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ABSTRACT
                The first part of this report presents background and
procedures of the 1968 New Orleans conference on speech-communication
and lists the recommendations formally adopted by the conference
concerning research priorities, graduate instruction, and issues and
responsibilities in speech-communication. The major section of the
publication is devoted to conference papers and short responses. One
paper, followed by two responses, is presented on each of four
subjects--research guidelines for human information processing, the
acquisition of communication behavior and deleterious effects caused
by mismanaged acquisition, proposals for useful research in
communication and decision, and research methodologies in
speech-communication. Discussions in a concluding section review the
implications of the conference recommendations from the perspectives
of historical, behavioral, and critical scholarship. Appendices
include abstracts of papers prepared for the 1967 Interdisciplinary
Colloquium at Racine, Wisconsin, a list of participants and observers
to the New Orleans conference, and the conference format and
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CONCEPTUAL FRONTIERS

IN SPEECH-COMMUNICATION

Report of the Nev Orleans Conference
on Research and Instructional Development

CS 500861

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CONCEPTUAL FRONTIERS
IN SPEECH-COMMUNICATION

Report of the New Orleans Conference
on Research and Instructional Development
New Orleans, Louisiana
February 11–16, 1968

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ACKNOWLEDGMENTS

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PART I

Introduction and Conference Recommendations

CHAPTER ONE

Conference Background and Procedures

JOHN E. DIETRICH

Background, Context and Objectives

The Conference on Research and Instructional Development in Speech-Communication, generously supported by the Arts and Humanities Program of the United States Office of Education, did not burst "full-grown" upon the scene in the Spring of 1968. It represented the fruition of several years of measured and sometimes tortuous development by several of the best minds in the Speech Association of America.

In 1963 the Association, which had grown from 17 members in 1914 to more than 5,000 members, accomplished a long-sought objective -- to establish a permanent national office. The purpose of the national office was to coordinate the diverse programs of the Association and to mobilize more fully its resources toward the accomplishment of its goals and purposes.

In 1964, the Association established a Research Board. The purposes of the Research Board were (1) to help define meaningful research parameters for the field, and (2) to facilitate the development of relevant research on a national scale. These two decisions were important forerunners of the Conference on Research and Instructional Development in Speech-Communication.

Selection of the Focus for the Conference

From its inception, the Speech Association of America has represented a broad spectrum of scholarly and instructional interests. The field of speech historically has embraced educational activities in the arts and humanities, the social sciences and the natural sciences. The

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performing arts have been represented by such fields as theatre, oral interpretation, and broadcasting. The humanities have been represented by the field of rhetoric and public address. The social sciences have been represented by the field of communication. The natural sciences have been represented by the field of speech and hearing science. The very breadth of the speech-communication arts and sciences posed a dilemma for the Research Board.

Previous conferences emphasizing certain areas had been held. In 1963, a conference on graduate education in speech pathology and audiology was sponsored by the American Speech and Hearing Association.[1] In 1966, a conference on theatre research was held at Princeton University.[2] Each of the conferences helped to develop focus and direction in these fields.

Communication and rhetoric were identified as two major areas of concern to the Association needing intensive study. After protracted deliberation, the Research Board decided that a study of the developing behavioral science approach to the theory and process of speech-communication required the most immediate attention. At the same time, the Board was careful to point out the need for a research conference on rhetoric. The activities of the Research Board in the last two years have led to the establishment of a steering committee responsible for planning an "Interdisciplinary Conference on Rhetoric." This steering committee, headed by Professor Lloyd F. Bitzer, presented a progress report on plans for the interdisciplinary conference at the 1968 Speech Association of America Summer Conference, in July.

Selection of the Term Speech-Communication

As early as 1962, many members of the Association felt that the term "speech" was inadequate to express the total concerns of the Association. In 1964, the Executive Committee of the Association proposed a national survey to determine whether or not the term "communication" would best represent the characteristics of the central area of study. To date, this basic question has not been resolved.

It is important to recognize that the selection of the term *speech-communication* represents an attempt to link divergent points of view in the field. The selection of this term for the project is not thought to be, by the members of the Research Board or by the officers of the Association, a definitive solution to the problem of nomenclature.

Objectives of the Project

The Research Board believed that efforts to develop more effective instructional programs and curricula in speech-communication should

be based on:

1. Continuing modification of theoretical research models and curricular patterns resulting from an analysis of societal needs and classroom performance measured against specific educational objectives.
2. Specification of individual oral communication competencies needed for basic survival, upward mobility and leadership roles.
3. Analysis of the total context of group communication processes inherent in democratic problem-solving activities at the local, national and international levels.

Expressed in more concrete terms, the overall objectives of the conference were defined as the need:

1. To reassess the speech-communication needs of society through discussion with interdisciplinary scholars.
2. To specify significant areas for research and instructional development in speech-communication.
3. To appraise the extent, kind, quality and societal relevance of research being conducted in speech.
4. To generate new research hypotheses appropriate to the study of speech-communication in modern society.
5. To examine the implications of these research hypotheses for the development of more viable instructional programs.
6. To disseminate the findings of the conference in order to stimulate productive research and instructional development within the speech-communication profession.

Rationale Supporting the Objectives

In the proposal submitted to the United States Office of Education, Arts and Humanities Program, the Research Board explained in some detail its reasons for believing that an in-depth study of the field of speech-communication was mandatory. Despite its length, this rationale is reported here in full since it served as the basis for the development of the conference.[3]

1. Changing Research Models and Curricular Patterns

a. *Speech-Communication is Interdisciplinary.* Speech-communication cannot readily be classified as a "discipline." The diverse concerns of the field range from scientific investigations of the etiology of communicative disorders to humanistic studies in the history and theory of the platform and theatre. In addition to the research which is generated within the field of speech-communication, other research in the humanities (e.g., linguistics, English, American studies) and in the social sciences (e.g., psychology, social psychology,

sociology, political science and the mass media) have contributed substantially to knowledge about oral communication in its various dimensions.

In an educational context increasingly dominated by narrow specialization, speech-communication characteristically builds on accumulated knowledge and creative thinking available in these related disciplines. Therefore, any conference on research and instructional development in speech-communication must draw conspicuously on disciplines outside the field itself.

b. *Speech-Communication is a Major Field in Transition.* Speech-communication as a field of study is firmly established in higher education. The undergraduate major in speech and drama was used recently by Haswell and Lindquist to represent programs typical of humanistic disciplines.[4] Over 600 departments offer advanced degrees. In 1963, among the twenty major disciplines typical of the liberal arts tradition, speech was tenth in the number of bachelor's degrees granted, sixth in master's degrees, and eleventh in doctoral degrees.[5]

Building upon a strong historical tradition derived from the rhetoric and poetic of Aristotle, contemporary speech-communication is responding to the need for greater societal relevance by re-examining its theories and curricular goals in the light of new humanistic and scientific knowle. ge. The establishment of several carefully structured national research and instructional development conferences is at present imperative if the speech-communication profession is to fulfill its rapidly growing responsibilities.

2. **Individual Needs in Contemporary Society**
   a. *The Acquisition of Speech and Communication is Necessary for Survival.* Problems are studied at the societal level which relate to people who, through cultural degradation or problems related to health or accident of birth, are helped to become productive members of our society. Much of the work of the speech pathologist is in this area, but little attention has thus far been focused specifically on the problem of the culturally deprived.
   b. *Improvement of Speech-Communication is Required for Upward Mobility.* Speech-communication as a variable in the study of upward mobility has been documented by Cartwright.[6] Cartwright states: "Communication is the mechanism by which interpersonal influence is exerted. Without communication there would be no group norms, group goals, or organized group action.

"First, it is perfectly obvious as soon as one bothers to raise the question that all communications are not equally influential. This, of course, has been known for a long time, and there is a respectable literature on the effectiveness of different kinds of content in communication.

"We are not so well supplied, however, with findings concerning the way in which the relations between communication and recipient influence the effectiveness of communication.

". . . communications may serve an individual as a substitute for upward locomotion in a power hierarchy. . . ."

c. *Mastery of Speech Is an Important Characteristic of Leadership.* Donald K. Smith addresses himself to the failure of current instruction to develop the underlying conceptual structure of the knowledge students seek.[8]

    . . . any person seeking genuine growth of skill in managing himself through a life-time as speaker and listener must either ground his behavior in an understanding of the basic concepts of speech-communication or else abandon all hope of rational adaptation to the rapidly changing circumstances which face us all.[9]

3. **Group Process in Society**
   a. *Democratic Decision-Making Processes Depend on Knowledge of Speech-Communication.* It need not be argued that the survival of the nation is dependent upon effective speech-communication. Reduction in international tensions is in large measure dependent upon improved speech-communication. Present failures in communication, despite new knowledge, derive from the limited research into the theory and processes of speech-communication, including the entire complex of creating, encoding, sending, receiving, decoding, and responding to messages.
   b. *Solutions to Societal Problems Depend on Understanding the Speech-Communication Process.* Examples of speech-communication failures may be found in all areas and segments of our society. In an affluent nation that professes its commitment to improved education, more than fifty per cent of all local school bond proposals fail. On a national level, the civil rights struggle, the war on poverty, and efforts to create a more equitable legal structure reflect frequently a widespread lack of knowledge about the dynamics of the oral communication processes. In international affairs, where the problems of effective communication especially are compounded by language and cultural barriers, one's very survival depends upon the exercise of effective communication as an alternative to mass destruction.

4. Summary of Rationale

This is a critical time. It is essential that speech-communication scholars take a long. expert. and comprehensive look from within and from without at the status of research in speech-communication. at its potential. and at the implications derived therefrom for improved instruction. The present patterns of research and instructional program development need greater coordination and a sharper focus. A research and development conference can provide the necessary focus for a more systematic study of speech-communication at all levels of society.

Planning and Procedures

Selection of the Advisory Committee

The Advisory Committee for the conference was selected by the Research Board. This six-person committee was chosen deliberately to represent a wide variety of views and diverse areas in the field of speech-communication. John E. Dietrich, representing the arts, served as Project Director and Chairman of the Advisory Committee. Dietrich is Assistant Provost and was formerly Chairman, Department of Speech, Michigan State University: he is also a past president of the Speech Association of America. J. Jeffery Auer is Chairman, Department of Speech and Theatre, Indiana University and is immediate past president of the Speech Association of America. Auer represented the specialization of rhetoric and public address with a particular emphasis on historiographic methodology from the point of view of the humanities. Samuel L. Becker is Professor of Speech and Chairman-Elect, Department of Speech and Dramatic Art, University of Iowa. Becker represented the study of the communication process with an emphasis on quantitative research methodologies from the point of view of the social sciences. Theodore Clevenger, Jr., is Professor of Speech and Chairman, Department of Speech, Florida State University; he represented the behavioral science point of view regarding speech-communication research. F. Craig Johnson is Assistant Director, Educational Development Program, Michigan State University and formerly served as Chairman of the Speech Association of America's Research Board. Johnson represented media and technological research specialties, as well as the use of communication and technological innovation for curriculum and instructional development. William Work, Executive Secretary, Speech Association of America, represented the broad concerns of the Association, and served as Project Coordina-

tor. Irving M. Brown, Theatre Education Specialist, Arts and Humanities Program, United States Office of Education, served as a staff liaison to the Advisory Committee.

Planning Two Phases for the Project

The Advisory Committee decided early in its deliberations that the research conference in speech-communication should be conducted in two phases. The first phase was conceived as an interdisciplinary colloquium at which experts from other fields would discuss with the Advisory Committee (1) the kinds of research being conducted, and (2) the significant problem areas related to speech-communication research which were receiving insufficient attention in their respective fields.

The Advisory Committee envisioned that ideas included in the interdisciplinary papers and a synthesis of the dialogue derived from the colloquium would serve as a source of stimulation for speech-communication scholars preparing papers for and/or participating in the conference proper. The conference to be conducted as the second phase of the project was designed to build upon the papers, ideas and concerns obtained from the colloquium. The Advisory Committee conceived the second phase as involving the issuance of invitations to outstanding speech-communication scholars to attend a conference directed toward accomplishing the objectives stated previously and toward making recommendations about directions and concerns requiring attention in the future development of the field. The specific evolution of these two phases is discussed below.

The Interdisciplinary Colloquium at Wingspread

On October 10 and 11, 1967, the interdisciplinary colloquium was held at the Wingspread Conference Center of the Johnson Foundation in Racine, Wisconsin. The purpose of the two-day interdisciplinary colloquium was to focus discussion on the interrelationships of speech-communication and cognate fields, in terms of societal needs and implications for research and instructional development.

Pre-Colloquium Procedures: Prior to the Wingspread Colloquium, eight scholars from disciplines cognate to speech-communication were invited to prepare papers related to their interests and competencies. About a week before the colloquium, the eight papers were sent to members of the project Advisory Committee for review and study. Each of four members of the Advisory Committee agreed (1) to review previous research conducted by two of the interdisciplinary consultants, (2) to perform an in-depth analysis of two of the

papers presented by the consulting scholars and (3) to serve as discussion leader during the presentations made by those two consultants.

Colloquium Format and Participants.   John E. Dietrich, Project Director, served as chairman of the Wingspread Colloquium. He opened the colloquium by introducing participants and establishing guidelines for the sessions. Two hours were allocated to each of the eight consulting scholars.

After a consultant briefly summarized the main points of his paper, the member of the Advisory Committee assigned to him initiated discussion. J. Jeffery Auer assumed the responsibility for guiding the discussion on the papers presented by Harold B. Allen (linguist) and Wilcomb E. Washburn (specialist in American studies). Samuel L. Becker led the discussion on papers presented by Basil B. Bernstein (sociologist) and Richard S. Rudner (philosopher of science). Theodore Clevenger, Jr., coordinated the discussion for the papers written by Morton Deutsch (psychologist) and Herbert Menzel (sociologist). F. Craig Johnson initiated discussion on presentations by George G. Thompson (psychologist) and Malcolm S. MacLean, Jr. (mass media specialist). Other members of the Advisory Committee, the project editors and the interdisciplinary scholars subsequently engaged in a free interchange of ideas stimulated by the papers.

Two days of stimulating discussion ensued. The titles of the interdisciplinary papers are listed below with the institutional identification of the scholars who participated in the Wingspread Colloquium.[10] An abstract of each of the eight papers considered at the Wingspread Colloquium is included in Appendix A.

"Linguistics Today and the Field of Speech," Harold B. Allen, Professor of English, University of Minnesota.

"A Socio-Linguistics Approach to Socialisation: With Some Reference to Educability," Basil B. Bernstein, Professor in the Sociology of Education and Head of the Sociological Research Unit, University of London Institute of Education.

"Conflict and Its Resolution," Morton Deutsch, Professor of Psychology, Columbia University.

"Communication Research: The Tie that Binds—But Loosely," Malcolm S. MacLean, Jr., Professor and Director, School of Journalism, University of Iowa.

"Communication Through Institutions and Social Structures," Herbert Menzel, Professor of Sociology, New York University.

"On Pre-Theoretic Behavioral Science," Richard S. Rudner, Professor of Philosophy, Washington University.

"Notes and Comments for SAA-USOE Interdisciplinary Collo-
quium," George G. Thompson, Professsor of Psychology, Ohio
State University.

"Speech Communication and Politics," Wilcomb E. Washburn,
. Chairman, Department of American Studies, Smithsonian In-
stitution.

Activities between the Wingspread Colloquium and the New Orleans Conference

At the conclusion of the Wingspread Colloquium, the Advisory
Committee met to review the results of the colloquium and to discuss
final plans for the second phase of the project—the Conference on
Research and Instructional Development in Speech-Communication
held in New Orleans on February 11 to 16, 1968. The dialogue with
the outside experts during the colloquium guided the Advisory Com-
mittee in establishing (1) a final list of participants for the New Or-
leans conference, (2) the areas of primary concern in research and
instructional development to be considered and (3) a flexible confer-
ence format.

*Selection of Participants for the New Orleans Conference and
Areas of Concentration for the Position Papers.* Twenty-four
speech-communication scholars were selected by the Advisory
Committee to receive invitations to the New Orleans conference.
Since it was categorically impossible for the Advisory Committee to
apply all of the selection criteria which might have been desirable,
the following four criteria were given precedence.

First, active scholarship in the field of speech-communication
with a major emphasis on a behavioral science orientation was
required.

Second, the potentiality to diffuse the ideas resulting from the
conference and to introduce changes in the field of speech-com-
munication was required.

Third, an attempt was made to provide a reasonable geographic
distribution and representation from those departments in the
country which had evinced significant effort in the behavioral sci-
ence approach to speech-communication.

Fourth, all scholars selected were required to be active mem-
bers of the Speech Association of America.

The participants selected for the New Orleans conference pos-
sessed certain significant characteristics. First, the publication record
of the participants was impressive. Second, there was a tendency
for the participants to be working not only in their own fields of spe-

cialization, but to have significant contact with related disciplines. Third, the participants were almost without exception young persons judged to be future leaders in the field. It was by design that the participants selected did not manifest the traditional scholarly interests of the field, nor represent the power-structure of departments or the Association. A list of the participants attending the New Orleans conference is included in Appendix B.

Three of the twenty-four participants and one member of the Advisory Committee were selected to present position papers at the New Orleans conference. The four participants and their areas of emphasis were as follows:

Language Acquisition and Behavior—John W. Black, Ohio State University.

Human Informati'm Processing—Gerald R. Miller, Michigan State University.

Decision-Making and Conflict Resolution—Gary L. Cronkhite, Illinois State University.

Research Methodologies in Speech-Communication—Theodore Clevenger, Jr., Florida State University

Eight participants were selected to provide critical responses to the formal position papers. Individuals responding to the formal papers were: John Waite Bowers, Frank E. X. Dance, Donald K. Darnell, Franklyn S. Haiman, Roger E. Nebergall, Stanley F. Paulson, Raymond G. Smith and Frederick Williams. The four papers and the eight responses appear as Chapters Three through Six in Part II of this volume.

Designing the Format for the New Orleans Conference. The Advisory Committee deferred making a final decision concerning the format of the New Orleans conference until after the December, 1967, Speech Association of. America convention in Los Angeles. This action was taken in order to allow members of the Association to express their views and make suggestions. A general session was scheduled at the Association's convention to report the developments of the project to date, to review the main points of the Wingspread Colloquium, and to seek recommendations from interested members concerning the substance and format of the New Orleans conference. John E. Dietrich presided at the convention session and reports were given by members of the Advisory Committee and the project editors. Participants selected for the New Orleans conference were announced and introduced at this session.

The Advisory Committee met after the general session at the convention to make final plans for the New Orleans conference. The

Committee attempted to incorporate suggestions made formally at the general session, and informally through written or oral correspondence from the Association's members to individuals on the Advisory Committee. John Dietrich presented a tentative format for the New Orleans conference, based on suggestions from the general membership and the Advisory Committee. A set of instructions for all conference participants was reviewed at this Advisory Committee meeting. Copies of the conference format proposed by Dietrich and instructions sent to conferees are presented in Appendix C. Both the format and the instructions sent to conferees reflected the ideas and experiences resulting from the Wingspread Colloquium. The instructions to participants included a set of guidelines or a "charge" which also reflected the results of the Wingspread Colloquium.

The format and instructions to participants were designed to allow maximum participation by conferees in all activities of the conference. Each participant in the conference was assigned definite responsibilities. Provision was made for a review by the Advisory Committee of each day's activities with a view toward making needed adjustments in procedures and format.

Approximately two weeks before the New Orleans conference, all participants were provided with mimeographed copies of the four position papers. Participants had previously received several packets of resource materials including the papers from the Wingspread Colloquium.

The New Orleans Research and Development Conference

The New Orleans conference, held at the Fontainebleau Motor Hotel, began at 6:00 p.m., Sunday, February 11, 1968. On Sunday evening there was an opening session in which Dietrich reviewed the structure and purposes of the conference.

Principles Shaping the Format of the Conference. In establishing the format for the conference, the Advisory Committee prescribed five principles. First, the conference was not to be one in which participants passively listened to experts. For this reason, position papers were submitted in advance of the meetings and the authors were provided only with an opportunity to summarize and answer questions.

Second, substantial time at the conference was to be devoted to intensive small-group discussions. General or plenary sessions were held to a minimum. Small work groups of eight participants were used extensively. Periods for individual work and consultation were provided.

Third, conference time was to be devoted to evolving principles and premises which were oriented toward action. It was thought mandatory that, by the end of the five days of discussion, significant guidelines for the future development of the field be stated in clear, explicit, action-oriented form.

Fourth, in order to avoid retracing conventional paths in the study of speech-communication, content areas for the position papers and for discussions were to be posed deliberately in unconventional ways. These problem-topics defined by the Advisory Committee were assigned subjects for the position papers: language acquisition and behavior, human information processing, decision-making and conflict resolution, and research methodologies in speech-communication. These subjects were assigned with full recognition that such a four-part division could not possibly cover all aspects of the field. Special periods were provided for the introduction of other, significant concepts and approaches.

Fifth, propositions reflecting matters requiring attention in the four areas of concentration were to be prepared by work groups. The work groups considered the four problem-topics in their relation to (1) issues and responsibilities of the field, (2) research priorities, and (3) implications for graduate training. The propositions with accompanying rationales were presented by the work groups to plenary sessions of the conference for debate and action.

Operations of the Conference. The conference was structured so that the position papers and responses were presented during Monday and Tuesday mornings and Monday and Wednesday afternoons. A special session devoted to "New Areas and Issues" was scheduled on Tuesday afternoon. Immediately after the position papers and responses were presented at each general session, the participants divided into three small discussion and drafting groups. The three small groups considered (1) issues and responsibilities, (2) research priorities, and (3) graduate training. The small groups reported back in general sessions at regular intervals. During the first two and a half days, the participants followed the initial schedule and rotated among the three small groups. As a result, almost every participant had an opportunity to work with each of the three groups and to gain some insight into the interrelationships and overlappings among the three areas on which the conference recommendations were to concentrate.

This format continued until Wednesday noon when the participants were again divided into three groups to draft the final conference recommendations. Participants were initially assigned to groups by computer (see Appendix C). However, as a result of a suggestion

during one of the general sessions, each participant was asked to select the group in which he wanted to work in drafting final conference recommendations. Each participant was assigned to the drafting group that was his first choice. This type of flexibility in the conference, a result of daily review and suggestions by all participants, was felt to be one of the most useful format features of the conference.

The core of this document is a set of recommendations with brief accompanying rationales approved by the conference. These evolved in the three drafting groups. These recommendations are published in Chapter Two.

NOTES

1. *Graduate Education in Speech Pathology and Audiology*, ed. Frederic L. Darley, et al. (Washington, D.C.: American Speech and Hearing Association, 1963).
2. "Conference on Theatre Research," *Educational Theatre Journal*, ed. Alan S. Downer, XIX, Special Issue (June 1967), 235–309.
3. John E. Dietrich, "A Conference on Research and Instructional Development in Speech-Communication." Proposal for research and/or related activities submitted to the United States Commissioner of Education for support through authorization of the Bureau of Research by the Speech Association of America, New York, New York, August 15, 1966, pp. 3-6. (Mimeographed.)
4. Harold A. Haswell and Clarence B. Lindquist, *Undergraduate Curriculum Patterns* (Washington, D.C.: United States Office of Education, 1965).
5. Franklin H. Knower, "The Communications Explosion and the Study of Speech," *Central States Speech Journal*, XIV (November 1963), 241–246.
6. Dorwin Cartwright, ed. *Studies in Social Power* (Ann Arbor, Michigan: University of Michigan Press, 1959).
7. Cartwright, pp. 7-8.
8. Donald K. Smith, "Speech for Tomorrow: Concepts and Context," *The Speech Teacher*, XV (January 1966), 30-33.
9. Smith, p. 33.
10. Interested readers are referred to the following source for a brief discussion of some of the major ideas resulting from the Wingspread Colloquium: Robert J. Kibler and Larry L. Barker, "A Preliminary Report on the Wingspread Colloquium," *Spectra*, III (December 1967), 1, 7-8. Individuals interested in purchasing copies of the full texts of the eight formal colloquium papers may secure them by writing to: Speech Association of America, Statler Hilton Hotel, New York, New York 10001.

Recommendations Formally Adopted by the Conference

Introduction

This chapter contains the recommendations and accompanying explanatory statements approved by the Conference on Research and Instructional Development in Speech-Communication, sponsored by the Speech Association of America and the United States Office of Education. Readers should not infer that what is reported here necessarily reflects the views of the total membership of the Speech Association of America. The following recommendations are those approved by at least a majority of the conference participants. No effort has been made to arrange the recommendations in order of importance, since no such judgments were made by the conferees.

During the last two days of the conference, final recommendations were formulated by three drafting committees. Conference participants were assigned to drafting committees of their choice. These three committees worked independently. Then drafting committees reported their recommendations and accompanying explanatory statements to a general session of the conference. Each recommendation was discussed and voted upon individually during a general session.

At the conclusion of an assigned time period. a vote was taken on the recommendation under consideration. Accordingly, some recommendations received more attention than others and, consequently, profited from more deliberation and refinement by conferees. The votes were taken to make certain that recommendations resulting from the conference reflected the views of at least a majority of the conferees. Recommendations that failed to reflect a majority

opinion subsequently were expunged from the record by a major' y vote.

Each participant, the members of the project advisory committee, and the project staff cast votes. J. Jeffery Auer served as chairman for the general sessions devoted to discussion of the recon mendations. Since Auer elected to abstain from voting, there were thirty-two possible votes. However, the total number of votes cast varied from recommendation to recommendation because f incidental voter absences and because voters had the usual option of voting "yes," "no," or abstaining.

The reader will note that several recommendations are similar. This redundancy resulted in part from the conferees' efforts to emphasize important points and to insure that slight distinctions between related recommendations were made explicit.

Early in the conference there was considerable ambiguity and disagreement about certain recurring terms in the recommendations. Accordingly, a portion of one general session was devoted to a discussion and vote on certain critical terms used in this report. A list of terms preferred by conferees to describe key concepts appears below.

Where appropriate:

Speech-communication was preferred over such terms as "communication," "speech," and "speech communication" (without the hyphen joining the two words) to name the area of study with which the participants identified—the scientific study of spoken symbolic interaction.

Academic unit and related terms were selected rather than such words as "speech department," "division," "institute," "research center," or "department," to describe a first-order subdivision within a university's organizational pattern. Infrequently, this term was used to refer to a lower-order subdivision or area within a first-order subdivision.

Conferee and related terms were chosen to identify the individuals attending the conference.

Speech-communication scholar and related terms were selected to refer to individuals engaged in the scientific study of speech-communication rather than such words as "communication scholar," "rhetorician," or "speech-educator."

Area of study, field of study and related phrases were preferred over the term "discipline" to identify the branch of inquiry or knowledge that focuses on the scientific study of speech-communication behavior.

Speech-communication research and related phrases were adopted to identify the area principally concerned with the scientific investigation of messages, their antecedents, and their consequences.

Speech Association of America and *Association* were preferred to such terms as "national association" to designate the major organization with which scholars in this profession presently identify.

The purpose of this report is to stimulate continuing discussion among scholars regarding the development of effective research and instructional programs focused on the scientific study of speech-communication behavior. Of course, this report does not provide definitive solutions for the problems of the field. It is a beginning effort to identify some of the problems and to suggest some alternatives for solving them. Responsibility for finding imaginative, yet feasible, methods to implement these recommendations rests individually and collectively with scholars in the field.

> [*Editors' Note: The recommendations which follow were prepared independently by three different committees. Therefore, some overlap occurs among them. Each recommendation was placed formally before the entire conference by the individual committee urging its adoption. Any alterations in the recommendations were made by parliamentary action. Consequently, the recommendations are presented in this document exactly as framed, debated and passed. thus constituting the* **formal record** *of the conference's actions.*]

Recommendations Concerning Issues and Responsibilities in Speech-Communication

Recommendations Dealing with the Scope, Focus and Identity of Speech-Communication

The conferees recommend acceptance of the following description of the area of study in speech-communication:

Spoken symbolic interaction is the central focus of study in the speech-communication area.

Several terms in this key recommendation require further explanation. Conferees used *speech-communication* to name a substantial area of study within the larger field of communication. The

term *focus* implies a core of continuing concern to be maintained by scholars in this area. *Central focus* suggests an area of common concern rather than a limiting enclosure. One participant emphasized this point as follows: "The key phrase here is *central focus* and the statement does not represent an attempt to impose any rigid boundaries regarding the types or kinds of inquiry undertaken by scholars in this area of study.

