in the awe of life's mystery.

Horace Kallen, in his book The Liberal Spirit, refers often to the orchestration of life. He may very well have called it the orchestration of freedom and pluralism enhanced by co-operation, the third principle I should like to mention.

An orchestra is made up of individuals, each playing a different instrument. If each person were to play exactly what he liked, the result would be bedlam. The same holds true in a plural society where freedom is undisciplined. But because each member of the orchestra is united in common purposes which transcend the individual parts, each's very difference contributes to the grandeur of the production.

In an orchestra of the highest caliber, each member is free to exercise his utmost skill and to make the most of his individual contribution. For the liberal, freedom is defined within the limits of a co-operative state of affairs. The tolerance of others' ways and beliefs is
prompted by an essential ingredient of co-operation, love. Whether you call it Kant's "categorical imperative," the Golden Rule, the Humanist Creed, or the mark of Zen Budhism, is the final breakdown the meaning is the same, brotherly love.

There you have it. The meaning of liberalism as evidenced in three principles. It was neither a political nor religious definition, but rather a state of mind which, hopefully, is applicable to most any of the problems which confront the human condition.
APPENDIX F

TREATMENT I INSTRUCTIONS
Today a grad student in the Speech Department will deliver an 8 minute talk on a subject of current interest and significance. This presentation is part of a study being conducted by an advanced graduate student. You are requested to pay particular attention to the words used in the speech.

In a subsequent class period, you will be informed of the purposes and findings involved in the study.

PLEASE LISTEN TO THE WORDS IN THE SPEECH
APPENDIX G

TREATMENT II INSTRUCTIONS
Today a grad student in the Speech Department will deliver an 8 minute talk on a subject of current interest and significance. This presentation is part of a study being conducted by an advanced graduate student. You are requested to pay attention to the speech.

In a subsequent class period, you will be informed of the purposes and findings involved in the study.

PLEASE PAY ATTENTION TO THE SPEECH
I, John Dahir Shibley, was born August 12, 1936, in Toledo, Ohio. I received the Bachelor of Science and Master of Arts degrees from Bowling Green State University in 1958 and 1959, respectively. During the academic year 1959-1960 I taught English and Speech at Bowling Green High School in Bowling Green, Ohio. The following three and one-half years I served as a graduate assistant, working toward the Ph.D. at Ohio State University. Work for the degree was completed in June, 1964.