Conferees used the term *area*, rather than discipline, intentionally. In an era of interdisciplinary study, the more neutral term "area" was deemed a more suitable designation for the focus in speech-communication. Whether speech-communication is called a discipline, an area, or a field may be largely a matter of personal preference and local custom.

The phrase *spoken symbolic interaction* directs attention to essential processes in this area of study. Men speak, they symbolize, and they interact as they communicate. Thus, for some purposes, *spoken symbolic interaction* may be equivalent to symbolic interaction through speech, symbolic codes in speech interaction, or similar transformations. One observer summarized much of the discussion regarding these and other terms in the following statement.

> Useful concepts in the conference have been represented by the metaphor *coupling* and the term *transaction*. I suggest that these terms and concepts may be especially useful in communicating what the conference believes all Speech Association of America members are and ought to be interested in: how human beings link themselves with others by means of symbols, especially oral symbols. It could be posited that this *process* of coupling, linking, transacting, is itself the core *content* of our field. It could further be argued that we differ from other scholars and teachers in that we take the communicative transaction *per se* as our special object of study.
>
> "Variable" is another important concept that must be used extensively in the reports of this conference. I suggest that it is possible to make the point that the "forms," "structures," "gestalts," or whatever other term may be preferred, which constitute the contexts in which messages and communication arise, are clusters of "variables" deserving intensive study and, sometimes, study through the experience of performance. Now, it seems the consensus of the conferees that any and all significant "variables" of the communicative process need intensive study. I suggest that it could be pointed out to the field that *neither* the "traditional" contexts for communicative behavior (especially theatrical, oral interpretative, debate, etc.), nor the less "traditional" ones, have been explored thoroughly either philosophically or scientifically.

An approach to "tradition" built on these two concepts, pos-
sibly, might make it clear that the conferees' recommendations
to the field are *inclusive* of the "tradition" rather than exclusive
of it.

Additional recommendations and discussion regarding the central
focus of the speech-communication area appear in the next section
of this chapter.

The recommendation that scholars in the speech-communication
area focus on spoken symbolic interaction may appear to some read-
ers to include or exclude too much. Some participants viewed the
focus on spoken symbolic interaction in speech-communication as
a very large area in which a framework has been provided to lo-
cate and develop a specialty. Other participants considered speech-
communication as only one of several areas of communication
study, but recognized it as a major area of specialization.

Conferees were divided in their opinions concerning the most ap-
propriate terms with which to identify the central focus of study in
speech-communication. They disagreed regarding such matters as
whether the term "spoken" should be included in the statement,
whether the word "human" should be used to modify interaction,
and whether "spoken symbolic interaction" is the most appropriate
phrase to identify the central focus in the speech-communication
area. The content and wording of this recommendation received
serious and sustained attention throughout the conference.

In terms of academic organization, conferees noted that speech-
communication, with a focus on spoken symbolic interaction, reason-
ably may take one of at least three forms: as a major unit in a
department, as a department in a school or college, or as a school
or college with departments of its own. The conferees agreed that the
scope and significance of the area will require an organizational
structure at least equivalent in size to a department.

RECOMMENDATION 1: Within the scope of a cen-
tral focus on spoken symbolic interaction, the conference
participants recommend that the importance of scientific
approaches in speech-communication research be stressed.

The conferees recognized the several advantages of scientific ap-
proaches to research and theory building. The value of encouraging
various approaches to scientific inquiry was emphasized. One con-
feree commented on the nature of scientific inquiry as follows: "I
have always understood that that which was scientific involved an
attempt to establish lawful relationships between antecedents and
their consequences in such a way as to enable prediction and replica-

tion." A few participants suggested that the approach to studying spoken symbolic interaction should be limited to concepts capable of operational definition. However, most agreed that scientific research transcends operational definition. It was noted that in one contemporary philosophy of science there is considerable controversy regarding the role and possible futility of operational definition in scientific inquiry.

Most conferees supported this recommendation, but a few questioned the value of including it in this report. One participant phrased his opposition as follows:

> It seems to me this statement is at least ten years out of date. The term "scientific" may have been relevant in earlier periods. but it doesn't mean much any more. What you really do is operationalize your method. I oppose the resolution not because I endorse any other method than one which is scientific: it is just that we might as well say we endorse excellent research because the word scientific has become nothing more than an honorific term which people who are insecure about their status try to appropriate in order to define themselves in the realm of acceptability.

While the importance of a variety of methods for investigating spoken symbolic interaction was stressed, conferees also emphasized the necessity for sustained investigations building toward a solid theoretical base. Conferees agreed that scientific approaches will probably move toward that goal. Accordingly, the conferees urged that scientific approaches be given the highest priority in the deployment of available energy and resources for the critical task of developing and testing speech-communication theories.

RECOMMENDATION 2: The conferees encourage the use of scientific approaches to inquiry in many areas of speech-communication which have traditionally used different approaches—such as rhetorical criticism, oral interpretation and theatre.

The conferees recognized that many traditional humanistic concerns are amenable to scientific investigation. This recommendation states formally what many conference members have discovered—that colleagues concerned with other areas of study in speech-communication can be encouraged and assisted in the scientific study of certain problems to the mutual benefit of all concerned.

RECOMMENDATION 3: The conference participants strongly recommend to colleagues in the Speech Association of America that the Association consider changing its name to include the word "communication."

While the matter of changing the name of the Speech Association of America has received sustained attention by the membership in the last decade, the conferees proposed that additional deliberations are in order. After considerable discussion, the conferees unanimously approved this recommendation. The statement was approved with the understanding that any name change for the Association should include a grammatical form of the word "communication." Most participants were unwilling to accept a *variant* of the term "communication."

> RECOMMENDATION 4: The conferees strongly recommend to colleagues in the Speech Association of America that academic units in speech-communication seriously consider a name change which includes the word "communication."

The intent of this recommendation is similar to that of the previous recommendation. Whereas the previous recommendation encourages a name change for the Association which includes the word "communication," this recommendation calls for a comparable name change at local, institutional levels—for colleges, schools, departments, divisions and/or research centers. Conferees encouraged this change in name for academic units because "communication" appeared to them to be a more accurate and comprehensive term than many currently used to identify the diverse interests of scholars in this area. Successful implementation of this recommendation will depend substantially on local custom and the personal preference of scholars associated with specific academic units.

Recommendations Dealing with Speech-Communication Functions and Relationships to Other Academic Areas

> RECOMMENDATION 5: The conferees encourage speech-communication scholars to be informed of relevant contributions from related fields, to make their research findings available to scholars in related areas of study and to participate in appropriate research programs with scholars in other areas of study.

This recommendation emphasizes the continuing importance of two traditional obligations of the scholar—to acquire information and to disseminate important research contributions. In addition, the recommendation stresses that speech-communication scholars should generate a unique kind of research, and should be able and willing to cooperate in research programs in other areas.

Several individuals urged that this recommendation be defeated because it was obvious that scholars have a continuing obligation to acquire and disseminate important, relevant information. Others observed that obligations of speech-communication scholars to those in other fields should be emphasized. Subsequently, the recommendation was unanimously approved.

Conferees recognized it is not always possible in the midst of an information explosion for the scholar to know all the potentially relevant literature in his area. Keeping informed in related areas was considered even more difficult. Conferees noted that present procedures for acquiring information may not be adequate. This recommendation directs individual scholars and groups of scholars to develop, and make known their attempts to develop, a solution to this critical problem of information processing. As a minimum, information about alternative plans is needed for selecting, storing, processing and replacing "items of information" or "data bits" gathered from the world's research literature. One example cited was the microfiche documents available through the United States Office of Education's ERIC system, which are low enough in cost to make feasible storage in a departmental file. Some participants predicted the microfiche documents are likely to be replaced in the seventies by on-line, computer-based, information systems.

The drafting committee intended that this recommendation also clarify some of the relationships between speech-communication scholars and scholars in other areas of study. The use of the term "interdisciplinary" was avoided because the drafting committee wanted to emphasize the unique focus of speech-communication.

> RECOMMENDATION 6: The conferees recommend to our colleagues that the scholarly and educational objectives of the speech-communication area—the understanding and modification of communicative behaviors—be related productively to theory and performance in other areas traditionally embraced by the Speech Association of America.

The intent of this recommendation is similar to that of the second recommendation. Conferees stressed the value of cooperating at local, national and international levels with scholars who are interested in artistic as well as scientific approaches to the study of speech behavior. Through this and other recommendations, conferees also recognized the validity of various approaches to inquiry concerning speech behavior.

RECOMMENDATION 7:   The conferees encourage speech-communication scholars to identify and study communication problems within the academic community.

Some problems exist in institutions of higher education to which the unique competencies and interests of speech-communication scholars could be applied advantageously. Conferees noted that the communication variables relevant to the university system are as amenable to inquiry as are similar variables in other systems. The conferees-called for speech-communication scholars to become more actively involved in providing advice and conducting research on such problems as classroom communication, student protests, and faculty and student relationships.

RECOMMENDATION 8:   The conferees recommend that academic units concerned with speech-communication scholarship be organized in such a way as to implement the recommendations of this conference.

This recommendation expresses the conferees' dissatisfaction with the present organizational pattern of many academic units with which speech-communication scholars are associated. Conferees intentionally avoided using the term "department" in this recommendation because they were uncertain regarding the most appropriate organizational unit through which the conference's recommendations might be implemented effectively. This recommendation calls for an examination, at individual institutions in which speech-communication units are established, to determine the most effective organizational structure to fulfill the recommendations of the conference. Participants recognized that local customs and personal preferences will determine, in part, how the recommendations will be implemented.

Recommendations Dealing with Social Relevance and Engagement

RECOMMENDATION 9:   The conferees encourage colleagues to accept the view that the central concern of the speech-communication area is with spoken symbolic interaction and is thus socially relevant.

Conferees affirmed through this recommendation that, by definition, the focus of the speech-communication area is inextricably related to socially relevant problems. Speech-communication concepts studied through both basic and applied research are socially

relevant, even though the immediate research results may not be related clearly to current social issues.

RECOMMENDATION 10:   The conference participants encourage speech-communication scholars to design and execute research dealing with the speech-communication dimensions of current social problems.

This recommendation specifies the need for speech-communication scholars to examine contemporary social problems. While the participants stressed in this statement the value of speech-communication research that is socially relevant, they did not intend to imply that such research problems should be investigated to the exclusion of other significant areas. The conferees agreed that different criteria should be applied when considering research problems, such as theoretical significance and methodological soundness.

Initially, the conference was divided on whether this recommendation should be approved. Several members of the drafting committee disagreed with other conferees on the priority which should be assigned to socially relevant problems. Some members of the research-priorities group argued that if quality research is applicable to current social problems, then it is appropriate to conduct it; however, a recommendation should not be supported that places a constraint on scholars to examine current social problems and/or to conduct primarily applied research. After substantial discussion, most participants agreed it was not the intent of the recommendation to prescribe, confine or restrict the kinds of problems scholars should investigate. Rather, the conference intended to recognize that speech-communication scholars have not devoted appropriate attention to current social problems.

RECOMMENDATION 11:   The conferees encourage speech-communication scholars to make every effort to apply the findings of their research to the solution of contemporary individual and social problems.

The conferees expressed a personal commitment, which they hoped would be shared by other members of the Speech Association of America, to help solve some of the important communication problems that agitate our society at individual, community, national and international levels. (This global interpretation of the word "social" is intended throughout this report.) Furthermore, the participants agreed that present research findings from the speech-communication area should be examined and, where appropriate, applied to

current social issues. This recommendation is similar in intent to Recommendation 32.

RECOMMENDATION 12: The conferees encourage scholars in the speech-communication area and where appropriate the Speech Association of America, to pursue representation of their positions at all levels of government.

The conferees recognized that the Speech Association of America frequently has represented the interests of speech-communication scholars at appropriate levels of government. This recommendation reflects the conviction that all members of the Association have a responsibility to be informed about and active in legislative matters and governmental decisions which may influence the profession, the Association and/or the interests of individual speech-communication scholars. Representation at appropriate governmental levels was considered vital to the successful development of research and instructional proposals required to further the aims of the profession.

RECOMMENDATION 13: The conferees encourage scholars in the speech-communication area to recognize their continuing obligation to expose what they consider to be instances of unethical communication.

This recommendation was discussed at length. Some participants expressed concern that the recommendation might sound presumptuous. However, the majority of conferees indicated that, as members of a world community with special expertise and interest in the field of speech-communication, members of the profession have an obligation to be alert to abuses of speech-communication and to call attention to them when possible. One conferee spoke for many participants when he stated, "I don't believe that because we are scientists we should dissolve the tradition of freedom of speech. We should utilize our scientific expertise to ensure ethical responsibility in speech-communication situations in which we may become involved." Conferees recognized the necessity for control in exposing unethical communicative behavior. The responsibility of individual scholars to verify instances of unethical communication identified was stressed.

RECOMMENDATION 14: The conferees vigorously encourage speech-communication scholars to include a broader cultural, geographical, and racial representation in our professional associations.

The conferees agreed that the recruiting policies and procedures of academic units in the speech-communication area should recognize

the value of drawing new members from a broad base to represent sufficiently the interests of various groups in the population. It was suggested that academic units make every effort to recruit faculty members and graduate students representing a broad spectrum of minority groups. Such representation should increase the probability that research problems of consequence to all segments of the society will be examined.

RECOMMENDATION 15:   The conferees encourage speech-communication scholars to make a continuing effort to communicate pertinent content and research findings to the general public through appropriate channels. Such efforts should be accorded the respect and appreciation of the profession.

The conferees discussed the fact that there is considerable pressure to publish research reports primarily in scholarly journals with a limited readership. The conference participants indicated a need for the speech-communication area to report its findings to the widest possible audience. Most conferees agreed that speech-communication scholars should be rewarded professionally for publishing in magazines designed for a general readership. A change of attitude toward "popular publications" should increase the influence of the profession.

Recommendations Dealing with Learning, Curriculum and Instruction.

RECOMMENDATION 16:   The conference participants strongly encourage academic units in our area to develop a scientifically based instructional program in speech-communication.

The conferees recognized that some scholars view speech-communication primarily as an art, based on principles derived from ancient and modern rhetorical theories. The intent of this recommendation is not to discredit in any way the rhetorical heritage of the speech field. It calls for speech-communication scholars to take appropriate cognizance of the scientific approach to the study of speech-communication.

"Program" is a key term in this recommendation. Conferees were concerned with effecting more than content changes in existing courses, or the addition of a few courses to represent a scientific point of view. First, statements should be prepared which specify in behavioral terms the expected student outcomes from a given in-

structional program. Next, valid instruments should be developed
to assess the extent to which students have mastered the objectives
specified. Finally, an efficient instructional program to assist stu-
dents in acquiring the specified behaviors should be designed and
tested empirically.

RECOMMENDATION 17:   The conferees encourage schol-
ars to develop a systematically articulated program of speech-
communication instruction extending from the pre-school ex-
perience through the graduate program which reflects findings
derived from speech-communication theory and research.

Participants emphasized the value of having clearly defined and
measurable objectives for speech-communication instruction. These
objectives should reflect, at all educational levels, the speech-com-
munication needs of the individual student and society. Such a pro-
gram suggests that theory will become more explicit as students
advance in the instructional program. At the lower grade levels the
relationships between spoken language and the development of
mental processes should be a primary consideration. Conferees con-
tended that speech-communication in human interaction must be
emphasized progressively and continuously throughout the entire
instructional program. This recommendation calls for academic
units to provide suitable teacher-training programs for the estab-
lishment of an articulated speech-communication program at all
educational levels.

RECOMMENDATION 18:   The conference participants en-
courage academic units in our area to make pertinent speech-
communication courses available to interested students in all
areas of study.

Conferees agreed that it is not the *primary* function of the speech-
communication area to provide service courses for other disciplines.
However, the conference participants emphasized that speech-com-
munication scholars should be aware of their responsibility to pro-
vide appropriate and pertinent courses needed by students in other
disciplines. Conferees noted that such courses should be made avail-
able with minimal prerequisites.

RECOMMENDATION 19:   The conferees encourage aca-
demic units in our area to provide a course focusing on the
instructional communication process for all prospective teach-
ers.

Message transmission and reception are key variables in the instruction-learning setting. Because of its emphasis on human interaction processes, the area of speech-communication is particularly well-suited to provide prospective teachers with insights into the nature of classroom communication and its relationship to learning and instruction. The conferees separated this recommendation from others because of the special values prospective teachers can derive from studying relationships between speech-communication and instructional processes.

> RECOMMENDATION 20: The conferees encourage academic units in our area to provide honor programs for outstanding speech-communication majors in which independent study and research are emphasized.

The conference participants recognized that certain students are capable of outstanding performance in their academic programs. This recommendation encourages academic units to provide honor programs for these students. Conferees agreed that carefully supervised undergraduate research projects could contribute to the body of knowledge regarding speech-communication. Participants also observed that undergraduate students planning to pursue advanced degrees and/or additional coursework in speech-communication should receive training and experience in research methods prior to entering graduate school. It was noted such research training programs at the undergraduate level at present are developed inadequately in many departments.

> RECOMMENDATION 21: This conference urges the Speech Association of America to arrange a continuing series of conferences designed to bring together speech-communication researchers and other scholar-educators in the field. The purposes of such conferences might include the following:
> a. To provide an opportunity for the exchange of ideas and inforn tion among the participants.
> b. To develop instructional research programs in speech-communication for the elementary and secondary levels.
> c. To revise existing curricula and instruction on the basis of empirical research in speech-communication.

Conferees intended to establish through this recommendation a continuing dialogue between speech-communication researchers and teachers. Implementation of this recommendation should produce several results. The field should be stimulated by the potential applications of pertinent new knowledge. Speech-communication teach-

ers should understand more fully the implications of communication theories and research for their instruction. Researchers should become more aware of needed research in instruction. Researchers should receive feedback on the success or failure of applied theory and research in the learning environment.

> RECOMMENDATION 22: The conferees strongly recommend that administrators of speech-communication units create attractive opportunities for faculty members to acquire and augment research and information competencies needed for excellence in research and instruction.

The sabbatical leave serves as one recognized means for a faculty member to renew and expand his competence in the areas in which he conducts research and instructs students. However, in a period of rapid change the goals often sought through a sabbatical somehow must be incorporated into the daily schedule of faculty members. While the conferees recognized the primary responsibility of the individual faculty member in this matter, they also observed that much can be done by the administrator to *facilitate* such development. Conferees urged speech-communication administrators to arrange conditions in their academic units to encourage the "advanced learner" activity of each faculty member.

One plan was suggested in which an administrator might combine fewer credit hours of instruction and fewer advisees, with salary increases and promotions which *clearly* are contingent on excellence in research *and/or* instruction. However, the conferees noted that such incentive plans can be developed only in specific situations. It was stressed that such arrangements can and should be developed.

Recommendations Dealing with the Role of the Speech Association of America in Promoting, Facilitating and Disseminating Research

> RECOMMENDATION 23: The conferees encourage the Speech Association of America to sponsor research conferences at regular intervals in response to the needs of its constituent bodies. The concerns of such conferences should include the appraisal and evaluation of current research projects. The findings of such conferences should be disseminated widely through Association channels.

This recommendation reflects the need for an ongoing series of conferences designed to coordinate various types of speech-communication research activities and disseminate information about them. There was general agreement that such meetings are essential to further cooperative research programs, to shape future research directions, and to disseminate cohesive reports of significant research

findings. Several participants stressed that such conferences should focus on highly specialized research interests and that the member-ship for such conferences should not be related necessarily to the Association's interest group structure. This recommendation is simi-lar in spirit to Recommendation 21, but focuses on interests which are not related primarily to educational matters.

> **RECOMMENDATION 24:** The conferees recommend that the Speech Association of America study the need for creating, or fostering the creation of, a network of "communication task forces" which can be utilized for such purposes as: providing an impartial communication channel where and when appropriate; gathering data concerning the communication dimensions of crisis and traumatic events; and offering expert advice and counsel where appropriate and welcome.

Conferees noted vast opportunities for research and consulting that should be recognized and acted upon. This recommendation calls for studying the possible values of organizing research task forces in advance of crisis conditions to investigate and help amelio-rate crisis situations in which the role of speech-communication is significant. It often is difficult 'n crisis situations to arrange for the collection of data concerning .he speech-communication dimensions of the event. Conferees stressed the need for establishing the pro-posed communication task forces at local, national and international levels. Such information would be desirable for determining action strategies regarding speech-communication behavior and for plan-ning future research. While participants recognized the difficulty of obtaining funds to establish such communication task forces, they agreed that the Association should study the need for and feasibility of instituting them.

> **RECOMMENDATION 25:** The conferees encourage the Speech Association of America to assess and make appropriate recommendations relative to establishing research libraries, es-tablishing tape and film repositories for use in research and teaching, publishing information to facilitate access to such re-sources, and other collection and dissemination activities.

This recommendation was included to emphasize the need for a central repository for research and instructional materials that would be international in scope. Conferees observed that such a repository would provide a vital link between present and future research ac-tivities of speech-communication scholars. The conferees recog-nized that budgetary considerations would be a prime factor in im-plementing this recommendation.

RECOMMENDATION 26:   The conferees recommend that
the Speech Association of America encourage appropriate
groups to establish minimal standards for adequate training
in their respective areas. These standards should not relate
to accreditation of academic units or certification of individ-
uals. However, they should serve to remind members of the
field that the Association desires high standards in curriculum,
instruction and research.

Conference participants agreed that establishing minimal stand-
ards which are not related to certification can assist individuals in
their professional development and guide academic units in the con-
struction of instructional programs. Although this issue has received
considerable attention in the Association during the past few years,
it has not been resolved adequately. The recommendation calls for
the establishment of minimal academic training standards by appro-
priate groups in the Association to promote systematic and posi-
tive growth.

RECOMMENDATION 27:   The conferees encourage the
Speech Association of America to establish interdisciplinary
research programs with other national and international, pro-
fessional organizations (e.g., Linguistics Society of America,
American Political Science Association, and American Educa-
tional Research Association).

The interdisciplinary nature of speech-communication was stressed
throughout the conference. This recommendation further empha-
sizes the interdisciplinary character of speech-communication. The
conferees suggested that many problems of interest to scholars in
our area are also of interest to scholars in other fields. This call for
interdisciplinary research programs extends beyond the regional
boundaries of the United States; it is international in scope.

ISSUES AND RESPONSIBILITIES
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Recommendations Concerning Research Priorities in Speech-Communication

The conference participants recommend acceptance of the following description of research in speech-communication:

Research in speech-communication focuses on the ways in which messages link participants during interactions. Emphasis is on the behavioral antecedents and consequences of messages and their variations, as well as on the ways that messages interact with communication participants to produce behavioral outcomes.

The conferees recognized that most paradigms of symbolic communication include variables falling into the following classes: physical environment, social environment, source, message, channel, code, noise, and receiver. The participants emphasized that their principal concern was with the *classes* of variables central to speech-communication processes, the variables involved directly in communicative exchanges. In this connection, participants noted that thei arongest interest was in psychological rather than physical variables. Terms frequently used to characterize the major concern of speech-communication processes were "linkage," "coupling," "transaction," "interaction," "message/channel," and "nexus." In the end, most conferees accepted "message."

The conference was divided on the question of what to call this area of study—"speech-communication" or "communication." While the majority of the conferees agreed to accept "spoken symbolic interaction" to describe the central focus of speech-communication, most members of the Research Priorities Drafting Committee preferred the phrase, "human interaction." One member of the drafting committee stated his concern as follows:

I dislike the idea of using spoken symbolic interaction to identify our *research* interests and *research* priorities because parts of the message units under consideration by speech-communication scholars are para-linguistic elements of the code. I think research dealing with relationships between linguistic and para-linguistic elements of that code is extremely important. If a statement with "spoken" in it would imply that one could investigate only oral discourse or verbal discourse, then I would be opposed to using the term.

The majority of conferees responding to this point of view indicated that although para-linguistic and related concerns of communication are of interest to speech-communication scholars, these concerns are

not the *central* foci of study. After extensive discussion, most participants agreed that spoken symbolic interaction reflected the central focus of speech-communication (see first section), and that *research* in this area should be concerned principally with the scientific investigation of messages, their antecedents, and their consequences.

Strong disagreement arose over the cruciality of focusing primarily on messages in scientific speech-communication research. Some conferees emphasized that speech-communication research should focus on the way the communicative act binds two or more people together; others argued that the emphasis should be on the interaction of components in speech-communication processes. Most participants agreed that a definition of *speech-communication research* is acceptable which indicates that *people* are involved in *communicative interactions* with the primary research focus on the *linkage* between people in the communicative act. The statement implies that an individual involved in communicative interaction functions as both source and receiver; speech-communication operates typically as a two-way transaction through a "coupling system" which links source and receiver.

The conference participants identified several deficiencies limiting the research efforts of speech-communication scholars. The live recommendations which follow specify these deficiencies and encourage researcher to devote time, energy, and available resources to remedying ' ·.·· The recommendations are those research priorities on which the conferees agreed. However, the conference participants emphasized that the five recommendations are not presented necessarily in order of relative importance.

RECOMMENDATION 28: The conferees encourage speech-communication scholars to undertake a program of formally defining the outlines of speech-communication theories.

This recommendation calls for an elaboration of the basic definition of speech-communication, an identification of relationships among classes of variables that characterize human, symbolic, interactive behavior in communicative transactions. Such variables and their structures of coalescence should define the core of the field. The conference encourages the development of an outline that will coordinate research programs and eventually be replaced by speech-communication theories. Several conferees offered analogous outlines from other disciplines to illustrate this recommendation. One conferee asserted the need for a taxonomy of communication, but most

participants thought that the core should be viewed in a broader perspective.

RECOMMENDATION 29:   The conferees encourage research emphasizing the interactive, on-going, process nature of speech-communication.

Research to date in speech-communication often has oversimplified the multidimensional, real-life communicative process by taking a static view of communicative behaviors. Studies most often have been restricted to the consequences of single messages. Two few studies have focused on interactions, with detailed and specific examination of moment-to-moment, sequential, contingent behavior.

Greater emphasis on intensive analysis of process should lead to: (a) consideration of new and significant research questions regarding such matters as strategies and constraints in message choice; (b) concern with a wider range of communicative environments and their relationships, extending from dyadic communication to small-group deliberations to polarized mass communication: and (c) study of previously unformulated speech functions beyond the traditional informative-persuasive-entertaining trilogy, such as "rapport-establishing" and "territory-claiming."

RECOMMENDATION 30:   The conferees encourage methodological research designed to produce more precise definitions of independent and dependent variables, particularly variables influencing the characters of messages and their effects.

This recommendation is related closely to the first two reported in this section. Consistent with the conference's emphasis on the centrality of messages in the study of speech-communication, it is imperative that more exact means of defining, manipulating and measuring message variables be developed. The value of research on the functions of such qualities as style and organization depends on clear specification of the dimensions of messages. For example, to study effects of anxiety-arousing messages, the speech-communication scholar should be able to specify the anxiety-arousing potentialities of various messages for various receivers more precisely than is possible at present.

Similarly, new methods for identifying and measuring effects of messages should be developed. Improved measures of such variables as gain in information, distortion of content, and attitudinal and behavioral change will allow more accurate interpretation of differential effects produced by messages.

RECOMMENDATION 31: The conferees encourage re-
search relating speech-communication theories to the theories
and research of related areas of study.

This recommendation reflects the conviction that speech-communi-
cation theory and research are parts of the fabric of the social and be-
havioral sciences. Many opportunities exist for collaboration be-
tween speech-communication scholars and scholars from related
areas of study to solve problems where their concerns intersect. Op-
portunities also exist to advance speech-communication theory and
research through amplification and refinement of formulations origi-
nating in other branches of the behavioral sciences and the humani-
ties.

RECOMMENDATION 32: Although the conference par-
ticipants stress the need for basic research, they encourage at-
tempts to extend the generalizations from speech-communica-
tion research to pressing social and intercultural problems.

Most research in speech-communication is relevant to social prob-
lems, whether those problems are in a small group or in the United
Nations. Scholars in the field should exert greater effort to make this
relevance evident.

RESEARCH PRIORITIES
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Recommendations Concerning Graduate Instruction in Speech-Communication

A growing demand has developed in the twentieth centur; to
understand the processes, dimensions and effects of communication.
Man is communicating today more often, in more ways, and under
more complex conditions than ever before in his history. Moreover,

the current technological revolution is contributing to the ever in-
creasing complexity of these processes, to the variety of forms which
they take, and to the variety of uses which they serve. These and
other factors have created a need to expand rapidly our understand-
ing of the communicative processes—particularly those aspects of
these processes concerned with spoken symbolic interaction.

Expanding our knowledge concerning speech-communication ap-
pears to be contingent upon training a sufficient number of competent
scholars to satisfy instructional and research needs. The conferees
acknowledged that the programs needed to train these teachers and
research specialists often transcend departmental lines. The speech-
communication scholar in his instruction and research draws fre-
quently on content and methodologies from various social sciences
and humanities, as well as from some of the physical sciences. These
considerations are recognized in the recommendations which
follow.

The conferees decided to provide recommendations primarily to
improve graduate training programs. This decision was based on the
conviction that changes made at the graduate level would penetrate
other levels of instruction in speech-communication. However, scru-
tiny of graduate training programs did necessitate the consideration
of selected aspects of undergraduate speech-communication pro-
grams. Conferees therefore suggested that attention be devoted to
instructional reform at levels other than graduate education in sub-
sequent conferences.

The conferees expressed some dissatisfaction with current prac-
tices employed in training graduate students in speech-communica-
tion. Several recommendations reflect discontent by some conferees
with rigid requirements associated with traditional Ph.D. programs.
Many more recommendations emphasize displeasure with the cur-
rent undergraduate programs in speech-communication; the narrow
criteria used for selecting graduate students; the inadequate instru-
ments used to select and predict the success of students; the preoccu-
pation to train scholars through traditional classroom experiences;
the limited emphasis on independent study, internships and appren-
ticeships; and an insufficient period for specialization. However, other
conferees indicated that numerous, completely individualized grad-
uate programs already exist in the field. In effect, most participants
attending this conference called for a renewed focus on rigorous
scholarship in the speech-communication field—both in the behav-
ior of practicing scholars and in the training of graduate students.
These concerns are reflected in the recommendations which follow.

Standards for Admission and Recruitment for Graduate Programs
in Speech-Communication

> RECOMMENDATION 33: The conference participants
> recommend that the criteria for admission to graduate pro-
> grams in speech-communication include provisions for students
> who have not, as well as for those who have, completed speci-
> fied undergraduate courses.

Conferees stressed that students with an educational background
and experience in areas of study other than speech-communication
should be encouraged to apply for admission to speech-communica-
tion graduate programs. It was observed that training in selected
cognate fields contributes to their study of speech-communication.
Conferees agreed that among the factors which should be considered
in formulating criteria for admission to speech-communication
graduate programs are the following: a high level of intelligence, in-
tense interest in the problems and issues of speech-communication,
and such other qualities and abilities as may be essential to becoming
a contributing scholar.

> RECOMMENDATION 34: The conferees encourage efforts
> at the local, national and international levels to recruit to the
> field qualified graduate students representing broadly based
> cultural, geographical and racial groupings.

This recommendation was discussed at some length. Several con-
ferees favored the recommendation in theory, but objected to putting
human beings into classes or groups. Slight concern was expressed
that the recommendation might be interpreted to mean that schol-
ars in the field had neglected their responsibility to recruit qualified
graduate students who represented the broad spectrum of groups in
the population. Others contended the conference should meet this
issue "head on" and take a strong position asserting the need to re-
cruit graduate students who represent all groups in the populations
of the United States and other nations. The conferees generally
agreed that a clear statement of commitment to such goals was re-
quired in this day when the dignity of and opportunity for each in-
dividual is foremost in the minds of concerned human beings.
Furthermore, the potential was recognized for unique contributions
in research and teaching by representations of minority groups.

After much discussion, the conferees unanimously approved this
recommendation. The conviction was expressed that implementing
this recommendation should contribute (a) to directing speech-com-
munication research toward problems of representative national and

international groups, (b) to maximizing development and utilization of human resources, and (c) to motivating socially relevant research.

RECOMMENDATION 35: The conferees encourage the development and validation of instruments and procedures for predicting success of students undertaking graduate programs in speech-communication.

Many participants expressed the conviction that previous success measured by grade-point average or achievement tests in highly structured settings may not be among the best predictors of performance in graduate programs in speech-communication. Specifically, the conferees emphasized the value of research efforts designed to predict performance in graduate programs in speech-communication which include more than typically employed academic indicators.

Undergraduate Speech-Communication Programs

RECOMMENDATION 36   The conferees recommend that undergraduate college courses in this area of study be developed and/or modified to include recent research and theory in speech-communication.

This recommendation was approved because the conferees recognized that the undergraduate major in speech-communication should be strengthened through an examination of theories, research methods and research findings now more commonly studied at the graduate level only. Courses such as surveys of communication theory, group dynamics, persuasion, general semantics, interpersonal communication, and development of rhetorical theories were identified as being especially appropriate for undergraduate study.

RECOMMENDATION 37: The conferees encourage the establishment of opportunities for undergraduate students to participate in research, including courses in directed and independent study.

Conference participants expressed strong concern that capable and interested undergraduates who wish to go beyond regular course offerings in individual study or supervised research should be given an opportunity to do so. Moreover, the conferees noted that appropriate course credit for such research activities should be given when possible. This recommendation is similar in intent to Recommendation 20.

Students on many college campuses are expressing a desire to be involved *actively* in decisions regarding the nature, type and quality of their learning experiences. Several participants emphasized that opportunities should be designed in undergraduate instructional programs in speech-communication to meet this expressed need. This and other recommendations which follow were made to recognize the need for students to study viable speech-communication problems confronting society at community, national and international levels. Effectively designed opportunities for undergraduates to engage in research should increase the motivations of students by providing individualized instruction under which students examine problems of genuine interest and conduct research commensurate with their individual learning styles and competencies.

RECOMMENDATION 38: Where colleges or universities have arrangements to allow special or experimental courses in areas of special undergraduate interest, or developing knowledge, the conferees encourage academic units in our field to develop such courses utilizing resources in speech-communication research.

In many colleges and universities, interdepartmental courses are offered that are not included in the regular curriculum. The development of such courses was encouraged because of their potential relevance to the interests of faculty and students concerned with the relationship of speech-communication research to social problems.

RECOMMENDATION 39: To prepare graduate students better and to make undergraduate programs in speech-communication generally more viable, the conferees recommend that undergraduate programs include many of the substantive areas of study that formerly have been identified primarily with graduate work.

Conferees expressed the need to reduce sharp distinctions between instructional programs offered at the undergraduate and graduate levels in speech-communication. Several participants contended that including substantive areas of study in the undergraduate program should improve the quality of students entering graduate programs as well as provide more viable undergraduate programs. Others noted that such an enrichment of the undergraduate curriculum might assist in identifying and developing potentially imaginative and productive scholars early in their educational programs. Conferees also observed that implementing this recommendation

might increase the motivations and competencies of undergraduates
by providing opportunities for individual inquiry.

First Year of Graduate Study

> RECOMMENDATION 40:   The conferees recommend that
> a graduate student in speech-communication be introduced to
> the following areas by the end of his firs' year of graduate
> study: (a) contemporary communication theories and research,
> (b) research methods, (c) philosophy of science, (d) history and
> development of rhetorical theory, and (e) language structure
> and meaning.

This recommendation reflects the conviction that graduate train-
ing in this field should flow through an overview of speech-commu-
nication areas to specialization in research. Conferees recognized
that an undergraduate student might acquire the necessary compe-
tency in one or more of the five areas recommended for exploration
in the first year of graduate study, thereby eliminating the need to
duplicate such study. If the recommendations specified in the pre-
vious section were implemented, one could expect an increased
emphasis on speech-communication theories and research in under-
graduate programs. Conferees urged that students with prior mastery
of any of the objectives specified for the first year of graduate study,
should be given flexibility in developing an advanced course of study
in speech-communication.

The conference participants recognized that the five areas of study
identified in this recommendation probably would be treated within
different course patterns at different institutions. Early in the confer-
ence, several of the small groups discussing graduate education rec-
ommended that a set of objectives should be specified which de-
scribe, in behavioral terms, what students will be expected to do as a
result of completing a particular phase of graduate study. The partic-
ipants in these groups also urged the development of evaluative
measurements to determine when students have achieved the desired
level of mastery of the specified behaviors.

Contemporary Communication Theories and Research. The
conferees used "theories" rather than "theory" intentionally in this
recommendation because they recognized that what is taught under
the rubric "communication theory" may differ from college to
college and from instructor to instructor. The conferees recom-
mended strongly that students be exposed to a wide variety of ap-
proaches to the study of speech-communication (e.g., equilibrium
theory, small-group theory, information theory, social comparison

processes, and contemporary rhetorical theory). Participants also agreed that the relationship of communication theories to rhetorical theories would be appropriate for such study.

The conferees affirmed there is substantial overlap between communication theories and rhetorical theories. There was considerable disagreement among participants regarding whether "rhetoric" or "communication" was the more appropriate "umbrella" term to identify the concepts to be studied, or whether the terms are synonymous.

Participants stressed the need for first year graduate students to acquire a fundamental understanding of contemporary speech-communication research. While a few participants favored listing contemporary speech-communication research as a separate topic of study, most agreed that such research should be explored in connection with the study of contemporary communication theories. Conferees, in their discussion, differentiated between theory and research. The discussion suggested that Kerlinger's definition of *theory* would have been acceptable to most participants: "A theory is a set of interrelated constructs (concepts), definitions, and propositions that presents a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena."[1] Somewhat less agreement was reached regarding what students should do when studying contemporary speech-communication research. Some believed that first year graduate students should read, review, critically evaluate and synthesize findings from experimental literature regarding a specific problem area in speech-communication. Others believed these students should conduct systematic inquiries directed toward resolution or clarification of speech-communication problems in which techniques and methods vary according to the problem being investigated. Most participants agreed that the type of speech-communication research which ought to be the central concern in t'. is area of study is scientific research, regardless of whether the focus of study is on examination of literature, execution of research, or both. Comments indicated that Kerlinger's definition of scientific research would have satisfied most conferees: "Scientific research is systematic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relations among natural phenomena."[2]

Research Methods.   The conferees agreed that graduate students should be introduced to experimental, descriptive and historical-critical research methods during their first year of graduate study, if not earlier. Many conferees shared the view of one observer who contended that the task of speech-communication scholars is "to ar-

rive at the most meaningful isolation of substantive and methodological variables, to discover the patterns which occur and recur among those variables, and to train our students to recognize those patterns." Some conferees observed that an understanding of research methods is necessary in order for students to read, comprehend and evaluate the literature in speech-communication. Others argued that first year graduate students should be required to conduct research under faculty supervision as soon as practicable. While most conferees agreed that students should learn to read, understand and evaluate literature on speech-communication, there was disagreement among conferees regarding whether students should be required to demonstrate research competencies during the first year of graduate training.

Philosophy of Science. Conferees stated that an awareness of scientific methods, accepted procedures for drawing inferences from observations, the importance of theory, and problems of theory construction are necessary to development of a speech-communication scholar.

History and Development of Rhetorical Theory. The conferees suggested that a student should have a basic understanding of the implications of rhetorical theory for speech-communication theories and research. The participants also urged those teaching rhetorical theories to stress the relationships of the development of those theories to other current speech-communication theories.

Language Structure and Meaning. The participants indicated that a student should acquire a basic understanding of the relationships of language structure and meaning to symbolic interac... as a part of the first year of graduate training.

> RECOMMENDATION 41: The conference participants encourage student participation in research and writing at all levels of graduate education in speech-communication.

.vlost conferees emphasized that graduate students should devote part of the time assigned for writing in their regular courses to creating original manuscripts which might be suitable for publication in scholarly journals. Several participants also indicated that graduate students should be required to acquire the skills necessary to write for a wide variety of lay as well as professional readers. One individual phrased the latter concern as follows:

> Graduate students should be encouraged to devote at least a part of the writing they do in their regular courses of study to articles and essays which translate technical knowledge into terms understandable to a layman. and which are addressed to problems of a

practical and significant nature. Such writing should be of a sort that might be publishable in nationally circulated semi-popular magazines and books.

Beyond the First Year of Graduate Study

RECOMMENDATION 42: Conferees recommend that a student's introduction to speech-communication be completed and his competence determined by the end of his first year of graduate study so that he will then be free to specialize in a relatively narrow subdivision of the field for the remainder of his training program.

This recommendation articulates the need to assess a student's level of competence in each of the five areas of study prior to permitting him to begin specialization. The intent of this recommendation is to insure that a student's competencies are at a level which maximizes the probability of success in specialized training.

Several conferees noted, in discussions previously reported, that a necessary condition for developing effective evaluative measures to determine competencies is specifying the terminal behaviors expected as a result of the first year of graduate instruction. While the conferees were unwilling to prescribe the specific types of examinations to be used in evaluating competencies, general agreement was expressed regarding the need to determine that students have the necessary preparation to begin specialization in graduate programs.

RECOMMENDATION 43: The conferees recommend that the empirically-oriented graduate student in speech-communication do intensive study in his specialty and take those courses within and outside his academic unit that are related to his area of specialization.

This recommendation acknowledges the value of a student's development of his graduate program through engaging in both course work and independent study which complement his major area of specialization. The conferees recognized that students should be encouraged to take courses offered by departments other than those typically associated with the speech-communication field. The following departments were cited as examples of those offering courses which might enrich graduate study in speech-communication: psychology, linguistics, sociology, anthropology, history and political science.

The participants considered the possibility of specifying that a student take *only* those courses related to his particular research interest, but most felt such a recommendation would result in defining

"specialization" too narrowly. After some discussion, there was unanimous agreement to accept the recommendation as specified above.

The following examples of specialized graduate programs in speech-communication were offered as typical of those that students might pursue after the first year:

a. A student interested in doing specialized research on small groups might study such topics as small-group processes, social-psychological theory, computer simulation, game theory, cybernetics, social science research methods and research design.

b. A student interested in cross-cultural research might study such topics as cultural anthropology, communication theory, linguistics, proxemics, sociology, area studies in history and political science, geography, social science research methods and research design.

c. A student interested in the communicative problems of the culturally disadvantaged might study such topics as language acquisition, linguistics, urban sociology, semantics, child development, group processes, communication theory, social science research methods and research design.

d. A student interested in experimental public address might study such topics as public opinion, reference groups, personality, learning theory, information theory, persuasion, argumentation, rhetorical theory, public address, and experimental, descriptive and historical-critical research methods.

RECOMMENDATION 44: The conferees encourage academic units to modify graduate programs to include periods of field internship, teaching internship, and/or research apprenticeship.

Implementing this recommendation would provide opportunities for graduate students in speech-communication to apply the theories and research learned in classrooms to concrete situations in community, national and international settings. A student on an internship might be placed in a field situation (e.g., overseas setting, a mental hospital, a ghetto), or a teaching situation where he would have an opportunity to observe, analyze, and evaluate systematically and intensively a particular segment of communicative processes in everyday situations under the guidance of an experienced supervisor. A research apprentice might serve on a research team working on laboratory or field studies under the supervision of an experienced

investigator. A seminar might be offered concurrently at the site to which the apprentices or interns are assigned or at the parent university.

Non-Course Considerations

RECOMMENDATION 45: The conference participants encourage academic units to establish research centers.

The establishment of research centers was proposed (a) to provide colleges and academic units with appropriate facilities for interested speech-communication scholars to meet and work. (b) to consolidate faculty resources to deal more effectively with specific speech-communication problems, and (c) to provide the resources and facilities to train graduate students effectively. Participants suggested that academic units establish research centers which are interdisciplinary in character, at least to the extent of staffing the centers from available faculty and-community personnel. Adequate released-time for research by faculty members, clerical staff, research assistants, supplies and equipment were described as critical to producing significant research and to training graduate students effectively.

Although the organizational structures and operations of the proposed research centers will differ from institution to institution, it was urged that the centers undertake both basic and applied research in speech-communication (e.g., basic research dealing with the nature of communication processes and the acquisition of communication behaviors; applied research on teaching communication and, especially, on "socially relevant" problems). Conference participants urged speech-communication scholars and the research centers with which they are associated to aid in solving the increasingly important communicative problems facing society on local, national and international levels.

RECOMMENDATION 46: The conferees encourage the establishment of institutional arrangements which adapt the research tool requirements to the needs of the individual student and his area of specialization.

This recommendation encourages a broader definition of "research tools" and a greater concern for the needs of individual students in satisfying this requirement for the Ph.D. degree. The value of applying the traditional language requirement universally to speech-communication students was questioned. Conferees recommend that

graduate students' advisors, where possible, substitute training in such areas as statistics, research design, and computer programming for the traditional language requirements.

GRADUATE INSTRUCTION IN SPEECH-COMMUNICATION DRAFTING COMMITTEE

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NOTES

1. Fred N. Kerlinger. *Foundations of Behavioral Research* (New York: Holt. Rinehart and Winston. Incorporated. 1946). p. 11.
2. Kerlinger. p. 13.

PART II

Conference Papers and Responses

CHAPTER THREE

Human Information Processing: Some Research Guidelines

GERALD R. MILLER

To distill the vast body of theoretical and empirical literature dealing with human information processing into a short, reasonably coherent paper is itself no mean task of information processing. Implications for this problem area abound. They are reflected in the work on diffusion of innovations carried out by researchers such as E. Rogers:[1] in the concern for planning and structuring of behavior evinced by G. A. Miller, Galanter, and Pribram:[2] in the substantial literature dealing with selective exposure to and perception of available communications:[3] in several of the theoretical controversies currently plaguing cognitive consistency theorists:[4] and in the interest generated among many communication researchers by recent developments in systems analysis[5]—to mention but a few. Moreover, although distinctions among categories are possible, human information processing is related intimately to questions of decision-making. acquisition of communication behaviors, and behavioral research methodology—each a topic of central concern for this conference.

In short, the number of possible alternative emphases is great. Given this fact, this writer has chosen to approach the discussion of research guidelines for human information processing from a very personal vantage point. Like most conferees, the author has a strong commitment to and interest in behavioral research in communication. However, there is convincing evidence that speech-communication research efforts are not yielding maximal scientific and social returns, that there is, in a sense, a spinning of intellectual wheels. While the causes for this lack of progress are numerous, one major in-

hibiting factor seems to be a body of conventional wisdom which guides much research behavior: a set of deeply rooted but questionable assumptions and practices pertaining to the conduct of scientific inquiry in behavioral enterprises such as speech. An examination of several of these potentially mistaken assumptions and practices will be made here and some alternative courses of action that might result in richer research returns will be suggested. In the context of discussing these assumptions and practices, some specific research questions believed to be of import to the general problem of human information processing will be mentioned. First, however, it is necessary to establish a general frame of reference by stipulating a broad working definition for the term *information*.

A Working Definition of Information

In a broad sense, two types or categories of information can be distinguished. The first type (*Information 1*) consists of all the external stimuli to which an individual is exposed at any given moment. Each of these environmental stimuli can be thought of as representing a unit of information potential. (The term *unit* is used rather than *bit* to avoid confusion with the terminology of information theory.[6]) From the total set of available stimuli, the individual selects certain units of information and remains unaware of others. Why some units of information gain perceptual priority over others is a complex question that has long intrigued behavioral researchers. This question embraces a number of perennial issues of learning and perception. In addition, this orientation implies that such input selectivity represents a broad problem of human information processing: it relates to the ways that persons sift through the "blooming, buzzing confusion" which surrounds them in order to impose structural harmony on their worlds. An individual's environment is saturated by Information 1—in fact, one could say that environment *is* Information 1. How one comes to terms with that environment is an information processing question.

If the only information available to the individual consisted of external environmental stimuli and if these stimuli elicited lawfully governed instinctive or reflexive responses, the development of scientific generalizations about communication-related behaviors would be a relatively easy task. Such generalizations are possible for simple, primitive behaviors. The information provided by a tap of the patellar tendon or a puff of air on the eyeball is usually sufficient to produce a knee jerk or an eyeblink response. However, most of our environmental transactions are considerably more complicated. Moreover, prior sets of experiences with the environment are brought to each of

these transactions. In behavioral terms, each individual has an available response repertory which not only helps fix the possible response alternatives, but also the probability of each of these alternatives occurring under particular environmental circumstances. This internal storehouse of knowledge and prior learning experiences is the second type of available information (*Information 2*). In numerous complicated ways, both the available store of Information 2 and the way in which it is processed influence responses to external stimulation; in a sense, Information 2 determines the meaning one assigns to the situation.

The distinction suggested here is neither new nor revolutionary. It has been customary for behavioral researchers to separate into "camps" on the basis of relative amounts of emphasis placed on each type of information. In psychology, those who have stressed the importance of Information 1 have been labeled *learning theorists*, while those who have opted for the primacy of Information 2 have gained the title *perceptual theorists*. More metaphorically, George Kelly has labeled the Information 1 group *pull theorists* and Information 2 supporters *push theorists*.[7] Arguments between members of the two camps make for interesting and exciting rhetoric. Witness, for example, the ongoing dispute concerning approaches to language behavior waged between Skinner and his followers (definitely an Information 1 group) and Chomsky and his adherents (prototypes of the Information 2 group).

A slavish commitment to either viewpoint by behavioral researchers in communication is detrimental to the advancement of scientific understanding. In fact, in human information processing, one's primary research efforts in communication should be directed at questions involving interactional relationships between Information 1 and Information 2. *Most scientifically useful generalizations concerning human information processing will have to take account of both the environmental stimuli available to the individual (Information 1) and the background of experiences that he brings with him to the situation (Information 2).* The grounds for this statement will become clearer as several of the potentially mistaken assumptions and practices guiding much present research activity are examined, and some specific programmatic research thrusts in the area of human information processing are suggested.[8]

Environmental-Phenomenal Schizophrenia

Perhaps in practice the person best equipped to disprove a dissonance hypothesis is one who has been successful in supporting it. When such a person designs a test, he is more likely to do so in a

sensitive and adequate way and is thus in a position to produce and
to recognize disconfirming evidence when it appears."

This curiously naive, essentially unscientific assertion, put for-
ward by one of the more prolific protagonists of dissonance theory,
reflects one of the confused, mistaken practices common to much con-
temporary behavioral research: a state of affairs called in this paper
environmental-phenomenal schizophrenia. The problem results
from a kind of dissonance experienced by the researcher himself
—a conflict between scientific cognitions. On the one hand, the im-
portance of operationally manipulating variables by systematically
varying the environmental stimuli (Information 1) to which subjects
are exposed is continuously emphasized. But on the other hand, it is
obvious that the scientific viability of intervening constructs such as
dissonance, anxiety, attitude, or *credibility* depends upon at least a
modicum of understanding of the phenomenal states of the individ-
uals involved; in the context of this discussion, theoretic use of such
constructs rests upon the assessment of available Information 2. Al-
though there is no inherent inconsistency between the environmental
and phenomenal perspectives, confused mixtures of the two types of
information, or total disregard for one of them, breeds the intel-
lectual schizophrenia with which this paper is concerned presently.

Consider, for instance, the broad issue of the arousal of cognitive
inconsistency. First, consistency theory formulations are capable of
stimulating numerous fruitful problems for communication research-
ers. Moreover, inconsistency arousal is inextricably bound to human
information processing; it is linked not only with available Informa-
tion 1, but also with the availability and processing of Information 2.
Unfortunately, the importance of this latter type of information has
been largely ignored in the formulation of research problems; rather,
attempts to induce inconsistency arousal have been couched almost
entirely in terms of manipulation of the available supply of Informa-
tion 1. The inevitable consequences of this oversight have been ram-
pant confusion and a voluminous output of unscientific, *post hoc* spec-
ulation about the meaning an individual attaches to Information 1
inputs. Brehm's earlier assertion represents an outgrowth of this in-
tellectual disorder.

Such disorder can be illustrated by considering one facet of a gen-
eral issue of interest to communication researchers—the issue of
establishing optimal conditions for self-persuasion. Dissonance theo-
rists maintain that self-persuasion will follow public advocacy of a
counter-attitudinal position. Furthermore, magnitude of self-persua-
sion is hypothesized to be negatively related to the amount of justi-
fication provided for engaging in counter-attitudinal behavior: the

less the justification, the greater the magnitude of self-persuasion. Several studies by dissonance theorists purport to support this hypothesized negative relationship between justification and self-persuasion.[10]

Conversely, incentive theorists challenge the relationship between justification and self-persuasion posited by the dissonance group. While these incentive theorists agree that self-persuasion is a consequence of public advocacy of a counter-attitudinal position, they maintain that the relationship between justification and self-persuasion is positive: the greater the justification, the greater the magnitude of self-persuasion. Like the dissonance theorists, the advocates of incentive theory point to several studies which purportedly support their position.[11] In addition, both dissonance and incentive theorists devote considerable energy to challenging the interpretations of the other group's findings.

It is this challenging process which underscores the environmental-phenomenal schizophrenia central to these remarks. In almost all cases, magnitude of justification has been manipulated entirely in terms of the kinds of Information 1 available to the subject. Thus, under conditions of minimal justification, the subject is told that he will receive one dollar for advocating a counter-attitudinal position; while under conditions of maximal justification, he is told that he will receive twenty dollars. *In no instance has there been any a priori attempt to assess the storehouse of Information 2 that the subject brings to the situation; i.e., to determine the meanings that subjects assign to these varying amounts of money.*

This failure to arrive at pre-experimental assessments of subjects' phenomenal states has opened a Pandora's Box of *post hoc* interpretive problems. Dissonance theorists argue that one dollar is a substandard wage for an hour's work by a college student, while incentive theorists hold that it is about the amount subjects would expect.[12] For the dissonance theorist, twenty dollars is liberal payment for an hour of counter-attitudinal advocacy; for the incentive theorist, it is a flagrant bribe that renders the experimenter's motives suspect. While space does not permit a thorough description of this exercise in interpretive "can you top this," its environmental-phenomenal schizophrenic flavor is captured in the recent debate of Aronson and Rosenberg on the psychology of insufficient justification.[13] Never once in this debate is the inherent confusion between Information 1 and Information 2 acknowledged; never once do the writers suggest the relatively straightforward expedient of determining in advance the subjects' meanings for the monetary climate of the experiment. Instead, after manipulating justification entirely

on the basis of Information 1, both dissonance and incentive theorists seem bent primarily upon imposing their meanings for the situation upon all of the subjects, upon equating their own funds of Information 2 with those of undergraduate students.

The preceding criticisms suggest that speech researchers interested in the application of consistency theories, such as dissonance theory, to the investigation of communication problems, can make substantial contributions by attending closely to interactions between Information 1 and Information 2. More specifically, there should be greater concern with the thorny issue of when an individual experiences cognitive inconsistency. In order to deal with this issue, means for determining the available fund of Information 2 must be developed, and generalizations concerning ways in which differences in Information 2 affect the processing of Information 1 must be sought. At a trivial level, a subject possessing a fund of Information 2 acquired within a low socio-economic context will obviously process information about hourly wage scales differently than a subject of affluent means. By the same token, the Information 1 available in a particular communication may interact with the Information 2 available to a particular message recipient in a manner calculated to produce a great deal of cognitive inconsistency. For a second recipient, an identical input of Information 1 may result in minimal inconsistency. Until the measurement of relevant Information 2 parameters is refined, there will be no reliable means for predicting such differences.

There are other areas in which a greater concern for the interaction between Information 1 and Information 2 would pay scientific dividends. For instance, numerous researchers have studied the effects of anxiety-arousing message appeals upon recipients' attitude change or behavioral conformity to message recommendations. While these studies have contributed some interesting and useful insights, knowledge about the persuasive efficacy of anxiety, or fear-arousal is still exceedingly fragmentary. One reason for this limitation can be found in the fact that almost any unit of Information 1 is potentially capable of eliciting anxiety on the part of a particular message recipient, given a certain pattern of prior learning experience (Information 2). Thus, as was indicated in a previous paper, a statement detailing the statistical relationships between heavy smoking and various illnesses may elicit more anxiety on the part of the readers of this paper than would a vividly colored picture of cancerous lung tissue.[14] Again, as in the case of inconsistency arousal, the available fund of Information 2 will influence the pro-

cessing of Information 1 inputs. As a result, one man's anxiety may be another's indifference.

What is needed, then, is research aimed at determining the various classes of stimuli which individuals perceive to be anxiety-arousing. In this regard, the recent exploratory Q and r analyses conducted by Hewgill offer a promising beginning.[15] To the extent that members of our society share some common core of learning experiences—i.e., to the extent that some dimensions of Information 2 are relatively consistent across individuals—it may be possible to identify some Information 1 inputs that have a relatively "universal" potential for anxiety-arousal. Conversely, the isolation of various idiosyncratic response patterns may enable researchers to specify with greater precision the types of environmental stimuli with which they are dealing; even more importantly, it may allow them to specify with greater precision the types of people who are responding to these stimuli. Until speech-communication researchers are able to meld together these relevant environmental and phenomenal information processing factors, comprehensive understanding of the effects of anxiety-arousing message appeals—or for that matter, understanding of the effects of a host of other such language variables—will continue to elude them.[16]

This discussion of environmental-phenomenal schizophrenia will conclude with a few observations about the general problem area of source credibility. From time to time, this writer has conducted informal surveys among his colleagues, in order to determine the areas in which they feel real research advances are occurring. Most frequently, the area of credibility is specified as an example of progress. Their remarks suggest that while other research thrusts may sputter or die, the understanding of the role of sources credibility in communication continues to expand.

Unfortunately, this writer does not share the optimism of many of his colleagues. Granted, there is a voluminous literature dealing with the credibility problem; however, the number of useful scientific generalizations that can be culled from that literature is exceedingly limited. Acquaintance with the research suggests only two generalizations about credibility which one can make with much confidence: First, if a communicator has a lot of it, he is somewhat better off than if he has a little of it; second given the operational procedures typically used in factor analytic research, credibility appears to be a multi-dimensional construct.[17] In spite of all the hustle and bustle of research activity, these generalizations reflect little knowledge about credibility.

One reason for this paucity of knowledge can be found in the relative lack of attention paid to the role of Information 2 in shaping perceptions of credibility. While we would all admit that, to paraphrase an old cliché, credibility is in the eye of the receiver, typical research procedures approach the problem almost entirely in terms of differences in Information 1 inputs. For example, using one of my own research efforts as a whipping boy, if the message deals with the harmful physical effects of radioactive fallout, an attempt is made to induce perceptions of relatively high credibility by attributing the communication to a nuclear physicist who is a nationally recognized authority on the biological effects of radioactivity.[18] Conversely, in the low credibility condition, the message is attributed to a high school sophomore who has prepared it to fulfill a social studies assignment.

While it is not suggested that this approach is without value, it should be emphasized that the approach represents a gross oversimplification of the kinds of information processing that occur when one evaluates a communicator's credibility. Hovland and Sherif have posited anchoring points for the judgment of social attitudes.[19] In a similar vein, it is likely that message recipients have anchoring points for evaluating the credibility of a message source: *anchoring points that are determined by the Information 2 that they bring with them to the situation.* In addition to the question: What are the objective qualifications of this source for this topic? (the Information 1 question), it is probable that such Information 2 questions as the following play a vital role in shaping perceptions of credibility: (1) What are my own qualifications in regard to this topic (the self-credibility question)? (2) What are the qualifications of the best source I can think of on this topic (the ideal source question)? (3) How important is this topic to me (the ego-involvement question)?

Consider a very personal example. The reader of this paper is making judgments about the writer's credibility in relation to the general problem of research directions in human information processing. Is his sole concern the writer's objective credentials for discussing this topic? It is doubtful. In addition, the reader is probably considering such questions as these: Could I suggest more fruitful approaches to research in information processing? How does Miller compare with potential sources X, Y, and Z—sources who would be eminently qualified to discuss this topic? Just how important is communication research dealing with human information processing? The answers to these questions—answers dictated by the fund of Information 2 at the reader's disposal—will influence his judgment of the writer's credibility and will determine the behavioral impact of the message.

Future research on credibility should aim at developing measures of these added dimensions of information and at constructing predictive models which make use of Information 2 parameters similar to those mentioned above. Obviously, as new parameters are added, the task becomes more complex: it is considerably easier to structure Information 1 manipulations while trusting to randomization to eliminate the effects of the relevant Information 2 factors. But if the goal is more comprehensive understanding of the complex process by which individuals sort and evaluate information in order to arrive at judgments of credibility, the dimensions of the meanings those individuals assigned to the situation must be probed.

In addition, persons are likely to differ in the importance they assign to Information 1 inputs concerning a source, or in the typical ways in which they process such information. Rokeach has suggested a number of intriguing distinctions between the source evaluation behaviors of Open- and Closed-Minded individuals.[20] Fiedler has demonstrated that people vary in the similarity with which they view opposites, that while some persons perceive their best friends and worst enemies as quite different, others see them as strikingly similar.[21] It seems possible that these same perceptual differences may apply to communication sources, that some message recipients may make sharp distinctions between high and low credible sources, while others may not. All of these individual difference problems, each involving questions of storage and processing of Information 2, provide opportunities for fruitful research programs in the problem area of credibility.

Bergmann has defined *scientific laws* as "statements that describe the way a specified object will behave in a specified environment."[22] Throughout this section on environmental-phenomenal schizophrenia, the necessity of distinguishing clearly between the environment (Information 1) and the object (Information 2) has been stressed. In addition, it has been emphasized that research problems dealing with human information processing must take account of the interactions between Information 1 and Information 2. Finally, relatively speaking, researchers have neglected the difficult task of specifying relevant parameters of the object: they have slighted the Information 2 dimension. Future communication research dealing with human information processing should aim at alleviating this shortcoming.

The Experimental Hangup

We may have to go back and do much more naturalistic observation, make more of an attempt to understand people, behavior, and the dynamics of things.

> Then, perhaps someday, out of that might grow a real psychological
> science, not an imitation of physics, a human science that should
> have as its appropriate subject, man.[23]

Like many other behavioral scientists, speech researchers are victims of an experimental "hangup." Manifestations of this hangup are easily identified. It is no accident that when departments of speech wish to add a behavioral researcher to their ranks, they frequently send out inquiries about the availability of an *experimental-ist*. Course catalogs provide numerous listings of offerings such as "*Experimental* Studies in Rhetoric and Public Address," or "*Ex-perimental* Studies in Speech." Perusal of the major professional journals reveals that the majority of scientific studies employ an *ex-perimental* approach; i.e., the researcher manipulates some independent variable, or variables, and then checks the effect of this manipulation on some dependent variable. A layman might well imagine that the whole of science is captured in the magical term, *experiment*.

This writer counts himself a victim of the experimental muse: despite my own reliance on experimentation, I am increasingly skeptical about the scientific payoffs presently resulting from this approach. This is not to question the value of experimentation. Given the proper circumstances, it is a powerful tool for acquiring scientific understanding. But the zealous commitment to experimentation (in Carl Rogers' pointed, yet defensible language, our attempts to copy certain of the physical sciences) carries with it a set of intellectual blinders that severely restricts one's scientific world view. In a recent discourse on psychological inves'igation, Bakan pinpointed the reasons for such fears.

> ... Though enormous resources are being expended for psycholog-
> ical research, the yield of new and significant information concern-
> ing the nature of the human psyche is relatively small in compari-
> son....
>
> Brentano (1874), at the time of the founding of modern experi-
> mental psychology, argued that psychology should be empirical
> rather than experimental: that the experiment was too far re-
> moved from experience to tell us much that was significant.... It
> is perhaps worthwhile to allow the possibility that the experimental
> may *sometimes* stand in the way of the empirical. The essential
> feature of any empirical epistemology is that it relies heavily on the
> contributions from experience....
>
> Mos: experimentation in the field of psychology falls consider-
> ably short of being able to be considered really empirical. Consider
> the ideal of the "well-designed experiment." *The usual meaning of
> "well-designed" is that the outcomes of the experiment have been
> completely anticipated, and that one will not allow the experience*

*of conducting the experiment to lead one to consider alternatives
outside of the ones already thought of beforehand.* [Italics mine.][24]

Bakan's remarks are equally relevant to most experimental re-
search in speech. The more humanistically-oriented researchers
sometimes accuse their scientific colleagues of devoting considerable
time and energy to verifying trivial propositions. While there are
ready retorts to this accusation, it is a rare individual who, at one
time or another, has not admitted that this charge comes dangerously
close to the mark. This concern with trivia stems partially from a de-
sire to predict correctly the outcomes of experiments. *For since so
little is known about the complex behaviors being studied, accurate
prediction depends upon selecting rather simple, self-evident notions
to begin with.*[25] To use a frame of reference appropriate to this paper,
Shannon and Weaver observe that an information gain represents
the difference between initial and final ignorance.[26] Often, experi-
ments in communication are carried out in ways designed to mini-
mize this difference.

Some readers may feel that this paper has wandered into an area
more properly reserved for the methodology paper. However, the
preceding remarks are germane to the problem of human informa-
tion processing. Little is known about the complex process through
which people select, interpret, and respond to information. Even
less is known about the kinds of questions and problems that motivate
individuals to seek out information. As Menzel observed at the Wing-
spread Conference:

> Little is known to date about what may be called the culture of in-
> formation seeking. We may assume that individuals regard some of
> the needs for information or counsel that come up in their daily
> lives as matters for expert advice, others as matters of general wise
> decision making, and still others as matters of taste; we may also as-
> sume that individuals have different tendencies to seek counsel from
> authoritative experts, from general or specialized opinion leaders,
> from technical literature, and so on.[27]

Problems such as those mentioned by Menzel seem to call for more
naturalistic observation (i.e., empirical research) and less experi-
mentation. Researchers should make use of group situations in order
to observe information dissemination and information seeking pat-
terns. At a more global level, certain notions of systems analysis
could be applied to the study of oral inputs and outputs in formal or-
ganizational settings. Perhaps intensive case studies of the informa-
tion processing behaviors of one or two persons would provide in-
sights concerning the many choices and interpretive decisions faced
by persons in their daily activities.

In particular, greater emphasis should be placed on the role of information processing in fostering conflict resolution and engendering personal growth. Behavioral researchers have demonstrated a consistent preoccupation with the influence process; they have trained their scientific guns on that aspect of speech which has as its goal the induction of compliant behavior. While influence is an integral aspect of human existence, human beings also communicate for other important reasons. How do individuals utilize information to resolve intrapersonal and interpersonal conflict? More specifically, how do good and poor empathizers differ in the ways they perceive and process Information I? What kinds of Information I inputs lead to perceptions of interpersonal trust, and which ones result in suspicion and hostility? How do such factors as psychological stress and personal disorientation influence both the decoding and encoding of Information I? What kinds of Information I inputs facilitate personal growth and permit individual self-actualization? The list of potential research questions is almost endless.

The interrogative form has been used deliberately in phrasing these problems, for it is believed that over-reliance upon experimental research (with its inevitable hypotheses, or anticipation statements) as a means of dealing with these problems would be premature. From naturalistic observation researchers may develop the raw materials necessary for useful experimentation. However, for the time being, it would be useful if at least some speech researchers could escape the experimental hangup. The experience of observing human information processing at work in natural settings could be both personally exciting and scientifically beneficial. Scientific vistas in speech-communication are in need of broadening.

Dependent Variable Myopia

In recent years, scholars of communication have turned more and more of their attention to the audience. In my opinion, this is a fortunate development. Less fortunate, however, has been the fact that the bulk of this attention has been given to only one class of audience behaviors – that class which is considered to be indicative of the construct "attitude."[28]

Perhaps the concern for attitude measurement and research evidenced by communication researchers is a natural outgrowth of their earlier mentioned preoccupation with the influence process. Perhaps, as Becker suggests, it results from the simplicity with which attitude measures can be obtained, as a manifestation of Abraham Kaplan's "law of the instrument." (If a small boy has a hammer,

everything encountered needs pounding.) Or perhaps it results from a belief that there is a certain theoretical elegance about studying a construct such as *attitude*.[29] Whatever the causes, most readers will agree that the attitude variable has received the lion's share of attention.

In terms of antecedent conditions relevant to human information processing, prior attitudes are only one of several mediating processes (to use the language of this paper, only one dimension of the available fund of Information 2) that influence the ways in which Information 1 inputs are processed. In addition, in terms of behavioral consequences of information processing, attitude change is only one of numerous outcomes that may occur. Thus, although a suggestion to abandon research on the attitude variable is not offered, it is proposed that attitude research be placed in its proper perspective as only one of many important dimensions of human information processing. One direction for future research lies in the development of methods for measuring and for studying some of these other important dimensions. Several dimensions that are particularly intriguing should be mentioned.

First, there is a need to develop methods for measuring and studying the interpretation of information. Translated into the terminology of this paper, the selective perception hypothesis says the following: Differences in the available supply of Information 2 will influence the ways in which Information 1 inputs are interpreted. Terms such as *message distortion, repression, psychological witi. .awal, assimilation,* and *contrast* reflect the belief that there are vast differences in the interpretative behaviors of message recipients.

But how are these differences to be indexed? There is no indication that giant strides have been made in dealing with this measurement question. To be sure, several gross methods are available for determining if groups with va:.:ing funds of Information 2 differ in their interpretations of Information 1 inputs. Thus, it is known that relatively prejudiced individuals interpret cartoons lampooning bigotry differently than unprejudiced persons,[30] that people's initial attitudes will influence their judgments of the position advocated by the source of an incoming communication,[31] and that amount of ego-involvement in the issue will affect the latitudes of acceptance and rejection of a persuasive message.[32] These findings illustrate that people *do* interpret differently. But the question of just *how* these interpretations differ must be considered. In order to do so, it is probably necessary to deal with Information 1 units at a microscopic level. Measurement of responses to these smaller units of discourse is no mean task, but it appears to be a prerequisite for understanding

the ways in which people process information. While no easy solution can be offered, several research avenues are potentially promising. It might be useful to employ physiological response measures in conjunction with the presentation of message elements. Also, as was suggested earlier, intensive introspective exercises with several persons might yield more insights about message interpretation than brief encounters with large groups of subjects. Finally, researchers must continue searching for more useful categories for describing and classifying Information 1 inputs. More will be said about this later.

A second fruitful area of inquiry relates to the measurement of *information gain*. There is always hope that certain combinations of Information 1 inputs will lead to changes in the cognitive states of message recipients, that effective communication will expand the available fund of Information 2. Multiple-choice tests over message content are not satisfying as a method for indexing such information gain. Again, the units of analysis are too molar, and the paper-and-pencil behaviors that are used represent but a single, narrow class of responses. Perhaps information gain can be assessed in terms of the ability to perform other physical behaviors (after all, one does not index the information gain of a child receiving a message on how to tie a shoelace by measuring the child's ability to respond correctly to multiple-choice questions, but rather by observing the child's facility in shoelace-tying behavior); or perhaps, as in the case of interpretation of information, researchers can best deal with information gain by focusing on smaller units of discourse. At any rate, some effort must be devoted to developing better measures of this variable.

Finally, as indicated earlier, it is imperative that more precise methods for measuring and classifying units of Information 1 be devised. The communication researcher can make significant contributions to understanding the role of message variables in the communication transaction: in fact, a strong argument can be made for the position that primary concern with the message is the best means for distinguishing the intellectual focus of the speech researcher from that of his social psychological counterpart. As yet, these contributions have not been forthcoming: *This lack of intellectual movement is directly attributable to ignorance about the Information 1 units which are of concern.* While some interesting and useful research on language and structure variables has been conducted,[33] most message variable research, including several of my own studies, leaves numerous unanswered questions about the kinds of Information 1 inputs to which subjects were exposed. Until ways are found to meas-

ure and specify these inputs, research in such areas as message sidedness, primacy-recency, and language intensity will continue to pose interpretive puzzles.

In summary, a more comprehensive understanding of the role of human information processing in the communication process awaits the development of new methods for classifying and measuring relevant parameters of both Information 1 and Information 2. While it is more comfortable to cling to the old approaches, innovation precedes scientific advancement: myopic vision impedes intellectual progress.

Some Implications for Graduate Programs in Speech

Throughout this paper, it has been emphasized that much research activity on human information processing is guided by potentially mistaken assumptions and practices. If this viewpoint is correct, it implies that a creative revision of most graduate programs which seek to train behavioral communication researchers must be undertaken. The linguists and the general semanticists, among others, have underscored the extent to which language habits influence daily thinking and typical scholarly behavior. In this vein, one may question how many researchers are occupied with the task of fashioning carbon copies of themselves? How much innovative behavior do they encourage in their students? To what extent do their own ingrained methodological and theoretic biases serve to define the field of behavioral communication research? These are hard questions to approach objectively, but if speech-communication scholars are to provide the best in graduate training, they must come to grips with such queries.

The broad range of problems touched upon in this paper also illustrates that even minimal intellectual preparation for the practicing role of behavioral scientist is an awesome task. Complete attention must be directed to this task. In order to give it the deserved emphasis, other things will have to be set aside. The time has passed

if in fact it ever existed—when two or three courses in statistics and research methodology are adequate to produce a competent behavioral research scholar. Tomorrow's graduates cannot be all intellectual things to all men, and while there is nothing wrong with studying such subjects as oral interpretation or British public address, there are other training grounds of greater import to the fledgling behavioral researcher. Although the field of speech should encourage the pursuit of many lines of scholarly inquiry, speech-communication scholars should not seek to expose their graduate students to a smattering of each, but rather to make them competent

craftsmen of one approach. This conviction is stated in a brutally straightforward way, because many researchers have been loath to say it in the past.

In conclusion, a note of optimism is in order. Although much of our scholarly activity in the area of human information processing has been criticized, there are a number of encouraging omens for the future. The New Orleans conference itself represents a step forward, as does the attempt to develop a new category system for classifying research activity. Graduate students in speech-communication, at least the ones with whom this writer is acquainted, are intellectually curious and eager to expand the frontiers of behavioral knowledge in speech. The number of competent behavioral researchers who are members of speech and communication faculties is steadily increasing. The next decade or two should produce considerable excitement, and at the end of that time, some real inroads will have been made on the problems of human information processing that are mentioned in this paper.

NOTES

1. E. M. Rogers. *Diffusion of Innovations* (New York: The Free Press of Glencoe. 1962).
2. G. A. Miller. E. Galanter. and K. Pribram. *Plans and the Structure of Behavior* (New York: Henry Holt and Company. 1960).
3. J. Freedman and D. Sears. "Selective Exposure." in *Advances in Experimental Social Psychology*." ed. L. Berkowitz (New York: Academic Press. 1965). II. 57-97.
4. S. Feldman. ed. *Cognitive Consistency* (New York: Academic Press. 1966).
5. J. Miller. "Living Systems." *Behavioral Science*. X (July 1965). 193-237: and J. Miller. "Living Systems." *Behavioral Science*. X (October 1965). 337-411.
6. Also. there is no intention to imply that the same value can be assigned to each unit. The problem of measuring information is itself a significant problem. one that will be mentioned briefly later in this paper.
7. G. Kelly. *Psychology of Personal Constructs*. 2 vols. (New York: W. W. Norton and Company, 1955).
8. The inclusion of the term *programmatic* points to another general weakness of much contemporary research. More research programs are needed. i.e.. research that focuses intensively on a problem area over a series of studies. There are too many "one-shot" thrusts into a variety of problems. with little attempt to follow up these thrusts with concentrated research.
9. J. Brehm. "Comment on 'Counter-Norm Attitudes Induced by Consonant Versus Dissonant Conditions of Role-Playing.'" *Journal of Experimental Research in Personality*. I (March 1965). 64.
10. L. Festinger and M. Carlsmith. "Cognitive Consequences of Forced-Compliance." *Journal of Abnormal and Social Psychology*. LVII (March 1959). 203-210: J. Brehm and A. Cohen. *Explorations in Cognitive Dissonance* (New York: John Wiley and Sons. 1962).
11. I. Janis and J. Gilmore. "The Influence of Incentive Conditions on the Success of Role Playing in Modifying Attitudes." *Journal of Personality and Social*

Psychology. 1 (January 1965). 17-27: A. Elms and I. Janis. "Counter-Norm Attitudes Induced by Consonant Versus Dissonant Conditions of Role-Playing." *Journal of Experimental Research in Personality*. 1 (March 1965). 50-60.

12. Another example of the lack of attention paid to *Information 2* is reflected by the label. *insufficient justification*. which has heen attached to this problem. Obviously. from a phenomenological standpoint. if justification is insufficient. the individuals will not perform the counter-attitudinal behaviors.

13. E. Aronson. "The Psychology of Insufficient Justification: An Analysis of Some Conflicting Data." and M. J. Rosenberg. "Some Limits of Dissonance: Toward a Differentiated View of Counter-Attitudinal Performance." in S. Feldman. pp. 109-170.

14. G. R. Miller. "Studies on the Use of Fear Appeals." *Central States Speech Journal*. XIV (May 1963). 117-124.

15. G. R. Miller and M. Hewgill. "Some Recent Research on Fear-Arousing Message Appeals." *Speech Monographs*. XXXIII (November 1966). 377-391.

16. The methodological expedient of *post hoc* subject reports is not considered a sufficient attempt to come to grips with the *Information 2* dimension. First. validity of many such measures is doubted. Second. in cases where the report is inconsistent with the induction. there are no means for assessing the reasons for this inconsistency.

17. The "operational procedures" hec·e stems from the fact that there is little convincing evidence indicating that these dimensions will hold up in a communication situation. Researchers need to determine whether. in fact. they will.

18. G. R. Miller and M. Hewgill. p. 382.

19. C. Hovland and M. Sherif. *Social Judgment* (New Haven: Yale University Press. 1957).

20. M. Rokeach. *The Oj en and Closed Mind* (New York: Basic Books. 1960).

21. F. Fiedler. "The Leader's Psychological Distance and Group Effectiveness." in *Group Dynamics*. eds. D. Cartwright and A. Zander (Evanston. Ill.: Row. Peterson and Company. 1960). pp. 586-606.

22. G. Bergmann. *Philosophy of Science* (Madison. Wisconsin: University of Wisconsin Press. 1958).

23. C. Rogers. "A Conversation with Carl Rogers." *Psychology Today*. 1 (December 1967). 21.

24. Reprinted from D. Bakan, *On Method: Toward a Reconstruction of Psychological investigation* (San Francisco: Jossey-Bass. Incorporated. Publishers. 1967). pp. xii-xiii. by permission of Jossey-Bass. Incorporated. Publishers and David Bakan

25 The self-evident quality of most research is attested to by the great excitement that accompanies the development of hypotheses that violate common-sense predictions. The proponents of dissonance theory often point with pride to the unusual outcomes predicted by dissonance theory. While there is a certain cleverness about such derivations. this writer is not at all sure that this "Eureka. I've fooled you!" approach has much lasting scientific value.

26. C. Shannon and W. Weaver. *The Mathematical Theory of Communication* (Urbana. Ill.: University of Illinois Press. 1949).

27. H. Menzel. "Communication Through Institutions and Social Structures." Paper prepared for the Speech Association of America's Wingspread Colloquium. October. 1967. pp. 16-17.

28. S. Becker. "New Approaches to Audience Analysis." Paper presented at University of Wisconsin. November. 1967. p. 1.

29. Becker. p. 1.
30. E. Cooper and M. Jahoda. "The Evasion of Propaganda: How Prejudiced People Respond to Anti-Prejudice Propaganda." *Journal of Psychology*. XXIII (January 1947). 15-25.
31. M. Manis. "The Interpretation of Opinion Statements as a Function of Recipient Attitude." *Journal of Abnormal and Social Psychology*. LX (May 1960). 340-345.
32. C. Sherif, M. Sherif and R. Nebergall. *Attitude and Attitude Change* (Philadelphia: W. B. Saunders Company, 1965).
33. J. W. Bowers, "Language Intensity, Social Introversion. and Attitude Change." *Speech Monographs*. XXX (November 1963). 345-352; see the unpublished thesis (Michigan State University. 1960) by D. Darnell. "The Relation between Sentence Order and the Comprehension of Written English."

A Response to Gerald R. Miller's "Human Information Processing: Some Research Guidelines"

FRANK E. X. DANCE

In the early part of the paper, "Human Information Processing: Some Research Guidelines," the author illustrates the immense challenge to which he has been called in preparing the essay. This call is heard gratefully since it sheds reflected (if somewhat dimmed) luminescence on those chosen to respond to these undertakings. In addition, Miller's point allows the early introduction of a quotation from a favorite scholar. In a recent essay, "On Humility in Science," W. Horsley Gantt quotes Ivan Petrovich Pavlov: "Be not overcome by vanity. On account of vanity you will be stubborn where it is necessary to be conciliatory; you will reject useful advice and friendly assistance; you will lose your sense of objectivity."[1]

Miller's endeavors to highlight methodological confusions and weaknesses are most valuable to speech-communication scholars. Many researchers, as the result of their undergraduate and graduate training, feel the need for constant assistance and instruction in the area of methodology. Although those who are methodological amateurs may be a minority within this conference, within the speech field as a whole, they are probably closer to the norm. Thus, Miller's efforts in his essay to introduce rigor and clarity into the methodological thought and action processes of speech-communication research is needed and most welcome.

There are, however, a number of problems raised in the essay to which attention should be directed. Since the title of Miller's essay suggests that research guidelines are related to the conceptual structure of human information processing, it is unfortunate that more often than not, rather than being *enlightened intellectually*

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by the conceptual treatment provided in the essay's first few pages, one tends to be *confused conceptually*.

There does not seem to be any useful purpose served by introducing two new terms into the existing taxonomic confusion concerning the identification of "information." This is especially true when one considers that a relatively precise definition of information derived from the work of the statistical information theorists is available. The entire thrust of the definition of information as related to entropy and as embodied in the formula $I = -\log_2$ (probability at the receiver of the event before the message is sent), suggests that neither Miller's *Information 1* nor his *Information 2* has the characteristics necessary to be labeled information at all, much less "human" information.

The peculiar attribute of "information" when modified by "human" is precisely something other than either all available environmental stimuli, or the subject's internal state. In fact, "human information" exists only as the result of the relationship between external stimuli and the human being's internal state. This being the case, it would then be external stimuli *plus* the human organism (including the human organism's internal state) which would result in "human information."

When external stimuli (Miller's *Information 1*) are *not* perceived by the human organism, then these stimuli cannot be classified as "human information." Since all perceived stimuli are perceived only in terms of the human organism's internal state,[2] one cannot conceive of the perception of an external stimulus without its interacting with the perceiving human organism's internal state. It is that which flows from the interface between external stimuli and internal state that may most appropriately be called "human information."

Many means of assessing the internal state of an individual are available. Moreover, the plight in this matter is not as severe as indicated in Miller's essay. For instance, among those techniques which might be used to assess the internal states of subjects are the following: Stephenson's "Q" methodology; Pavlov's conditional reflex; the Minnesota Multiphasic Personality Inventory; the F Scale; Rokeach's open-mindedness scale; psychoanalysis; interviewing; asking questions; physiological measuring instruments; the speech communication work of Laura Crowell and her colleagues, of Gary Cronkhite and of Charles Pyron; the available pharmacological agents for tapping internal states; and the conceptual framework offered by Basil Bernstein. Most likely, those reading this response could lend the author assistance in adding other means by which the internal states of subjects may be tapped.

It is appropriate to mention the experimental "hangup," as is done in the essay. However, the experimental "hangup" is only evidence of an overall and greater "hangup" on the part of the social, behavioral and life disciplines. This overall hangup is labeled "scientism" and is treated effectively by Susanne Langer in one of her most recent publications.[3]

In summation, Miller's essay when viewed as a methodological contribution seems both sound and worthwhile. When viewed as a conceptual contribution, it is imperfect and needs additional attention.

NOTES

1. W. Horsley Gantt. "On Humility in Science." *Conditional Reflex*. II (July-September 1967). 179-183.
2. Bernard Berelson and Gary Steiner. *Human Behavior* (New York: Harcourt. Brace and World. Incorporated, 1964). pp. 104, 110, *passim*.
3. Susanne K. Langer. *Mind: An Essay on Human Feeling* (Baltimore. Md.: Johns Hopkins Press. 1967). I. especially Chapter 2. "Idols of the Laboratory." pp. 33 53.

A Response to Gerald R. Miller's
"Human Information Processing: Some Research Guidelines"

DONALD K. DARNELL

This paper is intended to be a general reaction to Miller's paper. It was so prepared with the thought that such a response will be more stimulating to the conference and the members of the speech-communication profession than a line by line commentary.

Miller's distinction between *Information 1* and *Information 2* is a valid distinction. The observation in the paper is accurate that social science has, for the most part, ignored this distinction, and therein lies *a* cause of our many problems. Miller's criticism of consistency and credibility research also seems to be valid, but his suggested treatment of "operational-phenomenal schizophrenia" does not satisfy. The validity of "*post hoc* subjective reports" is questioned by Miller. The reliability and validity of "naturalistic observation" or intensive case study, suggested by Miller as an alternative, are also questionable.

It is true that experimentation has produced few useful generalizations, and one of the probable major reasons is a failure to deal with the information processing (decision making) of the subjects under investigation—people. The methods Miller suggests will produce even fewer useful generalizations. No amount of purely descriptive work will ever produce even one generalization with substantial predictive power. Predictive generalizations are the product of the integration of data. Increasing the subjectivity of the data can only increase the difficulty of such integrations.

If Miller is implying that the experimental method has been used like the small boy uses his hammer and that some of the applications have been unproductive and others quite inappropriate, he is

correct. If he is inferring from that (and his statement could be so construed), that researchers should get rid of the hammer and take up a club, no further comment is necessary. If Miller is saying that experimentation should be used more selectively and other appropriate tools should be considered, there is no argument.

There are, however, some other aspects of the matter to be considered: (1) There are as many specialized experimental designs as there are hammers. Most researchers are not sufficiently well trained to make the best choices among designs or to carry out the analysis of some of the more complex designs. Consequently, there is often a tendency to conduct simple, pointless experimentation rather than acquire or create the tools necessary to do a better job. (2) Unequal emphasis has been given to *internal* and *external validity.* ¹ The model of our idols, the psychologists, has been followed focusing so intently on internal validity, that the external validity (generalizability) problem has been overlooked. The result is that experiments have tended to be descriptive rather than inferential (by analogy with two popular categories of statistics). (3) The social sciences have failed to develop theory. Their hammer is, therefore, without a handle. As MacLean commented about rhetorical theses (in his Wingspread paper), researchers keep pretending that someday someone will put all this "research" together, but nobody ever does. As Miller suggests, researchers get so involved with experimenting and hypothesis testing that they forget to ask *why* they are doing these things.

Miller attributed these problems to an "experimental hangup." These problems could be attributed to a "theoretical hangup," in reverse. A *deterministic* notion of an adequate theory has been inherited which is incompatible with an essential axiom in any social science theory—that *people* make decisions and process information. The deterministic criterion of adequacy says that a theory should provide a necessary and sufficient explanation of events and thereby permit *certain* predictions of events. Therefore, no theory containing the decision making axiom is adequate, and no theory not containing that axiom is applicable to human behavior. The response to this dilemma has been to avoid theory making at all costs. That is understandable, but not very constructive.

An obvious solution lies in revision of this criterion of adequacy. Since a social theory must allow that people make decisions, and since it must allow that some of those decisions may be random, the *ideal* social theory *would account for all non-random components* of human behavior would minimize, but not necessarily eliminate,

uncertainty about human behavior. A "partially formalized" theory could be evaluated under this lesser criterion by the extent to which it *reduces uncertainty* about the occurrence of a specific class of events. The ultimate theory would specify the choice that a man has, rather than eliminate choice. (This is not, incidentally, a proposal for a clearer distinction between the physical and the social sciences, because it is commonly recognized that there are inherent uncertainties even in the so-called exact sciences.)

If one could accept this "uncertain" criterion of adequacy, one might, then, proceed with the task of formulating a coherent statement of what is known about information processing and human behavior. Given that, researchers could begin experimenting and, hypothesis testing more systematically and more productively.

Hopefully, these three points provide additional support for Miller's contention that preparing speech-communication graduates to be tomorrow's behavioral research scholars is an awesome task. However, "two or three courses in statistics and research methodology" were never adequate to produce a competent research scholar, and adding a course in computer programming is not sufficient either. Scholars must be prepared to adapt the scientific system rather than just apply it. They must be prepared to think.

Miller is quite right in saying that the behavioral research scholar has better things to do than study "Classical Rhetoric" and "British Public Speaking" as they exist in most speech departments; but it does not follow that students must be sheltered from rhetoricians. Students need to learn to think, to reason, and they can learn that better from some rhetoricians in many courses labeled "Rhetoric" than they can from some numerologists in courses labeled "Scientific Methods." In short, one of the reasons why speech-communication researchers must now admit failure to deal with information processing in their experimental research may be that they were too quick to divorce themselves from the humane study of communication –to become "pure" scientists. The magnitude of their problems is such that they should encourage all who have something to contribute to do so.

To return to Miller's main point, new measures of variables and new ways of conceptualizing some of these variables are needed to facilitate better research. Miller mentions Sherif, Sherif, and Nebergall's approach to attitude measurement. The most exciting event that has occurred in the field of attitude research is this conception of an attitude as latitudes of acceptance, rejection, and non-commitment. For the first time, researchers have come close to understanding what an attitude "really is" in an information processing

organism. The elementary theory that   companies this construct
regarding contrast, assimilation, ar   nvolvement is a bonus.
However, this idea will not be acce.   ..   versally without help.
It is not easy to fit it into existing st_   procedures. One can-
not find the mean and variance of three l. ..udes. Then, there is the
matter of what to do with the volumes of research that presume an
attitude is a point on a continuum. These volumes should be charged
to experience and attention should be devoted to developing the tools
to deal with what is obviously a more adequate conceptualization of
attitude.

The attitude example merely illustrates a number of situations in
which conceptualizations are, or have been, inadequate   in which
more adequate ones are difficult to formulate, and still more difficult
to implement when formulated. The concepts of cognitive consistency
and credibility are, undoubtedly, other instances of conceptual diffi-
culty.

NOTES

1. See Donald T. Campbell and Julian C. Stanley, *Experimental and Quasi-Experi-
mental Designs for Research* (Chicago: Rand McNally and Company. 1966);
R. E. Nebergall. "A Critique of Experimental Design in Communication Re-
search." *Central States Speech Journal*. XVI (February 1965). 13 16.

CHAPTER FOUR

Communication Behaviors: Acquisition and Effects

JOHN W. BLACK

This essay has two principal divisions: (1) the acquisition of communicative behaviors, and (2) the effects—especially deleterious effects—of this acquisition when mismanaged. The paper is primarily concerned with language and suggests that onlinguistic behavior generally follows the pattern of the most complicated of behaviors, speech behavior.

I

Language development is today discussed as *language acquisition;* one learns *rules* (e.g., the syntactic rules, the morphological rules, the phonological rules); what one knows and what one does are differentiated as *competence* and *performance* models; different classes of sentences are *transformations;* subject and predicate are *noun phrase* and *verb phrase;* the subject matter interests of different departments of a university make their claims to parts of the communicative process through such labels as *psycholinguistics, sociolinguistics, Romance linguistics,* and *speech linguistics;* units of communication which were once sentences become *remarks.* and most recently *phonological units* with subdivisions of *communication units* and *mazes;* and phonics is sometimes termed *code emphasis.*

Perhaps in keeping with this emphasis on language acquisition, de Laguna's *Speech: Its Function and Development* has been reissued recently. It represents as well as any book an explanation of *need* in connection with language acquisition. De Laguna attributed the phylogenetic development of communicative behavior to a period when men moved from trees to earth. Life became more dangerous and difficult on the ground than it was in the trees. The need for communal

behavior arose. Speech developed (i.e., verbal communicative behavior developed) as part of this communal behavior. The role of *need* is apparent in this explanation. The need that de Laguna posits is need "to control people" (for the common good of the community).

Others have reasoned that language is learned to fulfill one or another need of the individual, for example, *pleasure*. Almost every writer on the topic of language acquisition takes into account the evident pleasure that comes with a child's babbling (not very many— perhaps not enough—extend this discussion of the pleasurable reward to account for the puckerings, the momentary intra-oral pressures, and the mouthings that adults do before, at, and to each other). De Laguna, among others, draws a sharp line between prelanguage vocalizations and purposeful communication:

> The little child, as we have seen, spends many hours and much energy in vocal play. It is far more agreeable to carry on this play with others, and indeed if the impulse were not encouraged by his elder companions it would soon become abortive. But the little child indulges in language-play even when he is alone. He talks to himself while he is occupied with his toys and the other affairs of childhood. When he does not talk aloud, he continues to talk to himself silently. Internal speech, fragmentary or continuous, becomes the habitual accompaniment of his active behavior and the occupation of his idle hours.
>
> The advantage of this habit of internal speech is not merely the gaining of facility through practice in language. The habit of verbally responding to the things about one works a transformation of the powers of perception and reveals the features of a new world. It also prepares and makes possible purposive behavior. The objective and dynamic interconnections of things and acts and events are taken up and embodied in the structure of the living language which is the child's social inheritance. Just in so far as he learns to use the language of his people, and the autonomy of that language becomes a part of his own nature, he is the master of a new power. Speech not only brings the distant end to closer view and permits him to taste in advance its delights, but it reveals to him the road he must take, and sets his feet upon it. In language he finds preserved the experience of the race. It is true that his power to tap this vast reservoir has its source in his own experience of eye and, hand and limb: but through speech thus fostered he may indefinitely transcend his own individual limitations and take full possession of his racial inheritance.[1]

The dual goals of language evident in the above statement are (1) the control of individuals and (2) the experience of a pleasurable response. The fact that these goals overlap is obvious, particularly when

one considers that both can be classed as satisfying *needs* of the youthful speaker.

De Laguna suggests that purposeful communication becomes evident with the ability to name objects and to use language as a tool "to control other human beings." Sometimes this skill is called *interaction* or *group interaction*. The point at which "exploitation for pleasure" and selfless sharing end and begin is not clear. Mowrer associates some phenomena of communication with earlier, rewarding pleasures. For example, he relates the "intrapsychic" satisfaction that attends a child's play with speech sounds and the perfecting of these sounds to oral sensations evoked by his "love object," (e.g., his mother).[2] This notion that speech, a communicative behavior, comes from "fun activity" frequently recurs in writings on speech acquisition. A valuable, historical dissertation was written by Latif and published serially. Latif hesitates to attribute imitation of sounds solely to the pleasure that the production of sounds generates:

> An explanation in terms of pleasure would deserve attention if anyone had made clear how "pleasure" can actuate the tiny nerves and muscles which we know to be the machinery that produces reduplication. No one has done this and the "explanation" does not explain.[3]

Yet the supportive, historical survey that Latif presents is replete with references to the pleasure that is associated with the processes of sound production.

Most writers on language agree that speech is acquired between the ages of 18 and 24 months (some go as low as 12). This purposeful, positive, communicative behavior is in contrast to earlier stages of vocalization. These earlier stages are usually thought to be consequential and contributory to the communicative act. Fry writes:

> The learning that takes place on the motor side at this stage is therefore of a rather general nature and is absolutely basic to the acquisition of speech. The child is "getting the idea" of combining the action of the larynx with the movements of the articulators; of controlling to some extent the larynx frequency; of using the outgoing airstream to produce different kinds of articulation; and also the idea, which is quite important, of producing the same sound again by repeating the movements.
>
> The second important development at this time is the establishment of the auditory feedback loop. As sound-producing movements are repeated and repeated, a strong link is forged between tactual and kinesthetic impressions and the auditory sensations that the child receives from his own utterances. The pleasure gained from babbling, which comes in the first instance from the

> sense of movement, is soon enhanced by the child's hearing of his
> own sounds.[1]

Some issues over which differences arise are apparent in Fry's state-
ment. Yet agreement may outweigh disagreement regarding these
issues. Carroll posits that "babbling does not lead into organized
speech," and agrees that "if babbling leads to speech, it should at
some point begin to sound like adult speech."[5] A limited, longitudi-
nal study in Japan showed no difference between Japanese and Ameri-
can children until "the first meaningful speech."[6]

Either during or subsequent to babbling, purposeful communica-
tion is acquired. Precisely how does ·· acquisition of speech come
about? The process in which a behavior does not exist at one moment,
does exist at another, and can be repeated at will is called *learning*.
Therefore, speech is learned. This information provides a basis for
designating the components of a learning situation (i.e., stimulus,
response and reinforcement) and evaluating trial and error as a nec-
essary component in learning. Pavlov emphasizes conditioning;[7]
Skinner stresses *operant* conditioning.[8] Conventional learning theo-
rists in the wake of Hull[9] usually restrict themselves to stimulus and
response or association, that is a stimulus and a name (Hull; Pavlov)
– or without this particular association (Mowrer; Skinner). In any
event, something is learned. What some theorists have termed *sets*,
sign-gestalt expectancies (Hull) and *representational mediation proc-
esses* (Osgood[10]) are inferences which defy direct observation, but
which seem to particular specialists to characterize the language
learning process.

Attention is likely to be given unduly to the novel explanations of
learning. As a precaution here, a lengthy, conventional explanation
follows:

> Learning a language supplies the child with an enormous arsenal of
> cue-producing responses and with habits of using those responses
> in ways which have been found socially valuable.
>
> Words by themselves usually are weak stimuli, serving as cues
> rather than drives, except on those rare occasions when someone
> shouts or sings very loudly. During the educational process, the in-
> dividual learns to make many fine discriminations between words
> as cues. The sound of a word, though a weak stimulus, may acquire
> drive value in the same way that any other cue may acquire drive
> value. The individual may learn to react to the weak stimulus of a
> softly spoken insult with a response of anger producing a stimulus
> strong enough to have considerable drive value. Threatening words
> may become cues eliciting strong anxiety, and words of praise, at
> first relatively neutral, may, by association with primary rewards,
> acquire strong reward value.

Because of the extreme importance of language as a product of social learning which, in turn, influences the course of subsequent social learning, some of the significant steps in the process of learning to speak will be briefly sketched.

A child's first vocal behavior is crying. This response is high in the innate hierarchy of responses to any exceedingly strong stimulus, such as cold, hunger, or pain. Its dominance may be further increased by learning. Crying is frequently rewarded by the appearance of an adult who covers the cold child with a warm blanket, feeds the hungry child, or removes a stabbing pin. Perhaps as a result of these rewards, a child's later vocalization seems often to have a shrill character like fragmented parts of the crying behavior. If the crying and speaking situations are similar enough so that the effects of these rewards for crying generalize to the vocalizations involved in speaking, it might be expected that children who have been cared for every time they cry would learn to speak more readily than those who have not. Whether these two situations actually are similar enough so that sufficient generalization occurs to have any practical effect is an unsolved problem.

At the same time that the child is practicing his own crying responses, he is learning to respond to the voices of others. Adults who are feeding, fondling, and otherwise caring for infants usually, talk to them; thus certain tones of the human voice acquire a reward value and may later be used to soothe the fretful child. It seems possible that this acquired reward value of the sounds in the language generalizes to sounds which the child makes while he is babbling and helps to reinforce his babbling behavior.

In general, a child's first contact with the more formal aspects of language is in learning to use words spoken by other people as cues for his responses. A sharp "No!" is followed by punishment, which can only be escaped by stopping or retreating. Eventually, stopping becomes anticipatory and occurs to the   rd "No" spoken sharply, without the punishment. At the same time, "No" is acquiring an anxiety-arousing value, so that any response which brings an escape from a torrent of "Noes" is rewarded. Exactly which verbal cues a child will learn to respond to and how he will respond to them depends, of course, upon his learning capacity at the particular age and upon what his parents try hardest to teach him.

At the same time that the child is being rewarded for making more responses to words as cues, he is gradually learning another aspect of language, namely, how to make the response of uttering words. If a cooky is out of reach, the response pattern of pointing at it with the body and eyes and reaching for it with the hand is often rewarded by inducing some older person to give the child the cooky. If this gesture is accompanied by a sound, it is more likely to be rewarded. If the sound seems to be some appropriate word,

such as "Lool. at," reward is still more likely. Eventually, the more effortful parts of the gesture drop out, and the verbal response, which is least effortful and most consistently rewarded, becomes anticipatory and persists. The mechanism of reward gradually differentiates language from its original matrix of other, more clumsy, overt responses. The child learns to talk because society makes that relatively effortless response supremely worthwhile.

The child is given meticulous training in connecting words to objects and connecting acts to words. He is also given careful training in connecting words to other words, in combining words into sequences of stimulus-producing responses. The child must learn to combine words according to the rules of grammar; he is corrected thousands of times for grammatical mistakes. Unfortunately, no one has made a thorough learning analysis of the system of habits involved in combining words into grammatically correct sentences. It must be highly complex since it involves abilities which are not possessed by animals or feeble-minded persons. Precisely what these abilities are is not well understood.[11]

Myklebust suggests a progression from an inner language to the comprehension of language, and then to the use of expressive language.[12] Another sequence is posited by Vygotsky and Piaget and subscribed to by Luria: (a) a global communicative behavior or social language is followed by (b) an egocentric language (the subject of the sentence is not named and everyone is assumed to be incorporated in the implicit self-designated subject), (c) an inner language, and (d) a logical commu. cative relationship.[13] These stages occur at 18 months, 3 years, 6 years, and 7 years respectively.[14] In his paper for he Wingspread Colloquium, George G. Thompson acknowledged the reasonableness of this view and questioned the possibility of attempting to alter the sequence; however, he was curious about hastening its progression.[15]

Clearly, communicative behavior uoes not arise at birth, nor does speech. Children learn it; they pick it up; they develop it. Communicative behaviors have been studied quantitatively by many researchers, for example, Berko,[16] Templin[17] and McCarthy.[18] What does a child learn as communicative behavior? A child learns names of objects (e.g., horse, kitten), kinds of activities (e.g., run, eat), numbers of objects (e.g., singular, plural), states of being (e.g., is, seem), times referred to (e.g., present, past), relationships (e.g., to, from). Children learn how to say these and other things as verbal statements; they learn how to mirror them in writing. Throughout this learning process, children also learn an important dichotomy, correct usage versus incorrect usage. The cumulative result of this learning process is oral, communicative behavior; in fact, it is the learning of the lan-

guage of the communicative component of language behavior. The criticism of George Miller and others is poignant: there simply is not enough time in one's numbered days to learn the vocabula:y, to say nothing of the syntax, by the conventional processes that are included within the term *learning theory*.

> By a rough, but conservative calculation, there are at least 10^{20} sentences 20 words long, and if a child were to learn only these it would take him something on the order of 1000 times the estimated age of the earth just to listen to them.[19]

These critics argue that one learns *the rules* and that an individual applies the rules to "the stems" that are picked up from his communicative environment. The result is that one generates language. (Importantly, one also must learn the exceptions!) This view of language acquisition is not in keeping with Jesperson's illustration, "When the word is used the object is at the same time pointed out" (a view also held by Kahn); it also is not in keeping with E. B. Holt's modification of the stimulus-response formula which he called the *reflex-circle*.[20] However, something of a compromise is offered by Jenkins who suggests that the learning is by association, but that the object of the learning is not the isolated small pieces of communicative behavior; the object of learning is the rules.[21] A further reasonable compromise would be to ascribe the learning of one's first words sentences to conventional explanations, and attribute the subse- ~~plosion in language acquisition to learning and applying the rules.

Of the many communicative behaviors, receptivity seems to be learned first; expression appears to be learned later. Darwin reported that his son recognized the name of his nurse six months before he was able to say it.[22] Similar disparities between these two accomplishments are noted frequently. However, the single, isolated building block of language is not learned as a singular contrast to all other building blocks. Darwin's son probably could not have identified his nurse's name and accepted it, while rejecting all other rhyming words. Instead, there is a constantly developing process of differentiation. Classical examples cited include children identifying all people as *papa* and all lights as *moon*. Successive differentiation occurs in this learning process, both in reception and in expression—and in that order. The same process of differentiation leads to the distinction between "one" and "more than one." This matter of distinguishing singular from plural is one of the important differentiations that occurs in the process of learning communicative behavior.

In summary, this discussion has covered: (a) some of the reasons for acquiring communicative behavior, especially language; (b) how it

is acquired (learning); and (c) what is learned (rules) for receptivity and for expressiveness. Now, the discussion turns to another question: (d) What are the *conditions* under which a child acquires language, his principal tool in communication? Some of these conditions have been implied in the previous discussion. A healthy child is one member of a society with a lot of acoustic stimuli, objects, and activities that require naming, etc. Eric Lenneberg has written comprehensively about these conditions. The title of his book reflects his biases, *Biological Foundations of Language*.[24] The prominence of his works in scholarly journals and pertinent anthologies suggests that he speaks for a broad segment of linguists. Lenneberg denies there is evidence that conscious and systematic teaching of language occurs, just as there is no evidence of special training for stance or gait. Rather, the healthy child develops in a singular environment and, at about the age of 18 months, begins to acquire language. There is no change in the environment; there are no new needs to be met. Yet, from child to child, there is a marked regularity of onset of this aspect of the communicative behavior. Lenneberg agrees that comprehension occurs before expression—a universal rule. Even so, expression does not seem to accompany any particular development of motor control. Specifically, expression develops independently of precision in articulation. An analogy from economics is sometimes applied—a *laissez faire* assumption of language development. It is posited that there is a potentiality for language, there is a potentiality for communicative behavior, and (at about 18 months) a healthy organism with sensory apparatus will realize this potential.

With a reasonable amount of audible communication in the child's environment—irrespective of the social blight that surrounds him—communication develops. Indeed, the developmental processes seem to accommodate two languages as readily as one. A hearing child who is reared by deaf parents may develop a normal language for normal, hearing listeners and an appropriate distorted language for his parents. The two languages develop simultaneously. Furthermore, Lenneberg shows that practice is not essential for the acquisition of language. (This is at odds with the conventional view of workers in speech, illustrated by Fry, above and by Figures 1 and 2 below.) Children who suffer from abnormalities that reduce the function of the speech-producing mechanism may develop language skills quite normally.

Lenneberg's prime parameter with respect to the acquisition of communicative behavior (language) is age. He acknowledges the developmental sequence of (a) paying attention, (b) receiving language, and (c) expressing one's self in language. The last stage (c) commences at about 18 months and continues through puberty.
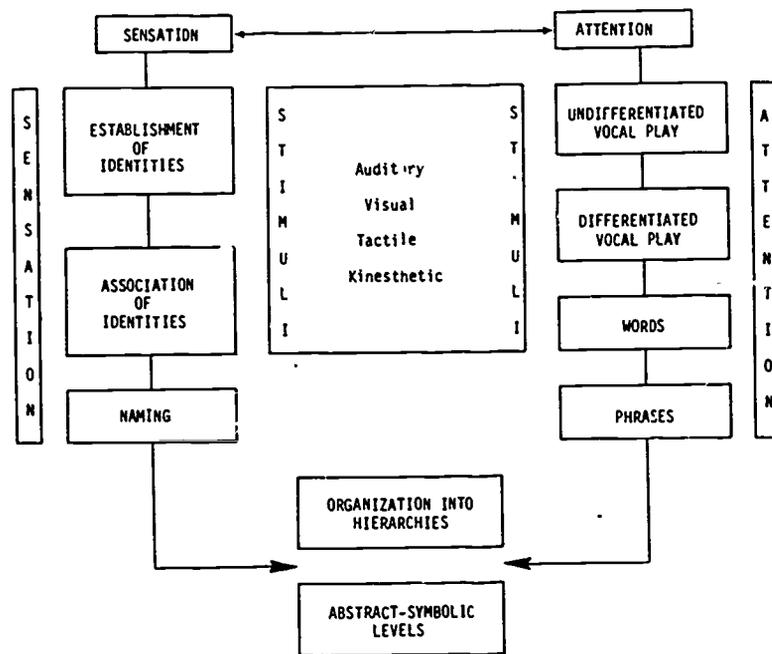
Figure 1.   A Model of Early Language Development. (See Note 25 for the reference.)

Therefore, there is little spontaneous, drive-engendered development in language skills. Lenneberg notes that if a very young child suffers a 'temporary loss in potential for a language and if the situation is remedied, the acquisition of language is not hampered. If a child loses his language prior to puberty, he will reacquire it—with improvement continuing until he reaches puberty. However, should an individual lose his language subsequently (beyond the age of 18 and perhaps by a cardiovascular accident in the left hemisphere), spontaneous recovery may be expected for about five months and minimal improvement thereafter. These dicta may be found elsewhere, but are presented in most complete and convincing form by Lenneberg. They present strikingly limited dimensions under which communicative behavior, specifically language, may develop. Although an adult can learn a second language, the process is quite unlike acquiring one's first language—the two processes are beyond comparison. Acquiring the second language is a slow, tedious process, but quite amenable to the principles of learning as outlined by any of several theorists.

The right age is but one of the conditions that Lenneberg sets for acquiring language. Another is the presence of an environmental language. Note is taken here of de Laguna's observation, "Analogy is
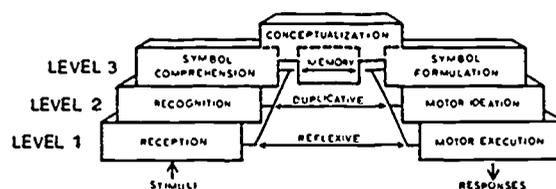
Level 1 (1 to 3 months): Gross reception of stimuli and the development of rudimentary localization and differentiation of sound are represented at this level. The motor patterns of reflexive vocalization are produced chiefly in accompaniment with vegetative activities, although some nonpatterned vocal play may occur. Refinement of motor elements basic to speech continues to about the fifth or sixth year, although approximately 10 percent of children require a longer period.

Level 2 (4 to 11 months): The ability to integrate sensory stimuli (especially acoustic cues) into patterns emerges at this level. The infant becomes able to differentiate quite complex auditory stimuli, as shown by his exhibitions of babbling and echolalia. He learns to discriminate many speech sound patterns and acquires sufficient motor control of the speech mechanism to imitate these patterns differentially. The development of memory for auditory stimuli is demonstrated also by the child's imitation of bisyllabic and trisyllabic utterances.

Level 3 (12 to 18 months): At this level a child demonstrates ability to respond to auditory stimuli as symbols (i.e., to show awareness that sounds may represent other events to which they bear no physical similarity). As a speaker he learns to formulate sound patterns as units of meaning. Concurrent with this emergence of language comprehension and formulation is the development of conceptual behavior--the ability to understand, classify, and categorize events.

Figure 2. Conceptual Model of Speech and Language Similar to Ones Described by Osgood. Kirk. and Wepman. (See Note 26 for the reference.)

useful because it brings into view characters which otherwise might remain unnoted. But while it may yield a clue, it cannot take the place of the direct analysis of the phenomenon under consideration."[24] One can hardly avoid being struck by the degree of dependence of workers in language upon analogy. Lenneberg resorts to this convenience frequently in connection with the "linguistic environment." A child "resonates" some of the features. The particular traits that induce this behavior of resonance may vary from child to child and possibly from stimulus to stimulus. A simple sentence said by an adult may evoke a single syllable spoken repetitiously by a child. This is an instance of resonating a segment of the environment. The syllable may be stored in memory to be oft-quoted, oft-repeated. and may become a self-generated unit in babbling. The on-going. repetitious stream of syllables has a component of duration which is another as-

pect of the linguistic environment. Stimulated conceivably by the same sentence, another child might resonate another aspect of it, perhaps an intonational one.

Attention is basic to the behavior called resonance. Explanations of the acquisition of communicative behavior by Lenneberg and by others emphasize the role of attention. For example, a conference made up of students of speech, linguistics, pediatrics, and psychology developed the schematic representation of Figure 1.[25] A feature highlighted by the figure is the interaction of input and output in the growth of communicative behavior. The stimulus (be it auditory, visual, tactile, or kinesthetic) generates a sensation. Again, *attention* is posited as a necessary condition for a response. With this condition (attention) and a succession of stimuli, communicative-like behavior may be expected. This behavior may precede the real, purposeful, communicative behavior of 18 months.

Another representation of communicative behavior appears in Figure 2.[26] This representation is more complete than that appearing in Figure 1. The role of attention is implicit in the reception of stimuli, as well as in the recognition of them. These models appear to be helpful to one's understanding of how speech-   iage-communication is acquired; yet, Lenneberg would be im,   .nt with them. He would say that with a healthy organism, attentive to its environment, some aspects of the adult's communicative behaviors will be resonated.

Within resonance (and implicit in Figures 1 and 2) is a noteworthy amount of imitation. Indeed, imitation is almost a necessary condition for the acquisition of communicative behavior. The copying of the heard stimulus may be a fun-experience (the word *play* is frequently used by theorists). The copying provides practice in the processes of phonation and articulation. (Fry has emphasized the importance of this practice; also, a tenet in behaviorism was *practice is learning*.) Through statistical probability, this copying establishes at least occasional conditions for positive reinforcement, as when a word is generated instead of gibberish. (Omar K. Moore taught four-year-old children to typewrite and to read by reinforcing the accidental behavior that yielded a correctly-spelled word.[27])

It is convenient to assume that the rules of communicative behavior are learned and that the organism then proceeds to generate the speech-language-communication sequence. Moreover, it is easy to believe that many of the rules are learned during the repetitive or imitative exercises of the youngster. Like much of the related literature, Figure 3 (A and B) is replete with helpful analogies. Figure 3A is Fairbanks'[28] explanation of the way feedback operates in on-
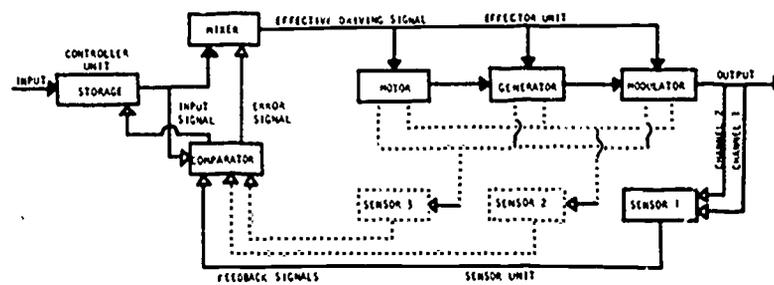
Figure 3A.   Model of a Closed Cycle Control System for Speaking. (See Note 28 for the reference.)
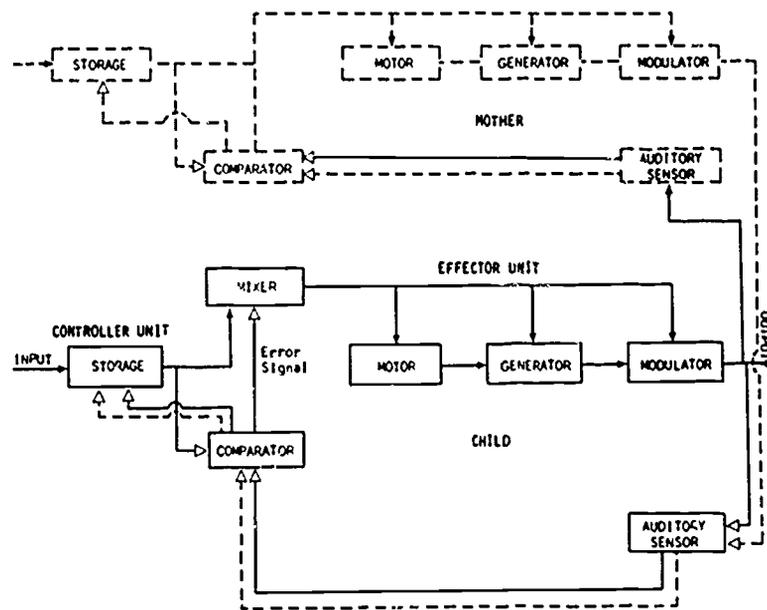
Figure 3B.   Modification of the Model in Figure 3A to Relate to the Acquisition of Speech. (See Note 28 for the reference.)

going speech. This is a closed-cycle, self-correcting behavior. The three sensory feedback channels are indicated: auditory, visual, and proprioceptive. Each of the three senses an aspect of one's oral communicative act. Each feeds back to the comparator. What one expects to hear is drawn from storage, and is compared with what one does hear. In order to make a change, the nature of the output is sent to the mixer; a changed speech behavior ensues. The child who is by chance facing a mirror may well respond to all three feedback chan-

nels as he hears himself, sees himself, and feels himself talk. (Van Riper observes that the mirror prolongs the babbling stage of deaf children [29])

In Figure 3B a second monitoring system has been added to Fairbanks' model. There is a second storage system included. Typically, this is the mother. It is the stored-up patterns of communicative behavior of an adult generation, of a geographical region, of the environmental culture, or of the "old man." Now the child continues to speak (as in Figure 3A), perhaps repetitiously, drawing from the repertoire of his own storage system and (guided by his own comparator) correcting his speech production at will. The child is also stimulating another monitor, another receiver, and another storage system, as shown at the top of Figure 3B. Only a single channel is shown, presumably auditory; yet, the mother might watch the child as well as hear him. This second storage system has a voc. ulary, pronunciation, syntax, and features of rate and loudness—all that goes to make up oral language behavior (subsequently it will scan themes, correcting spelling and punctuation). What the mother hears from the child and what she expects to hear from her storage are brought together in her comparator, and cause her to enter the on-going, cycling system—getting as close as possible to the child's comparator and system of self-correction. In this extremely close, fun-sharing relationship which is unfettered by resentment, even negative reactions and fault-finding by the mother may seem to be positive reinforcements to the child. Here, then, are learned the rules of pronunciation, of phonology, and perhaps of several other systems that fall within communicative behavior.

The copying or imitative processes that are inherent in resonation (and so common in children's communicative beha .or) may teach the rules for syntax as well as pronunciation. Brown and Bellugi studied the language of a pair of children in depth and longitudinally,[30] Model sentence. were spoken by mothers and imitated by the experimental subjects, conveniently named Adam and Eve. Whi' the sentences of two or three morphemes were repeated correctly, longer ones were reduced by the children to about this number of units. Nouns and verbs tended to be retained; function words were dropped. The ability to cope with longer stimuli increased with age. In another part of the experiment, the mothers' expansions of the children's reduced speech were noted. Thus, "baby high chair," as spoken by the child, was repeated by the mother as, "The baby is in the high chair." The authors noted three major processes in the child's acquisition of syntax: (a) imitation with reduction, (b) imitation with expansion, and (c) induction of latent structure. The last is

the most complex of all—the ability to understand and to construct sentences that have never been heard previously.

The evoking of communicative-like behaviors through imitation or copying may be hastened by the introduction of an artificial, language-like environment. Sheila Goff and her students have placed a microphone-loudspeaker line near a child at play and have inserted in the line a delayed feedback loop.[31] As the child hears his vocalizations, both concurrently with producing them and after a pre-set interval of delay (of .05 and 1 second), the amount of his vocalization is increa .... The self-generated increments in vocal play are statistically significant. Hopefully, this self-stimulated practice may be directed toward particular aspects of phonology. Fry calls /p, t, m/ simple sounds and constrasts them with the most difficult /s, r, θ , ð /. The latter sounds are acquired relatively late.[32]

There is another vast activity closely related to the acquisition of language—the teaching and learning of second languages. This is a tedious occupation which is directly in line with Lenneberg's supposition that language readiness declines with puberty and is gone at age 18. The rules that accompany one's first language are imposed upon the second one—phonetic rules, morphological rules, and syntactic rules. The outcome is rarely less than a pronunciation dialect and may approach "Pidgin" English. The outcome is defective communicative behavior and will be treated as such in the second section of this paper.

There is current thought that virtue lies in teaching English as a second language to persons who have learned a distorted dialect-English. This matter should be considered. First, attention should be given to the restrictions on the learning of language skills that come with advanced age. Second, it is important to answer the following question: What is gained by viewing the new mode of utterance as a new, second language, rather than as a modification of the first language? One reply is, "The integrity of the household." This topic will be extended in subsequent paragraphs.

In summary, the acquisition of communicative behavior seems to include the absorbing of rules from the environmental behavior or environmental language and then generating a behavior that fits the rules (as they are known at the time). The mechanisms for crying and babbling are usurped. From the viewpoint of purposive behavior, de Laguna, Latif, and almost all other writers draw a sharp line between precommunicative oral behavior and the onset of real language behavior (about the age of 18 months). However, from the standpoint of oral dexterity, Fry, Van Riper, Goff, and many workers in remedial speech place a premium on the generously practiced

sound-generating, phoneme-making apparatus that is put to pur-
poseful use with the acquisition of language. The learning of com-
municative behavior involves some degree of imitating and copying,
euphemistically termed resonation.

The rules are experience-bound and capacity-bound. The toddler
handles "little utterances." These are expanded by the adult who
chances to be in the environment. As the toddler moves toward adult-
hood he uses longer-and-longer remarks. McCarthy notes that this
process is facilitated by siblings and by a well-to-do environment.[33]
Perhaps both increase the opportunity for resonation.

There is a built-in ceiling on the performance model of one's com-
municative behavior. An individual cannot exceed the rules which
have been experienced, either receptively or expressively. Some-
thing may come along to alter the competence model (for example,
a school or a speech teacher), but this is difficult to do after the eight-
eenth year. Ironically, one is able to lose his language convincingly;
for example, with deteriorating hearing the crisp English /s/ de-
generates to another English phoneme, usually spelled *sh*. This change
occurs slowly, but painlessly. Yet to learn deliberately the distinc-
tion between these two phonemes, as adults approaching a new lan-
guage, is slow and painful.

Much of the process of acquiring language is bounded tightly by
barriers of inexperience. The communication rule that has never
been experienced receptively or expressively, is unattainable. There
are good environments and less than good ones for acquiring the rules:
degrees of fluency of speech, pleasantness of voice quality, appro-
priateness of intonation, precision of articulation, vividness of
phraseology, style of the generated sentences, and cogency of reason-
ing. How fortunate was the son of Quintilian, of Lord Chesterfield, or
of Chatham! The history of eloquence lauds the linguistic environ-
ment of the fortunate soul who is destined to become a leader. In spite
of all these silver and gold spoons, everyone is bound by the barrier of
inexperience with particular rules.

II

The foregoing discussion has emphasized the acquisition of com-
municative behaviors. This section focuses on the effects of this ac-
quisition. Increasingly, the discussion is bounded by the mechanics
of speech (that is, *voice* or, at most, *voice and diction*— not rhet-
oric). Interestingly, the acquisition and the maleffects go together
and are evident in both Figures 1 and 2. However, this closed-cycle
view is one from which scholars need to move away.

When one "comes by" something as easily as language and speech
are learned, it is reasonable to inquire how "standards" operate:
"This is good; this is medium; this is poor." One who enforces such
standards, one who assigns grades to the forms of communicative be-
havior, is a prescriptivist. Such a person has a notion of "the right
way" and would enforce this behavior on all people. There is nothing
new about prescriptivists. Did not Quintilian prescribe how the toga
was to be worn? Was it not prescribed how the toga was to be held
during the expression of one or another mood in speech? In more
recent history one reads of the gestures prescribed by elocutionists.
This is a literature i: self. Each gesture had a meaning. The teacher
saw to it that the gesture was executed well. A communicative
behavior with an associated literature developed. It sustained cir-
cuit riders who went from one university to another (especially, the
more evangelical ones) to teach for limited periods. It accounted for
the establishment of what are now departments and schools of speech
in many colleges and universities. It seems to be the progenitor of a
current interest in semiotics. In spite of this recent development,
contemporary culture tends to discount the emphases of the elo-
cutionist and to say that singular gestures do not convey singular
meanings. (Allowing for a certain semantic looseness in the word
gesture, this view ignores some valuable work of Sir Richard Paget
and ignores some factual evidence that speechreading can be taught
and learned.[34])

Notions of correct and incorrect usages, the dicta of prescripti-
vists, provide examples worthy of consideration. One instance of the
fallibility of great minds lies in the excellent work that was done by
Thorndike in devising a scale for rating penmanship.[35] This work
is a classic in psychophysics, particularly scaling. Thorndike's study
represents the first adaptation of the method of equal-appearing inter-
vals to stimuli with no known physical values. This work was done
early in this century. Scaled samples of merit in penmanship were
developed. This procedure has been duplicated by Lewis and Sher-
man[36] with scaled samples of stuttering, by Morrison[37] with
scaled samples of children's articulatory defects, and by Sher-
man[38] in a number of studies of communicative behavior. Thorn-
dike's assumptions and objects included: penmanship was an impor-
tant communicative behavior; penmanship was here to stay: pen-
manship should be graded with the same accuracy-as-arithmetic;
therefore, a scaling of penmanship was in order. Now, what was the
plight? By the end of World War I, penmanship was scarcely em-
phasized as a school subject. This communicative behavior is now
held in low esteem, possibly a temporary state in the succession of
different evaluations placed upon behaviors.

Judgments of what is "good" and what is "bad" in communicative behavior are often fallible, but they ^re no less real and influential. One may ask: What standards of excellence do the untutored and unlettered have with respect of voice and diction? Do they have any? A positive reply arises from listening to services in near-primitive churches. The voices become more orotund during the prayers, the language more "high-falutin'," the sentences more complex, and the articulation more precise. An excerpt from one of James Milton O'Neill's model speeches of introduction is relevant:

Here's to the town of New Haven
The home of the truth and the light,
Where God talks to Jones in the very same tones
That he uses to Hadley and Dwight.[39]

The quip proves no point, but it causes one to think about standards of excellence of speech in rural church congregations. If standards of excellence simply emerge universally, then they are inherent in communicative behavior and should be singled out and made the topics of instruction. If standards of excellence are superimposed, as the descriptivists imply, then they are as the foibles of handwriting and the mannerisms of Bath. Teachers of speech must be as ready to be "dunked" as Thorndike was. Much hinges on this point, including the professional dignity of speech teachers and the solvency of the Speech Association of America. At the moment, all that matters in handwriting is legibility versus illegibility. Interestingly, the latter is blamed upon the reader, not the writer. If this is the case in speech, then by analogy intelligibility is all that matters; the failure to understand may be blamed upon the listener, not the speaker.

It is a bold view—and hard to defend—that some manners of speaking are *good* and some are *bad*, that some are *correct* and some *incorrect*. Teachers currently try to avoid these words; they search for less obnoxious ones, *standard versus substandard, received pronunciation versus dialect*, and the like. Teachers state with minimal factual support that there is a correspondence between meritorious speech and economic reward in the American society. A friend from the ghetto asks, "Why be reluctant to accept 'a fact of life?' " Unwittingly, the topic is placed outside the bounds of positive, favorable behavior with the descriptive label, "a fact of life." Yet the friend persists by urging that Americans are a class society; the educated and monied classes are one and the same in opposition to the impoverished welfare seekers, who are also the uneducated. For the latter, jobs are not available in the banks, in the schools, nor in the offices that hold status. Admittedly there is a difference between

suburban living and "restricted living." Is a distinction between "suburban dialect" and "ghetto dialect" valid?

There are quantifiable differences in language. One cannot get away from them. McCarthy found that the children in the homes of professional people used longer verbalizations than the children in the homes of laboring people.[40] Figures 4A and 4B are based on the work of Orvis Irwin.[41] In Figure 4A a tally is shown of the mean -number of phoneme types used by children whose parents were in different occupational groups. The abscissa is the age of the child. Figure 4B shows the amount of talking and the number of pho- nemes generated within a particular stimulus situation by the two groups. Children of well-to-do people simply talk more and dif- ferentiate more, phonemically, than do other children. These dif- ferences that relate to the home environment occur after about 18 months of age. This kind of difference is somewhat at variance with the suppositions of Lenneberg: A healthy organism simply develops speech and it resonates one aspect or another of its linguistic en- vironment. By way of explaining the Irwin results, Lenneberg notes:

> The differences observed in the speech habits of upper- and lower-
> class children are actually difficult to evaluate because of the many
> co-varying factors. For example, the influences of malnutrition
> and of diseases that delay development is higher among poorer
> children who may also be emotionally more amenable to testing
> situations than those from carefree homes.[42]

The differences observed by Irwin between children from different home environments are in keeping with other evidence of dif- ferences in language behaviors among large populations in the United States. For example, during World War II many Air Force person- nel were tested for intelligibility, both as speakers and as listeners. These individuals were then categorized according to the service command within the United States from which they had been in- ducted. There were statistically significant differences among the groups. The most intelligible people came from the vicinity of Lake Michigan and the least intelligible (both to themselves and to others) came from the general region of Texas. Talkers from the deep South lay midway between these two extremes.[43] The people in this situation were performing a national service; inherent within this service was the necessity to communicate.

Some people are simply more articulate than others; in part, this difference related to pronunciation dialects. This can be explained in part by the mechanisms shown in Figure 5. One segment of the Air Force personnel is represented in Figure 5, showing the in-

PHONEME TYPES
Occupational Groups-Theoretical Curves

Professional
Business
Clerical Group

Laboring Group

P_T

(Age Levels)
(Years)

PHONEME FREQUENCY
Occupational Groups-Theoretical Curves

Professional Business
Clerical Group

Laboring Group

P_F

(Age Levels)
(Years)
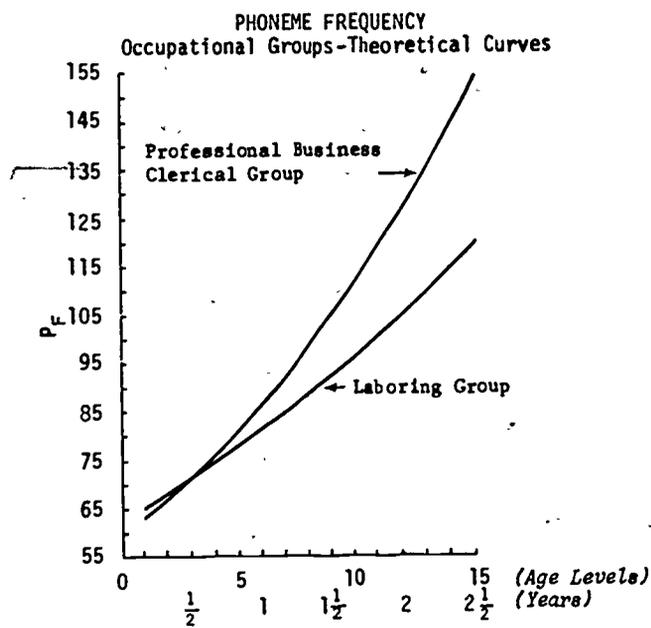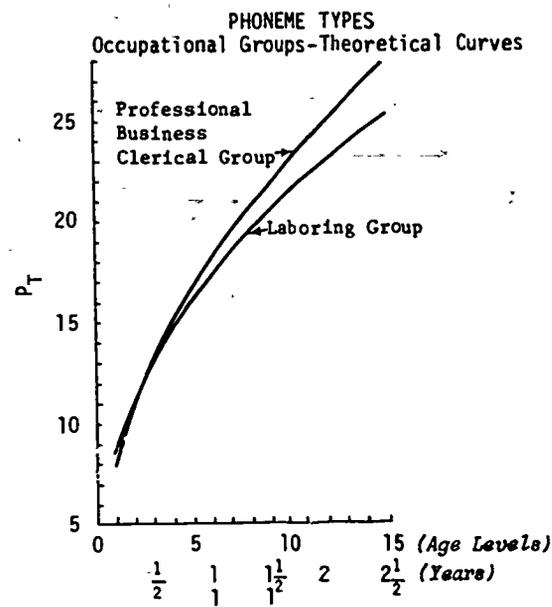
Figures 4A and 4B.   The Acquisition and Use of Phonemes by Children of Families
of Different Occupations. (See Note 41 for the reference.)

telligibility scores of 141 pilots speaking in noise.[44] Clearly, distinguishable speech is vital to their role in combat. Four hours of training markedly improved the intelligibility of these men. Moreover, the display of individual differences and the effect that can be inferred, in terms of safety of personnel and economy in operations, are striking. While the major association shown here is between individual differences and intelligibility, by implication there is another lawful consideration—that regional pronunciation dialect has a national impact.

INTELLIGIBILITY OF 141 STUDENT PILOTS

INTELLIGIBILITY SCORE
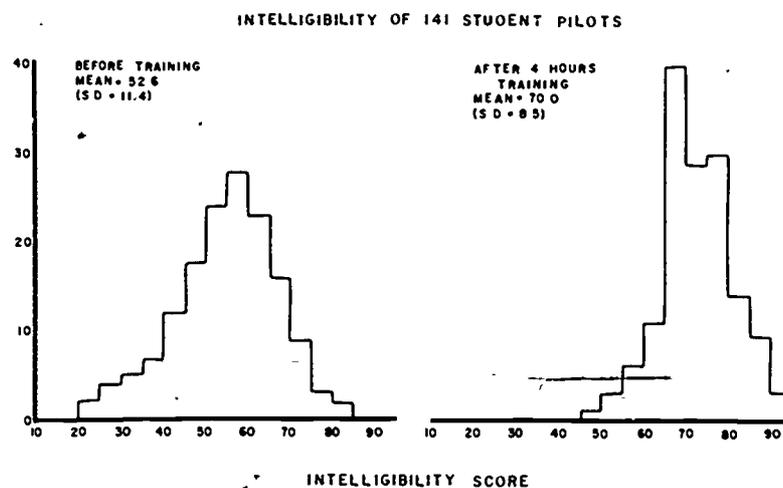
Figure 5. The Intelligibility of 141 Student Pilots Before and After Training. (See Note 44 for the reference.)

Another selected national population is in the Job Corps. A little more than a year ago the first report was published of a program, *Development of a Program to Teach Standard American English to Speakers of Nonstandard Dialects*.[45] This report showed that approximately three out of four corpsmen need some form of remedial speech and language training and that the remaining one uses noticeably simple language structure. Although more employable than the rest, those using a simple language structure were still not considered qualified by employers for semi-technical jobs. Briefly, the corpsmen with the best speech have an overly simple, seemingly child-like language. The most serious speech problems are poor intelligibility and poor aural comprehensibility. These relate to phonetic, grammatical, and lexical causes. The problems are big ones; the gross, common, important problems outweigh matters of regional differences.

This topic is again remindful of a parallel between an economic

caste system and an apparent, attendant progression in manners of speaking. What would happen if all the impoverished people suddenly became rich, and all the well-to-do people suddenly became workers-on-relief? A person who identifies with a ghetto replies cynically, "Speech teachers would work toward achieving the 'other extreme.' " This answer is wrong! The prestigious dialects of Russia fifty years ago are still prestigious. There is a related and highly pertinent topic that was introduced briefly earlier. Any discussion of the dialects of the impoverished leads quickly to suggestions about procedures concerning "the teaching of standard English as a second language to speakers of English." An argument is that the family relationship must not be upset. The pronunciation of the leader of the family must not be challenged. The Head-Start youngster, the elementary school child, the high school student, the college adult must be taught to use standard English when looking for a job, and urged to use his home dialect at home and among his peers.

This leads to a highly personal response. (One's pronunciation is personal!) A person does not have to seek out economically isolated segments in order to find pronunciation dialects. Each can speak of his own dialect. My home community was west of Indianapolis, close to the Wabash River. The locality was indistinguishable from Louisville, Kentucky, and had more in common with Birmingham, Alabama, than Buffalo, New York—in terms of dialect. Possibly because I went to a nearby college, the dialect was not called to my attention; alternatively, the dialect was not severe (or again alternatively, no pronunciation dialect is important). However, immediately after college my pronunciation dialect was important. I was only 250, miles removed, but *teaching*. A pronunciation dialect stood out. I worked on my speech laboriously and learned to differentiate between the name of a bird that says *who-who* and the middle syllable of *Prince Albert*. Other marked irregularities were ironed out. When I return to my home community I hear the original dialect. Occasionally, I use it—but always with a feeling of having *fun*. Importantly, the fun arises after the phrase is uttered. In Fairbanks' model it arises when "what is heard" is compared with "what comes from storage." I play this game in the deep South, too. The speech that I am hearing is close to that in which I was reared. It attracts me and I follow it. Then I find myself reacting humorously to what I hear myself say. However, never is there any feeling that I should talk the dialect of my cronies, or of my family, or of my former neighbors simply for reasons of private relations. Furthermore, I do not have much sympathy with the point of view that anyone else should perpetuate an isolated pronunciation dialect (or morphological and syntactic one)

for reasons of "private relations." I do not sense that Ruth Golden, who has upgraded the speech of many children in Detroit, sends her stud   s home to practice the dialect that the parents brought to Detroit.

A substantial portion of this essay relates to imitation, to copying. It is known that verbal messages are reduced (become smaller) in the copying process. There are still a lot of things which are unknown about copying—sometimes called *speech processing*. The evidence seems convincing that the duration of a message is reduced as it is repeated. However, this observation is hardly consequential in the present context. Of more relevance is the fact that the very nature of the word *intelligibility score* means that error-responses (as well as correct responses) are made in intelligibility testing. Words are often misunderstood. It is also a common experience to note that many people make the same mistakes. This has been exploited in the construction of multiple-choice intelligibility tests, in which three of the four possible responses are those error responses made most frequently in straightforward, write-down intelligibility testing. In fact, one can predict that the most frequent error is made with twice the frequency of the second most frequent error, and that there is also a constant ratio between the second most frequent and the third most frequent errors. One can also predict that one-half of all the mistakes that are made involve four or five different responses.[47]

Obviously, some words sound like other words. One might infer, then, that some phonemes sound like other phonemes. The extent to which this is true is suggested in Table 1.[48] The distances are the proportional distances that separate two phonemes perceptually. The

TABLE 1   Mean Interphonemic Distances*

*See Note 48 for the reference.

first impression may be that the values look very much alike. They may; yet the differences are real, not merely apparent. The values associated with the psychological distances between sounds correlate highly with the frequencies of particular substitutions that have been made in intelligibility testing (for example, in research by Miller and Nicely[49]), and also with mistakes made as a consequence of the failure of short-term memory (for example the work by Wickelgren[50]). Important for the present discussion, these psychological distances correlate highly with the sound substitutions that children make. For example, in psychological distance, /w/ is very close to /r/; this bears out the frequent mistake by a child, "wed wagon."

There is scarcely a writer who treats the development of language within *the individual* who does not resort to a discussion of defects of language. Lenneberg does this extensively; de Laguna does this somewhat. Similarly, intelligibility is studied "in noise." The practice of studying deteriorating speech (and measuring the effects of deterioration, and the further practice of noting disabilities of speech) are common among researchers. Often, these approaches lead to analogies, and usually they contribute to an insightful understanding of the speech act. Now, the discussion turns to a singular case of distorted speech: foreign dialect.

Figure 6 represents language-related behaviors of three groups of foreign students who had learned English "well" as a second language.[51] They were graduate students in an American university. Each group of 24 was subdivided into the 12 who did relatively well on an aural perception test and 12 who did rather badly. This division was based on how well they identified English words on a multiple-choice intelligibility test. All the possible responses were before them. Subjects simply had to select the individual items they heard from clusters of four words. First, the 12 persons who comprehended English better in each of the three language groups were more intelligible as speakers. Second, those who understood English better as listeners were heard as having less foreignisms (that is, less foreign dialect or accent in their speech). Third, in the reading of standardized materials, the students who heard English better used their vocal folds over a longer period of time; their spoken vowels had greater *quantity* than the vowels of the other group. The effect noted here is that the language-speech behavior of individuals who learn English as a second language is almost global in its deterioration. One comes to doubt such statements as "I can speak this or that language pretty well, but I cannot understand it." The whole language-speech behavior is in error. By analogy, one can infer that the language behavior processes of Air Force crewmen from one particular service

Levels of Proficiency in Aural Comprehension

■ Upper Half

▨ Lower Half

Mean Vocalized Time

Mean Ratings of "Foreignism"

Mean Intelligibility

Spanish   Japonese   Hindi
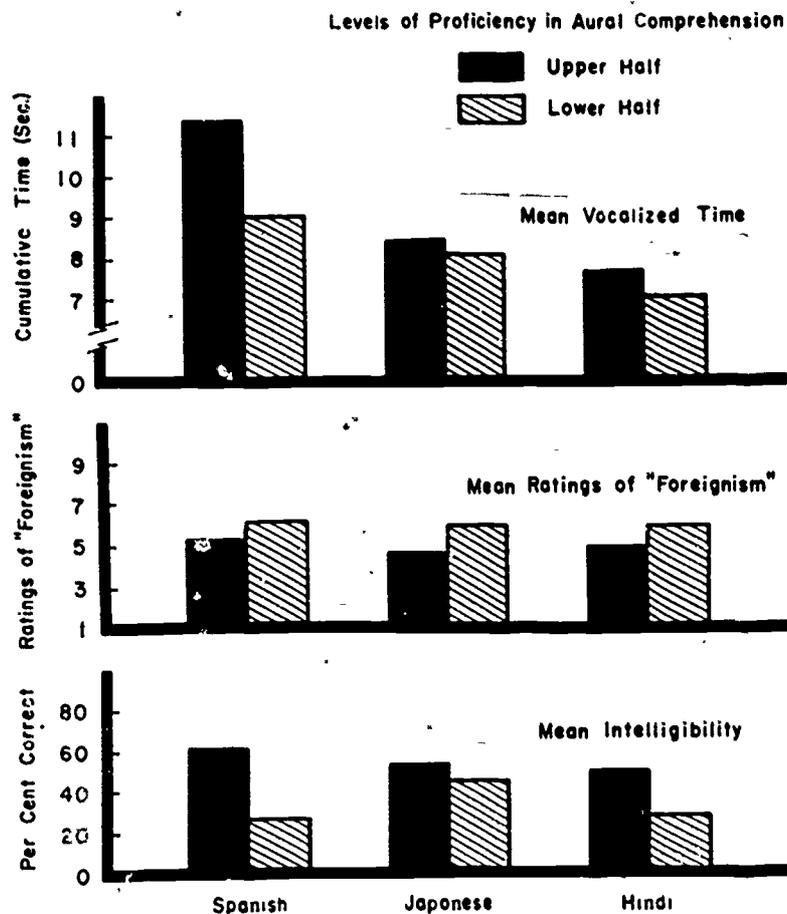
Figure 6. Three Communicative Behaviors in Relation to Proficiency in Aural Com-
prehension. (See Note 51 for the reference.)

command are globally at fault—that the global language behavior of
job corpsmen needs remediation.

Figure 7 presents another view of persons with different language
backgrounds speaking English.[52] The test material used was the
multiple-choice intelligibility tests. French, English, and American
officers were attending the same courses of instruction at an American
military installation. The scores shown are intelligibility scores.
Generally, no one could understand the French speakers as they were
attempting to speak English; both the English and the Americans
were more proficient in understanding their fellow-countrymen than
in understanding each other. However, the more important part of

the figure is the upward extension on the bars at the right. Here, American listeners were familiarized with the voices of the Frenchmen and of the Englishmen. For sixty minutes American listeners heard twelve French speakers read five-minute passages from *The Reader's Digest* while following the textual copy visually; other listeners heard the same kinds of renditions by British speakers for a similar period. Then, the oriented listeners heard the intelligibility tests as recorded by the French and English speakers. There was a marked improvement in perception. These findings indicate that some "getting used to voices" does occur within a period of sixty minutes.
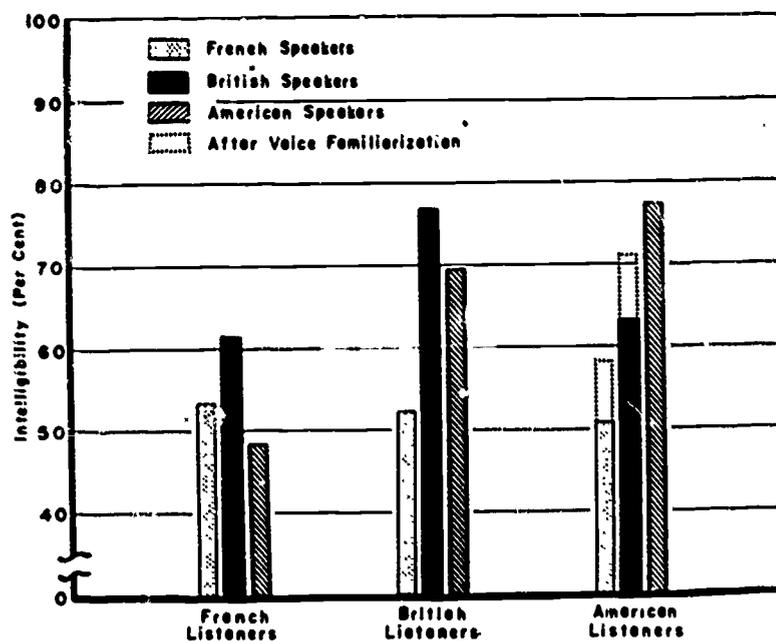
Figure 7.   The Mutual Intelligibility of Three Language Groups, and the Effect of Familiarizing American Listeners with Foreign Dialects. (See Note 52 for the reference.)

The purpose of this paper has been to outline how language is acquired and to discuss some of the detrimental effects that can and do accompany this process of acquisition. The next question is, "What can we do about it?"—and that is one part of this conference.

These questions are open and particularly sensitive. Where does each individual want to stand and where does each person want the Speech Association of America to stand on the matter of prescribing

manners of talking? Much of this conference has no clear visibility
to government or professional groups. However, a view on "correct-
ness of pronunciation" makes a difference. A questioning attitude
about the propriety of teaching one English for employment, as op-
posed to another for home living will stand out. Individually, each
person may take any view, but it should not reflect emotionally tinged
descriptive phrases such as "snob," "elegance of diction," or
"fact of life."

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A Response to John W. Black's
"Communication Behaviors:
Acquisition and Effects"

JOHN WAITE BOWERS

A number of options are open to the first respondent. Among these options are doing a line-by-line critical analysis of the paper being examined, proposing a global alternative to the paper, or discussing a related subject. This response will focus momentarily on a few paragraphs in Black's paper, then depart from it to consider a related subject. Hopefully, the second respondent will do a line-by-line critical analysis and propose a global alternative.

The distinction between good and bad, correct and incorrect, language performance is considered briefly in the paper. Black seems to be saying that standards of performance may be useless, given intelligibility, in the same way that standards of performance for penmanship are useless, given legibility.

The implication that language performance is a binary variable with intelligible speech being one, unintelligible speech being zero, seems untenable. Certainly, it is clear that some intelligible speakers seldom achieve instrumental success, while other intelligible speakers often achieve success. That is, one can distinguish among intelligible speakers if the *probability of reaching desired outcomes* is used as a criterion. If this distinction is made, researchers are on their way to finding useful operational definitions of standards of performance, of good and bad, of correct and incorrect. Some hints will be derived from such work about the variables in the competence model that make a difference rhetorically. One of these variables probably is dialect, but surely not dialect simplistically considered as good or bad. Rhetorical variables are relative variables. With some audiences, for some speakers, a ghetto dialect doubtless increases

the probability of success. With other audiences, for the same speakers, what Black calls a "prestige" dialect increases the probability of success. Some speakers have only one dialect in their performance models; other speakers have more than one. If these assumptions are right, the speakers with more than one performance model have a higher probability of general rhetorical success, because more rhetorical options are open to them. Clearly, rhetorical research is one of our tasks. Such research involves the exploration of variables more crucial to society than those that govern penmanship.

This emphasis on rhetorical matters prompts the second purpose of this response: to open discussion on a topic that Black did not treat. In Black's paper the word "effects" in the title was interpreted to refer to the influence of acquisition processes on the later behavior of a speaker. "Effects" can be used in a different sense, to refer to the influence of linguistic and paralinguistic performance on a receiver. To put it another way, Black discussed language performance as a cluster of psycholinguistic variables; language performance also needs to be discussed as a cluster of rhetorical variables.

Most of this writer's research and some of that done by graduate students at the University of Iowa has been concerned with the effects on receivers of variations in linguistic and paralinguistic performance.[1] The rest of this response will discuss generally the conclusions toward which this research has led. Some of these conclusions go considerably beyond the data. However, for the purposes of this conference, speculative generalizations might be more useful than rigorous specifics.

1. Within the range of "standard" English (e.g., excluding obscenity), language and paralanguage variables have less effect than many content and extra-message variables. Although statistical significance has been found for some language and paralanguage variables, these differences have not been striking. In a study relating language intensity to another independent variable, Carmichael and Cronkhite found greater differences between "frustrated" and "non-frustrated" subjects' responses to messages than between responses to "high intensity" and "low intensity" messages.[2] Later, Carmichael found the frustration variable to have even stronger effects, regardless of the content of the message, if the topic was related to the frustrating condition.[3] Similarly, although other studies revealed statistically significant differences resulting from the use of metaphor, of "introvert" and "extrovert" paralinguistic performance, and from southern and northern dialects, these differences were not great in

any absolute sense. In some studies, linguistic and paralinguistic variables had no differential effects on attitudes toward concepts but only on judgments of speakers' credibility. What the speaker says and what conditions he says it under seem to be more important, in general, than how he says it.

2. Linguistic and paralinguistic performance variables interact on receivers, with each other, and at least the following variables: (a) initial attitude toward the source; (b) initial attitude toward the concept; (c) reference groups; (d) treatment of the topic (e.g., abstractly or concretely); (e) motivational state of the receivers. Some evidence exists for all of these relationships in the references cited (see notes 1–7).

3. Linguistic and paralinguistic performance variables have stronger effects on judgments of source credibility than they have on attitude change toward the concepts of the messages. Furthermore, the two kinds of effects are not always consistent with each other. "Introvert" and "extrovert" delivery affect attitudes toward sources but not toward their concepts.[4] Similarly, Thompson found that "message intensity" did not affect attitude change toward concepts.[5] However, high message intensity significantly weakened the credibility of a source initially low on that variable while it significantly strengthened the credibility of a source initially judged high on that variable. Bowers and Osborn found that two kinds of metaphors affected attitude change toward concepts similarly but judgments of source credibility differentially.[6] Often, the effects of linguistic and paralinguistic variables on source credibility are more complex than their effects on attitudes.

4. Linguistic and paralinguistic performance variables seem to act sometimes as cues to a source's reference groups. These reference groups may then mediate the acceptance of the message by a receiver. Houck and Bowers found that a speaker addressing northern audiences in a southern dialect had different effects when the topic of his speech was related to regional norms than when it was not.[7] Variables other than dialect probably are relevant to the same kinds of results.

5. Linguistic and paralinguistic performance variables that give reference group cues relevant to messages have greater effects than variables indicating more abstract personality variables. The study in which Houck and Bowers manipulated dialect[8] was considerably more fruitful than Bowers' study in which "introvert" and "extrovert" delivery was manipulated.[9]

6. Some of the most interesting linguistic and paralinguistic performance variables have not yet been tested. For example, to this writer's knowledge no one has manipulated profanity or obscenity,

even though this variable might have fascinating relationships with audience, speaker, and situation variables. It appears that no one has yet used specificity of reference, or even familiarity of vocabulary in an experimental attitude-change study.

7. Possibly the greatest need is for a strong rationale (one hesitates to say "theory") which can be used to predict the effects of linguistic and paralinguistic performance variables as a subsystem within the broader communication system. In other words, a grammar is needed to relate symbols to their effects. Possibly, this rhetorical need for a grammar is even more critical than the syntactic need for one. Unfortunately, no such system is offered here.

This response is intended to widen the basis for a discussion of Black's paper—from an exclusive concern with source-message relationships and psycholinguistic relationships, to a concern with source-message-receiver relationships and rhetorical relationships.

NOTES

1. For some of the preliminary research on language intensity conducted at the University of Iowa see John Waite Bowers. "Language Intensity, Social Introversion, and Attitude Change." *Speech Monographs.* XXX (November 1963). 345–352: John Waite Bowers. "Some Correlates of Language Intensity." *Quarterly Journal of Speech.* L (December 1964). 415–420.

2. Carl Carmichael and Gary Cronkhite. "Frustration and Language Intensity." *Speech Monographs.* XXXII (June 1965). 107–111.

3. Carl Carmichael. "Attitude Change as a Function of the Relevance of Communications and Their Sources to Frustrating Experiences." unpublished doctoral dissertation. University of Iowa. 1965.

4. John Waite Bowers. "The Influence of Delivery on Attitudes toward Concepts and Speakers." *Speech Monographs.* XXXII (June 1965). 154–158.

5. Wendel Thompson. "Message Intensity as a Variable in the Application of the Congruity Principle." unpublished doctoral dissertation. University of Iowa. 1965.

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7. Charles Houck and John Waite Bowers. "Dialect and Identification in Persuasive Messages." Paper read at the Speech Association of America Convention. Los Angeles. December, 1967.

8. Bowers and Houck.

9. Bowers. "The Influence of Delivery . . . ," pp. 154–158.

A Response to John W. Black's
"Communication Behaviors: Acquisition and Effects"

FREDERICK WILLIAMS

It appears from the list of invited papers for this conference, that its organizers feel the *acquisition of communication behaviors* is one of the key areas for research and teaching within the speech-communication field. Black's task was to outline a preliminary definition of this area. The present task is to evaluate and otherwise respond to Black's definition.

Basically, Black has presented a survey of some of the literature on language acquisition, with some emphasis upon voice and diction. Rather than quibble over details regarding his paper, the present response will concentrate on two major points. First, the most current perspective on language acquisition is not represented sufficiently in Black's paper. Second, the crucial relationship between what most people call *language acquisition* and what the conference planners have called *communication acquisition* has not been considered adequately. If, indeed, the field of speech-communication is going to concern itself with the acquisition of communication skills, a thorough consideration of the foregoing two points is mandatory.

As Black's paper emphasizes there is an abundance of literature on the topic of language acquisition. Some of this literature treats the topic in a broad and speculative manner, as in Grace de Laguna's *Speech: Its Function and Development.*[1] Such speculations make interesting reading, but they are of more historical than contemporary interest. Another major portion of this literature includes highly detailed descriptions of children's speech sampled at different age levels. Typical of these are the studies by McCarthy[2] and Templin.[3] These two studies and others in this class offer vast inventories of the lan-

guage that children seem to be using at various ages. There is hardly a step between the data and the conclusions of such studies; they provide little in the way of a map between the data of performance and a theoretical conception of the acquisition process. Finally, there are the numerous studies and theories (e.g., Mowrer[4] and Skinner[5]) where learning theory paradigms are used either to explain the acquisition of some of the simple aspects of language, or are stretched far beyond their limits in an attempt to accommodate the parameters of what humans actually seem to learn about their language. Taking all the literature into account, it is almost amusing, if unfortunate, that in the midst of the twentieth century scholars are still hard-pressed to explain the acquisition of a skill that is used perhaps more than any other human trait.

However, Black has hinted in his paper that there are some fresh insights on the horizon. Chomsky,[6] for one, has stirred current thinking by his stress on the distinction between linguistic *competence* and linguistic *performance*. In brief, competence refers to a person's knowledge of his language. It is the knowledge which characterizes a person's mental capability to create and to understand the utterances of his language community. This person may not be able to verbalize this knowledge for others; however, through his intuitions of the language and the experience of its performance his knowledge may be characterized in some abstract, descriptive form. If this is done for a community of speakers without regard to the constraints upon performance (e.g., omitting a concern for such factors as demands upon temporary memory, motivational factors, or social factors). Chomsky observes that a description of the grammar of the language results. Such a grammar is in a state of development; its statement is in the form of generative and transformational rules. In brief, it is the *generative* grammar that we are now hearing so much about. By contrast, if concern is with language behavior—the actual performance of speaking, listening, reading or writing—that concern is properly within the realm of a theory of performance. In its essence, a theory of performance would be an explanation of how competence (linguistic knowledge) enters into the acts of language usage (linguistic performance).

Chomsky's stress upon the competence-performance distinction has greatly sharpened the kinds of questions raised about language acquisition. For one thing, the question of how acquisition occurs can be focused upon linguistic competency itself. That is, a child's linguistic development can be seen, and possibly described, in terms of his developing knowledge of his language, rather than in vast in-

ventories of performance data. If a generative grammar provides some idea of the nature of this linguistic knowledge, then it seems reasonable to investigate the hypothesis that the process of language acquisition somehow involves the child's induction of linguistic rules from his linguistic experiences. The grammar also suggests another intriguing possibility. Since it seems clear that some linguistic rules are universals—that is, they are applicable to all speech communities—perhaps there is a significant biological component in the process of language acquisition. In other words, perhaps a child is predisposed to develop rules of a certain type; when coupled with the input of linguistic experience, this endowment may lead to a child's knowledge of his language.

If all this sounds like a radical departure from the usual accounts of language acquisition, it is. However, it is also the viewpoint that seems to be at the center of contemporary thinking. If speech-communication scholars want to maintain contact with the current issues in theories of language acquisition, it is necessary to understand this new point of view. Interested scholars will want to add the major recent essay on this topic, David McNeill's paper on "Developmental Psycholinguistics,"[7] to Black's bibliography.

The second main point focuses on the relationship between the acquisition of language and the acquisition of communication skills. Within this relationship is a key point to be noted by speech-communication scholars. Certainly, one goal of a speech-communication theory is to describe the functional role of language. This concern can be phrased broadly in this question: *How do the details of language enter into the details of communication*? One might rephrase the question in terms of the second main point and state the problem as follows: *How do the details of language acquisition enter into the details of communication acquisition*? In the brief space remaining an idea or two will be sketched on the kinds of answers which seem needed for the latter question.

Of course, language acquisition does not take place in a social vacuum. A child witnesses his linguistic experiences primarily within situations involving functional discourse—parents, siblings, and peers talking to one another and to the child. Just as Chomsky and McNeill, or Brown and Bellugi conceive of the child as inducing the linguistic rules for a noun phrase from such experiences, it is equally reasonable to assume that a child also acquires a knowledge of the communicative function of noun phrases. This identifies a kind of rudimentary intersection between the acquisition of linguistic skills and the acquisition of communication skills. In fact, it may not even be reasonable to separate the two skills on this level; together, the

two may reflect a unitary developmental process. That is, perhaps
neither linguistic nor communication skills can develop separately;
they develop together. The implication, then, is that one likely an-
swer to the question posed previously is that the early development
of communicative skills may be found in the same behavior as the
early development of language skills. Indeed, what the theorists are
now telling us about language acquisition may be further susceptible
to fruitful interpretation in terms of the acquisition of communicative
behaviors. This, it seems is the relationship between what Black was
talking about as "language acquisition" and what the conference plan-
ners had in mind when they used the term, "communication acquisi-
tion."

Given the relationship between linguistic details and linguistic func-
tions, the latter can be examined meaningfully in terms of a child's
social environment. Just as the linguistic details of a child's utterances
will reflect the details found in his linguistic environment, so will the
functional aspects of his language reflect his environment. It is this
latter relation that stands at the center of Basil Bernstein's distinction
between the so-called "restricted" and "elaborated" codes.[8] Here
Bernstein has theorized about social class differences in *modes* of
speech—that is, how speech is used. In the most general conception,
Bernstein distinguishes between a social environment where the func-
tion of language is largely one of social-linkage and an environment
where language is used for the transmission of ideas, reasoning, ab-
stractions, and the like. Children reared in these different environ-
ments become distinguished in what they learn about the use of
speech. They use speech for different purposes; their communicative
skills are different in function. These differences can be seen not only
in a functional contrast but in the linguistic distinctions which arise
from these different functions. More recently Hess and Shipman[9]
have tried to locate the development of these contrasts in the different
kinds of regulatory strategies which mothers may use with their
children. From the work of Bernstein, and Hess and Shipman, one
can begin to see more of the parameters of a theory of communication
acquisition—how the social environment shapes the details of chil-
dren's communicative behavior, and how this behavior incorporates
the details of language.

In sum, this response has been addressed to two major points. First,
the current research and theory in language acquisition characterize
a radical departure from what most of us learned during our graduate
student days. The acquisitional process is now seen by many as a
process whereby the child induces linguistic rules from his linguistic
environment; and a description of competency, rather than just per-

formance, is at the heart of the matter. Second, there should be a de-finable relationship between theories of language acquisition and what we have called communication acquisition. The early language development of the child is a likely starting point for defining that relationship.

NOTES

1. Grace A. de Laguna, *Speech: Its Function and Development* (New Haven: Yale University Press, 1927).
2. Dorothea McCarthy, *The Language Development of the Preschool Child* (Minneapolis: University of Minnesota Press, 1930).
3. Mildred Templin, *Certain Language Skills in Children: Their Development and Interrelationships* (Minneapolis: University of Minnesota Press, 1957).
4. O. H. Mowrer, *Learning Theory and the Symbolic Processes* (New York: John Wiley and Sons, Incorporated, 1960).
5. B. F. Skinner, *Verbal Behavior* (New York: Appleton Century Crofts, Incorporated, 1957).
6. This is best described in Chapter 1 of: Noam Chomsky, *Aspects of the Theory of Syntax* (Cambridge, Mass.: Massachusetts Institute of Technology Press, 1965), pp. 3-62.
7. David McNeill, "Developmental Psycholinguistics," in *The Genesis of Language*, eds. F. Smith and G. A. Miller (Cambridge, Mass.: Massachusetts Institute of Technology Press, 1966), pp. 15-91.
8. Basil Bernstein, "Elaborated and Restricted Codes: Their Social Origins and Some Consequences," in *Communication and Culture*, ed. A. G. Smith (New York: Holt, Rinehart and Winston, Incorporated, 1966), pp. 427-441.
9. R. D. Hess and Virginia Shipman, "Early Blocks to Children's Learning," *Children*, XII (September-October 1965), 189-194.

Out of the Ivory Palaces: A Proposal for Useful Research in Communication and Decision

GARY L. CRONKHITE

It will be a tribute to scholarly detachment if a sense of urgency does not pervade this conference. This group has convened at the request and expense of the federal government to consider how to improve research in communication at a time when that government—and the society it represents—faces a crisis in communication. This paper considering the role of communication in decision making is presented at a time when a sizable, vocal, and "prophetic" minority is indicting current decision processes on the grounds that there is a communicative deficiency in those processes.

The "sociodelic" happening that erupted on the steps of Sproul Hall at the Berkeley campus was (at least initially) a protest against the lack of communication at that particular multiuniversity. Since then, on many large campuses across the country the protest has been repeated: the governed demand a direct confrontation with those who govern and insist on some voice in decisions which affect them. Most readers have seen or read about like events on their respective campuses. A group of students (composed of some sincere protesters, some "hoods," and some fraternity boys out to see what it is like to "get busted") will gather to protest a grievance. Unaccustomed to dealing with nonviolent demonstrations, the local police may perceive an incipient riot, or some students, tiring of nonviolence, may provoke the police deliberately. Then the photographers begin snapping pictures that will appear in the papers the next day—students being

manhandled, clubbed, sprayed with MACE or tear gas, or students
waiting in jail for arraignment on charges of resisting arrest, con-
spiracy, or inciting a riot.

Those who specialize in promoting communication as a necessary
part of decision-making processes have a made-to-order communica-
tion crisis just outside the office windows. To date, the expensive,
time-consuming research concerning decision-making processes has
been about as useful as Marie Antoinette's famous line, "Let them
eat cake." One hardly allays the confusion by standing on the steps
and shouting, "Use an all-channel communication net!"

A second crisis in communication is not so close to the ivory
tower, but it is not so far that it cannot be seen from the ramparts:
the crisis in understanding between blacks and whites. A few years
ago (even a few months ago) it appeared that the society was faced
with the problem of changing the attitudes of whites toward Negroes.
A coalition group of moderate Negroes, white radicals, and white
liberals was staging sit-ins, bus rides, and marching through the
South to publicize dramatically what they believed could not be
communicated in other ways. They were aided by sheriff's deputies
with fire hoses and cattle prods, and/or by the Ku Klux Klan with
bombs, war surplus weapons, shovels, and an occasional Mississip-
pian levee. The 1964 Civil Rights Act was passed. Martin Luther
King received the Nobel Peace Prize. Malcolm X was considered
an incurable fanatic when two weeks after John F. Kennedy's assas-
sination he said:

> America is the last stronghold of white supremacy. The Black
> Revolution, which is international in nature and scope, is sweeping
> down upon America like a raging forest fire. It is only a matter of
> time before America herself will be engulfed by the black flames,
> these black firebrands.[1]

Suddenly, the face of the problem has changed. Malcolm X is a
martyr and patron saint of the new Black Power movement. The Stu-
dent Non-Violent Coordinating Committee, in May, 1966, elected
Stokely Carmichael as its leader, a Carmichael who refuses to define
violence out of his concept of Black Power. Rap Brown has become
a celebrity who advocates violence openly, and has been rewarded
in Harlem, Chicago, Watts, Detroit, Newark, and by a score of
lesser conflagrations. LeRoi Jones, a Negro poet and playwright ar-
rested in the Newark riots, expresses the spirit of violence in his
poem, "Black People."[2]

Now, a significant minority of Negroes are tired of trying to goad
the mammoth, American decision process into action with the dull

spur of mere communication. They have decided to stop talking to the "honkies" at all or, when ostensibly talking to whites, to talk in antagonistic, uncommunicative terms designed to be overheard by black ears. The bigot and the backlash movement stand on the other side, warning whites to arm themselves. The white liberal and Reverend Abernathy (both dirty words in both camps) run from one side to the other shouting at anyone who will listen.

This is a crisis in *communication*. It was caused in part by a failu : in communication; it has resulted in deliberate abortions of further communication. What shall the experts in pathologies of communication prescribe? What shall experts prescribe to myriad demonstrators, marchers, and draft-card burners as more suitable means of making their anti-war protests heard? What shall experts prescribe to the new generation as a means of communicating new beliefs about sex and drugs to their unyielding elders? How can experts help those elders communicate a sense of ethical responsibility to the new generation? Nowhere is the problem more evident than in this: who would have thought that the biologists would find an effective oral contraceptive before the communicologists determined how to tell the world about it?

The problems of the world cannot be solved by this paper, nor by this conference. However, there are some ways in which research regarding the role of communication in the decision process can be improved: (1) scholars must become more interested in making public the results of their research; (2) scholars must set about deliberately to make their research relevant to the real communicative problems of a real society.

Publicizing Research Findings

One cannot consider the results of research to have been "made public" after being reported to the readers of *Speech Monographs* or the *Journal of Communication*. These are appropriate periodicals in which to publish technical research reports, but it is unlikely that the most relevant research will have any impact on society until it is given a great deal more publicity than is afforded through such journals. Many research findings are available which might help to solve some of the problems surveyed, if only someone outside our field knew about them.

Two types of persons are needed: those who *translate* and those who *apply* the findings. Translators must be trained to synthesize and transmit the results of research for and through the popular media.

Specialists in communication must be trained to understand the findings and put them to use in solving practical communication problems. Werner von Braun might have had a limited impact if he never actually built and fired a missile. Hopefully, scholars in the field can have a constructive impact (if less spectacular). However, in order to do so it will be necessary to dirty one's hands with real communication. Speech-communication scholars may have to accord more prestige and respectability to the individual who writes articles of a practical nature for popular periodicals such as the *Saturday Review*, and they may have to give some of that prestige and respectability in the form of raises and promotions.

Moreover, new curricula may have to be designed to prepare degree candidates first to understand the research findings and then to apply them to practical communication problems. This may mean that degree candidates will not take as many courses in statistics or experimental design; it may mean that they will spend part of their time in some sort of supervised internship or apprenticeship. Finally, new service courses and new undergraduate curricula may have to be designed to prepare students at the undergraduate level to understand and apply the findings from research.

Making Research Relevant

Now if research is *not* relevant to the problems people actually face in making decisions, then publicity is not likely to be of much help. How can one define most meaningfully the dependent, intervening, and independent variables used in research?

Dependent Variables

The dependent variable typically used in decision research has been some measure of subjects' "attitudes." As everyone knows, the "attitude" is a mythical beast imagined to inhabit the heads of subjects used in social science research. Its appearance has been described in a variety of ways. Students exposed to Osgood's semantic differential probably see their "attitudes" as seven-segmented worms with "good" at the head and "bad" at the tail. Those exposed to the Likert approach would describe their "attitudes" as having five segments, with "agree" at the head and "disagree" at the tail. The Thurstone variety of "attitude" has eleven segments, but it seems doomed to extinction because it is too refined to reproduce rapidly.

As conceived initially, social psychology *was* the study of "attitudes," on the assumption that by knowing an individual's "atti-

tudes" one can predict his behavior. La Rochfoucald once defined a tragedy as a beautiful theory murdered by a cruel gang of facts. The philosopher William James has added that with so many naive and innocent theories floating around there is bound to be a tragedy every day or so. So, to paraphrase Stevenson, social psychologists have been dragged kicking and screaming to the conclusion that "attitudes" bear very little relation to behavior. Recent papers by Festinger,[3] Rokeach,[4] Fishbein,[5] and Miller,[6] among others, have lamented the problem, tried to explain it, and offered solutions. Becker[7] has written most recently, "I cannot imagine that any communication scholar can long be satisfied with studying the behavior of making marks on paper (unless those marks are on ballots in voting booths)," and proposes that researchers begin using the behaviors with which they actually are concerned as the dependent variable. This advice appears to be the beginning of wisdom. If socially significant research is to be produced, researchers must adopt *socially relevant behavior* as the dependent variable.

However, the paper-and-pencil test cannot be abandoned as useless. There are times when researchers really *need* to observe one type of behavior as a substitute for the behavior with which they really are concerned. It is often inconvenient and, at least for some, unpleasant to use lynching behavior, raping behavior, and bombing behavior as criterion measures. But consider a somewhat different approach to the problem. It seems a little strange to ask whether "attitudes" predict "overt behavior," since there is no measure of "attitudes" *except* "overt behavior." When an individual makes a mark on paper, he certainly is behaving overtly. On the other hand, the black looter in Detroit may be viewed as responding to an attitude test of sorts; as McCroskey has indicated, he is revealing his "brand preference under cognitive stress"—and his attitudes toward violence, "The Man," and the "honkies." Such overt behavior may be viewed as an attitude-test response. The research problem is actually (1) a problem of low correlation between two tests, or (2) a problem of finding behavioral responses which are mutually predictive.

Researchers simply must do a better job of selecting these substitute behaviors. The substitute behavior used as the criterion measure (whether it is a paper-and-pencil test or something else) must be performed under conditions as nearly as possible identical to those encountered in the unstructured, "real life" situation to which the experimenter wishes to generalize. For example, paper-and-pencil tests which attempt to elicit subjects' responses to the printed verbal stimulus "Negro" depend on the existence of some vague, generalized stereotype. One should not be astonished to discover that

responses to such a stereotype do not adequately predict responses to a specific individual with neat clothes, good manners, appropriate grammar, dark skin, and Negroid features. It is deplorable that social scientists, generally so opposed to stereotyping, have depended upon and almost encouraged stereotyping in attitude measurement.

Not only does the central stimulus differ from the "real" one in the usual paper-and-pencil test, but the situation in which it-is-administered may differ from the situation in which "real" behavior occurs. To the extent that this substitute behavior and the conditions under which it is elicited match the "reality" with which researchers are concerned, chances for producing socially relevant research will be increased.

Another problem becomes apparent. Behavior on the paper-and-pencil test used may be highly reliable, but the "real" behavior may be highly unreliable and thus unpredictable by *any* means. "Real-life" behavior may be a very poor "test" for at least two reasons: (1) it is usually a one-item "test," and one-item tests are notoriously unreliable; (2) the conditions under which "real-life" behavior occurs are unstructured, uncontrolled, and may vary considerably from one instance to the next. Thus it may not be the paper-and-pencil test behavior that is at fault when it fails to agree with "real-life" behavior.

Further, most paper-and-pencil tests have been designed to test the extent to which subjects like or dislike an *object, concept, or person*, but the results have been expected to indicate the likelihood that an individual will perform a given *action*. Fishbein has suggested researchers might be better able to predict whether an individual will perform a specific action if they knew (1) what that individual believes to be the consequences of the action, and (2) how favorable the individual is toward those consequences. Thus, if it is necessary to use as the dependent variable something other than the criterion behavior itself, the measures used ought to give an idea of what the subject perceives as the likely consequences of the criterion behavior and the desirability of those consequences.

The next reason why behavior on a paper-and-pencil test may not correlate with behavior it is intended to predict is that these tests may fail to reflect the *importance, intensity*, or *motivational strength* of an "attitude" and may give no indication of the amount of *knowledge* upon which the "attitude" is based. As Miller[8] has pointed out, it may require little motivation to mark an extreme position on an attitude scale, whereas the criterion behavior with which an experimenter is concerned may require a great deal of motivation. Simi-

larly, Brown[9] has suggested that an individual may indicate identical "attitudes" toward two concepts; however, he may know a great deal about one and very little about the other, so that he may act with considerable assurance and be very resistant to change in one case but be much less willing to act and more willing to change in the other case.

Further, there are many cases in which subjects avoid indicating certain attitudes, or in which they are influenced by what they perceive to be the wishes of the experimenter. In such cases paper-and-pencil test items are usually very easy to "fake." The subject may suffer a little damage to his concept of himself as a consistent and truthful person; often he will be unaware of inconsistency or will rationalize successfully. Actually, there may not be any inconsistency or lack of truthfulness; it is just much easier to indicate a complete reversal of opinion on a paper-and-pencil test than it is to reverse "real-life" behavior completely.

Finally, paper-and-pencil tests have failed often because they have been based on implicit, a priori theories of social action. It has been assumed without empirical evidence that certain responses to certain test items "should" be predictive of certain social behaviors. The "construct validity" of the attitude test items has been established by correlating them with each other; this "construct validity" has been so impressive it sometimes has been forgotten that the only excuse for the existence of the test items is their usefulness in predicting other behavioral responses which really matter. The discovery that these attitude test responses do not necessarily predict other types of behavior has caused some to conclude that subjects are not "consistent," whereas it should serve to remind them that armchair speculation is no less fallible when performed by behavioral scientists. The most cherished of assumptions has been that there is a generalized, unidimensional tendency to "approach or avoid" and to evaluate the components of the environment. Since Triandus has demonstrated that there is no unidimensional evaluative component of social behavior, even that article of faith seems doomed.

Criticism is relatively easy. More difficult is the task of offering suggestions for improving measurement of the dependent variable in decision research. Becker's suggestion is the most important: experimenters must begin to use socially relevant "real-life" behavior as the criterion measure whenever that is practical. However, in cases where this is not practical, measures should be devised which will correlate with the criterion behavior. To offer a few specific ways in which that might be done may provoke more and better suggestions.

Test situations often fail to duplicate the "real-life" situations. One possible solution is to construct a video-taped attitude test in which real-life situations are pictured for the subject and in which he is asked to indicate how he would respond. This could be done much in the manner of CBS' National Driver's Test. One might picture a specific Negro seated next to an empty seat on a bus in a specific city, with another empty seat available next to another passenger. The subject's choice of seat would constitute one response item. A number of such scenes and corresponding responses would make up the test.

The second problem noted was the lack of reliability of "real-life" behavior. It is often possible to structure a situation in such a way that the subject thinks he is responding freely, when in reality he is being exposed to a standard test situation with standard, quantifiable, alternative responses. If well planned and executed, this sort of test can give advantages of "reality" and standardization. With enough time and money, it may be possible to monitor free behavior for a long period of time in order to make reliable observations. For example, Dr. Kenneth Purcell, working at the Children's Asthma Research Institute in Denver, is presently testing the hypothesis that asthma attacks are precipitated to some extent by emotional arousal. Children at the Institute wear tiny transmitters which relay all their conversation and their respiration to central recording equipment for twenty-four hours a day. Trained raters then do a type of content analysis of the conversation. The fact that the system is operating successfully suggests that problems of experimental design in communication may not be as great as they first appear. Such equipment (supplied by North American Aviation) may be useful in speech-communication research. Less sophisticated equipment such as concealed microphones, concealed television cameras, and one-way glass may be satisfactory, less expensive, less obtrusive, and more convenient for research purposes.

If experimenters often test "attitudes" toward objects and concepts and then try to use the results to predict the subjects' actions, the solution seems straightforward and obvious. One must determine subjects' beliefs about the consequences of the criterion behavior and their attitudes toward those consequences. Fishbein's AB Scales lend themselves to such measurement, although other means undoubtedly can be devised.

The fourth problem was the need to measure the motivational strength of "attitudes" and the amount of knowledge on which they are based. Miller's[10] use of the vigor of button-pressing behavior as a measure of the motivational strength of "attitudes" is a start

and may lead eventually to a solution. In the meantime one might be so gross as to ask subjects to respond to some test items designed to answer questions such as: "How certain are you of this response?" "How difficult would it be to change your mind?" "Would you argue with a friend who disagreed with you on this point?" "How much do you know about this concept?"

The fifth problem was the ease with which paper-and-pencil test items can be "faked." There has been little use of "indirect" assessments of attitudes; those in this field have been suspicious of the extensive inference necessary when using psychoanalytic devices such as the *Rorschach Ink-blot Test* and the *Thematic Apperception Test*. Still, one possible indirect approach is suggested by some work done at the University of Iowa to determine the extent to which a film viewer's judgment of a facial expression depends upon the context in which the facial expression is observed. A subject tends to judge a man's "neutral" facial expression as indicating different emotions when the image of the "neutral" face follows a shot of a beautiful girl and when it follows a shot of a violent traffic accident. In cooperation with some members of the Art Department at Illinois State University, this writer is developing a test of "attitudes" toward art and artistic concepts which will make use of this phenomenon. For example, it does not seem unreasonable to make inferences about some subsequent behaviors of an individual who judges a man's "neutral" facial expression an expression of "disgust" when the image is preceded by a film shot of a male dancer but judges the same expression to be one of "pleasure" when the image is preceded by a film shot of a spectacular basketball play.

Toward the same end, those especially interested in physiological measurement probably will continue to search for a physiological response which is not subject to conscious control but bears a relation to subsequent evaluative behavior. Still another possibility is to devise some standard and compelling alternatives to attitude extremity or attitude change. When one measures weight, he provides a set of standard counterweights for the measured object to "pull against." Measuring "attitude" with the typical paper-and-pencil test is akin to measuring weight without using any counterweights: there is no standard force against which change or extremity can be balanced. Thus, it is easy for the subject to indicate extremity or change which may bear no relation to behavioral extremity or change in a "real-life" situation. One solution is to devise tests which provide standardized and desirable alternatives which the subject must sacrifice in order to indicate extremity or change of attitude. If the subject knows he is to be penalized for every unit of extremity

or change which he indicates on a paper-and-pencil test, the test will be much more like a "real-life" situation in which he almost always must choose among alternatives. Penalties in units of money or electric shock are the most obvious, but fertile imaginations may produce more sadistic suggestions.

The final reason suggested to account for the low validity of paper-and-pencil attitude tests was the fact that many are based on implicit, *a priori* theories of social behavior and, almost universally, on the assumption that there is a unidimensional evaluative component of social behavior. The study by Triandus, which more or less destroyed this assumption, also suggests an entirely new approach to the study of decision making in social situations.

Triandus[11] objected to Bogardus' Social Distance Scale on the ground that it is not unidimensional. A list of "socially significant behaviors" mentioned in American novels written after 1850 was compiled by Triandus. Then, a pretest was conducted to select those items which discriminated well, had small variances, and were not too similar to one another. The final measure was composed of 61 items of social behavior. Triandus also described 34 hypothetical "stimulus persons" who differed in most combinations of race, sex, occupation, age and religion. Subjects were asked to indicate the likelihood of their participating in 61 different types of social behavior with each of 34 different hypothetical "stimulus persons." Triandus reports the following as a typical item on this "Behavioral Differential":

A 50-year old, Negro, Roman Catholic, physician, male

1   2   3   4   5   6   7   8   9

would: __: __: __: __: __: __: __: __: __: would not

have a cocktail with this person.

When the data were factor-analyzed, five factors appeared. The "Marital" factor contained such items as "I would/would not go on a date with ...," "I would/would not fall in love with ...," "I would/would not marry. ..." The "Admiration" cluster was composed of items such as "I would/would not admire the character of ... ," "I would/would not believe ... ," "I would/would not admire the ideas of ... ," "I would/would not praise the suggestions of. ..." The "Social Distance" factor included "I would/would not invite to my club ... ," "I would/would not exclude from my neighborhood ... ," "I would/would not accept as close kin by marriage...." "Friendship" included "I would/would not accept as an intimate friend ... ," "I would/would not treat as an equal ... ," "I would/would not eat with ...." "Subordination-Superordination" included

"I would/would-not be commanded by . . . ," "I would/would not elect to political office . . . ," "I would/would not treat as a subordinate . . . ," "I would/would not work for . . . ." A sixth cluster might have been composed of items such as "I would/would not rate favorably on a set of semantic differential scales," had there been any such items.

Triandus' findings are important for they make it obvious why attitude test scores do not correlate with "socially significant behaviors": attitude tests are designed to be unidimensional, while "socially significant behaviors" are multidimensional. More importantly, Triandus' study suggests a new, empirical, inductive approach to the study of the decision process. Note that Triandus factor-analyzed the *behaviors*. However, it would be possible and should be profitable to consider each behavioral response *vis-à-vis* each stimulus person as a separate item of data. For example, for a man to have a cocktail with a 50 year-old male Negro physician would be predictive of different subsequent behaviors than for him to have a cocktail with a 20 year-old Negro female prostitute. Further, it might be profitable to classify the subjects and run a separate factor analysis for each type of *subject*. There is no reason why more conventional attitude test items could not be included in this factor analysis.

Research on the decision process is not going to be very useful until those in the field abandon the unsophisticated and somewhat conceited notion that they can decide on an *a priori* basis which types of behaviors will be mutually predictive. Researchers are going to have to rely on factor analysis to identify clusters of subject-stimulus-behavior relationships. They must discover which behaviors performed by which types of subjects toward which stimuli predict which other behaviors by those subjects toward which other stimuli. These clusters of socially significant behaviors *vis-à-vis* social stimuli may become the modern successor to the primitive myth of attitude. The prospect appears tedious, but it probably would absorb fewer computer hours to find and work with such clusters than have been spent in factor-analyzing semantic differential data.

Intervening Variables

Those variables which customarily are treated as *intervening* are customarily measured and assumed to play some part in the decision process. These variables, now to be considered, are not manipulated nor considered the criterion or output of the decision process.

The "personality" variables fit this definition. In personality research there is desperate need for redefinition, analysis, and synthe-

sis. For example, one only needs to consider the myriad of studies
dealing with *F*-scale authoritarianism, rigidity, dogmatism (open-
and closed-mindedness), cognitive style, cognitive complexity, need
for cognitive clarity, tolerance for ambiguity, and tolerance for dis-
sonance. Even the experts cannot tell one from another without a
program. One psychologist recently played the factor analysis parlor
game with a number of tests designed to measure cognitive style and
complexity. He discovered that most of them were multidimensional
and that they had many overlapping factors.[12] There is similar
confusion among measures of conformity, anti-conformity, inde-
pendence, yielding, general persuasibility, attitude instability,
acquiescence, and agreement-response set. Throw in the need for
achievement, aggressiveness, self-esteem, need for affiliation, and
social desirability and one has a veritable smorgasbord from which
Ph.D. candidates can choose at random variables to complicate their
dissertations. The "Order of McLuhan" certainly will go to the in-
dividual who can produce order out of this c'.. os. However, some
will not compete for the honor because this sort of research has
been rather disappointing; these variables do not seem to account
for any considerable proportion of the variance in decision behavior.
Even if they did, it is only occasionally that the communicator finds
himself in a group with identifiable personality types.

Variables such as these should be investigated in such a way that
the research would reveal something about their etiology and their
interactions with communication and the decision process. Scheidel's
summary of the research on sex and persuasibility is important not
so much because it concludes that males and females differ in their
responses to persuasion, but rather because the research provided
the investigator with some clues about *why* their responses differ.[13]
Research seems to indicate that individuals for whom "aggressive-
ness" is a personality trait are difficult to persuade while individuals
rendered "aggressive" temporarily—by being frustrated—are easy
to persuade. Some explanation of why this strange relationship exists
and how it develops probably would contribute more to current
knowledge of the decision process than a raft of personality-per-
suasibility correlations.

The prior "attitudes" and "beliefs" of those involved in decision
processes have been studied extensively, usually to determine how
they affect other intervening variables such as the individual's will-
ingness to expose himself to new information, his attention to new
information, and his perception and recollection of that informa-
tion. The clearest implication for research in the decision process
is that one can seldom afford to ignore the possibility of interaction

between the prior opinions of the subjects and the independent variables being manipulated. However, there are difficulties in using prior attitudes and beliefs as intervening variables; one must contend with regression effects, scale end effects, and the apparent tenacity of extreme opinions. In experiments in which these effects may constitute problems, it is possible to use designs which take the effects into account. A trend analysis (in which pre-test, post-test, and delayed post-test constitute one dimension of the design) will sometimes solve the problem. Analysis of covariance is the solution in other cases. Another possibility is something similar to the Autonomic Lability Score which Lacey has devised to correct an individual's autonomic response score when under stress according to his pre-stress score.[14]

Thus far most researchers have been content to demonstrate that it is difficult to achieve consensus in a decision-making group when the members of that group are committed to disparate opinions. If those studying communication would try now to devise ways of overcoming the commitment effect so that decisions could be made on more rational grounds, it would be possible to contribute some really practical knowledge. For example, President Johnson's present devotion to escalating the war in Vietnam may be due at least partially to the fact that he feels he has *committed* himself and the United States "in the eyes of the world." If specialists in communication could devise a means by which he could "decommit" himself or a means of avoiding commitment in the future, they would perform an invaluable service and their corporate image probably would not be tarnished too badly as a result of meddling in such practical affairs.

The amount of *attention* participants in the decision process direct to relevant communications is an intervening variable which needs much more study. While those studying communication need to determine how attention may be attracted, the major problem at the moment seems to be discovering a measure of attention which is independent of retention. Buttons, switches, and checks on paper are hardly satisfactory. They are beautiful illustrations of the Heisenberg Uncertainty Principle: the very process of observation distorts the phenomenon observed. When an individual is engrossed completely in a communication he is likely to forget about buttons and switches altogether; when the communication loses his attention he may come back to earth long enough to flip the switch. Again, to mention a few possible measures of attention may stimulate others. Hess[15] has reported that an increase in the size of pupillary openings is an indication of favorable attitude, but others have reported

it is instead an indication of increased attention and interest. It now is possible to determine by photography not only the pupil's size for an individual but also the spot on which his gaze is focused at any given time. Both these developments should be of considerable interest to those interested in communication and the decision process. Lacey's work with heartrate probably is less well-known, but it seems equally important. Briefly, it appears that decreases in heartrate facilitate reception of external stimulation, while cardiac acceleration facilitates exclusion of external stimulation and concentration on mental tasks.[16] Thus, an individual's heartrate appears to be a rather good indication of the extent to which he is attending to a communication. The electroencephalogram (EEG) offers another possibility. It has been known for some time that the presence of high-frequency desynchronous activity in the EEG is a clear, though rather gross, measure of alertness.[17] However, it is of more interest that an individual watching a light flickering at a rate from one to about four times the rate of critical fusion will develop a predominance of electrical activity in the visual cortex at exactly the frequency of the light's flicker.[18] A motion picture projector produces just such a flickering light on the screen. This suggests the possibility of using the proportion of "frequency-specific response" in the visual cortex as a measure of attention to a film.

These ideas happen to come from a field with which the writer is especially familiar. Others undoubtedly have better suggestions from other areas. It *is* important to find a good independent measure of attention. For example, one fairly recent experiment has demonstrated that an aural message may be more persuasive in the presence of a "distracting" visual presentation.[19] However, with no independent measure of attention, there was no really effective way of establishing that subjects actually were distracted.

Another intervening variable which has not received much attention is the *level of activation* of the subject. The results of experiments on "fear appeals," frustration, and induced anxiety strongly suggest that increased activation (or drive) may accompany increased susceptibility to persuasion up to a point, after which increased activation interferes with persuasibility. However, to establish this clearly there must be some way of manipulating activation level more precisely without inducing confounding "emotional" states. One possibility is to administer amphetamine, chlorpromazine, and placebo to different groups of subjects and then expose them to different types of communications or present them with problem situations in which decisions must be made. Another question that will require imaginative research is: what happens to persuasibility and

decision behavior under conditions of extreme boredom or "sensory deprivation"? One of the few experiments in this area has demonstrated that subjects will change their opinions under conditions of sensory deprivation with no reinforcement other than the opportunity to listen to another persuasive message.[20] If such research is not socially significant to anyone else, it seems likely the Central Intelligence Agency and the United States Information Agency would be interested.

Independent Variables

Finally, the variables customarily manipulated and studied as *independent* variables need to be considered.

The effects of the opinions of others have been studied by those who claimed to be dealing with "reference groups" or "small group processes" as well as by those who claimed to be experimenting with "ethos" or "source credibility." As a result of all this one knows that a reference group is not more effective in influencing its members' behavior just because it is large, but it is more influential to the extent that it gives the appearance of consensus, that an individual likes the other members, that the individual respects the opinions of the other members, that the individual values his membership, that the listener has power and "idiosyncrasy credits" within the group and that the individual's membership is salient. One knows also that a speaker may be influential to the extent that he is well-liked, perceived as expert, considered trustworthy, apparently dynamic, and perceived to be similar to the listener on almost any conceivable dimension. A fair amount is known about the characteristics which experimental subjects perceive influential groups and speakers to have, but much less is known about how subjects can be made to perceive groups and speakers as having those characteristics. Much is known about the dimensions of "ethos," but the experimental research has not produced many practical suggestions as to how a speaker can make himself influential or how the decision-maker can avoid being influenced by irrelevant characteristics of the source.

In the process of deliberation that precedes decision, two major questions are at issue. (1) What goals do we wish to achieve? (2) Which of the available alternatives will most likely achieve those goals? Some intensive research is needed to determine how individuals faced with a decision proceed to answer each of those questions.

Of course, one cannot determine the *specific* goals individuals will select; that must wait until the specific decision is known. However,

one can begin to determine how goals are selected and one can determine some general goals of various types of subjects in various situations. For example, the research on fear appeals has provided some ideas about the extent to which the avoidance of pain constitutes a goal for some types of subjects and about the extent to which that goal can be used in a communication to motivate listeners. Other research has investigated the efficacy of appeals to sympathy, social responsibility or reciprocity, guilt, threat of punishment, personal freedom or self-determination, competition, aggressiveness, and ego-satisfaction. For the most part, these studies have been inadequate, but it should be possible to do with these other goals what the fear-appeal experimenters did with avoidance of pain.

There is a large body of literature bearing on the question of how individuals decide what actions probably will lead to the goals they desire. Unfortunately, most of it just leads to the conclusion that individuals accept or reject such propositions partially on the basis of objective judgment as to the probable truth of the propositions, but largely on the basis of the extent to which the proposition would be desirable if true. There is no need to prove over and over again the basic finding of social psychology: "people are no damn good." What is needed is an attempt to discover the optimum conditions for objective decisions, so that specialists in communication can assume a more useful role. Researchers must learn how to improve the chances that those responsible for decisions will make them objectively.

Research on the timing and ordering of persuasive communications has been disconcerting. With regard to the ordering of material within a single communication, the most general finding seems to be that one ordering is not much more effective than the other—except that an audience apparently expects to be informed of the existence of a problem before they hear the description of its solution. Moreover, while research on ordering individual communications in relation to one another has also been generally disappointing, something worth pursuing has been revealed. The disappointing research has concerned "primacy-recency" and "delay effects." Most of those doing such research seem to have viewed communicative experience as the product of one or two unique, single-shot, unidirectional events rather than of an interaction of messages culminating eventually in a decision. One hardly is studying communication in the decision *process* when he fires one message and then studies its echoes until they eventually die out. Communication on a given issue usually leads to something, be it a decision or a stalemate. Communication specialists need to abandon the posture of looking over

the shoulder of a single speaker as he fires a message at an audience. The concept of "feedback" and Bauer's[21] description of the "obstinate audience" have helped somewhat, but even those approaches have not reduced much the undue fascination with the single speaker-audience situation. In most decision situations, most participants function as sources and receivers in rapid sequence. For example, Tannenbaum's[22] recent work has indicated that he is becoming more concerned with the process by which sources develop public images through interaction with a variety of messages and concepts, rather than the fusion of a single source and a single message by a single assertion. McGuire's work with prior refutation and "innoculation"[23] has become steadily more sophisticated and "process-oriented," leading to the most recent discovery that individuals begin to change their opinions in such a way as to reduce conflict with an anticipated message.[24] Becker[25] has proposed a model of the decision process in which he has tried to make provision for a number of factors not included in most models and, of greatest importance, has emphasized the repetitive, reiterative, reverberating, circuit-like quality of the decision process. Another hopeful sign is a model proposed by Barry Fulton, who received his Ph.D. last year from the Division of Communications at the University of Illinois. Fulton devised a cybernetic model of the decision process which pictures the individual operating as a homeostatic, constantly corrective mechanism. He tested that model using a limited number of variables, and successfully defended both the model and his results in committee to the satisfaction of Ashby himself. The writer of this paper has attempted to combine the Toulmin model of argument and the earlier description of the persuasion paradigm into an algebraic model which, while somewhat complicated, seems to provide a framework for representing the interactions of the decision process.[26] Finally, there should be considerable interest in the results of an approach Scheidel is using presently, in which he is treating group interaction as a stochastic process, attempting to determine the probabilities of various interactions depending upon those which have occurred previously. There is no reason to let Scheidel monopolize that approach; it holds promise for the study of the decision process on a larger scale. Holder and Ehling have, in fact, begun work on a model of this sort.[27] The decision process is extremely complex and a model which adequately represents that process is going to be complex. Once a satisfactory model is available certain parts of it may be isolated for intensive study, but too much research to date has been unproductive because it ignored the complex interactions and the dynamic nature of communicative phenomena.

A brief word is needed regarding language as an independent vari-

able in decision research. Certainly research is needed to determine how ambiguity can be eliminated and clarity achieved; there is little doubt that failure to reach decisions is attributable often to mi understanding. However, this is a problem in communication in general and will probably be covered in other discussions. The work Bowers[28] has begun, to determine the linguistic correlates of perceived language intensity and the effects of language intensity, seems to have specific relevance to decision research. Helen Franzwa has carried this research a little further in two respects: (1) the effects of words which differed on the evaluative as well as the potency-activity dimensions of Osgood's semantic differential were tested; (2) an investigation of the factors which cause speakers to *choose* language of different "intensity" on those dimensions is underway. Again, this approach seems to be a step forward because it recognizes that language (as well as other variables) affects and is affected by the *process* of communication directed toward decision. Similar research is needed to investigate the components or characteristics of *aesthetic* language, and the effects of different levels of such language.

Implications for Academic Programs

The last objective of this paper is to consider the types of academic programs which may be required in order to follow the new directions in decision research. Flexibility will mark successful programs. As already noted, some must be trained to *translate* and *apply* the findings of research on communication as it grows more esoteric and specialized. The academic programs of these persons will differ from the programs of students interested primarily in research *per se*. Furthermore, as others in the field of speech recognize the importance of behavioral research in communication, there will be increasing demand for minimal programs introducing empirical methods and findings to students not devoted primarily to behavioral-experimental study. It is also likely that there will be others trained in the traditional methodologies of rhetorical theory and public address who will be alert to new developments and seek programs designed to give them a basic understanding of findings and methods from empirical research in communicat. There is no need for a litmus test to determine those who are le han totally devoted to empirical-experimental study, but some o. the specialized courses inflicted on students who concentrate on this approach may inadvertently serve that function in that they constitute a formidable

barrier to those lacking training in the behavioral sciences. Scholars of the sort represented at this conference must be prepared to serve the non-specialists with courses surveying the literature of behavioral-experimental research and introducing basic concepts in statistics and experimental design.

In educating those who intend to produce original research, however, it will be necessary to build *specialists*. Most teachers would like to create students in their own images: certainly this writer will confess to that conceit. Nevertheless, educators are going to have to face the fact that some students of speech-communication have had more rhetorical theory and public address than they need. Rhetorical theory and public address can be areas from which to borrow knowledge, but a Ph.D. candidate simply cannot expect to be a fully competent rhetorician, historian of public address, and have an adequate knowledge of statistics, psychology, sociology, linguistics, psycholinguistics, and communication theory to establish him as a competent behavioral-experimental investigator of speech-communication. For those who will produce original research of the last sort, some courses in rhetorical theory and public address probably must be sacrificed to enable candidates to put together the specialized programs which may, ultimately, draw on disciplines never before considered related to the study of communication. It sounds a little strange to call for *specialization* and an *interdisciplinary approach* at the same time, but that is exactly what is needed. Moreover, there must be a few core courses that are uniquely courses in *communication* in order to give students in the area a sense of identity.

Another paper in this series will deal with new approaches to methodology, but there is one point which must appear obvious from the foregoing recommendations: the traditional, static, experimental designs will be replaced gradually by new process-oriented statistics and designs. Multivariate analysis, panel analysis, trend analysis, analysis of covariance, and factor analysis already are coming into widespread use. Information theory, under the more appropriate title of "uncertainty analysis," is likely to become especially appropriate to and useful in the field of research on communication, not as a means of quantifying information flow but as a statistical tool.

Finally, special attention must be paid to instilling in students a delicate combination of healthy scepticism and operational orientation with imagination and analytic ability. There is an impressive statement by Bronowski that "an innovation in [science or art] occurs only when a single mind perceives in disorder a deep new

unity."[29] It can be added that innovation occurs also when a single mind perceives in unity a deep new disorder. Progress in science is a process of alternating and concurrent analysis and synthesis, and students must be trained to do these tasks. On the other hand, they must be trained to be suspicious of theories which are *too* imaginative, which use hypothetical constructs incapable of operational definition. Judicious application of Occam's. Razor would have prevented a great deal of dissonance in the past and may prevent a great deal in the future.

Conclusion

Two general suggestions have been elaborated as specifically as seems feasible in a paper of this scope—that research must be relevant to communication problems of a real society and that the results of research must be communicated to those who can use them. It has been suggested that those interested in communication and the decision process: (1) must train translators and specialists in communication to transmit and use the findings; (2) must use socially significant behaviors as dependent variables whenever that is practical, and when that is impractical must use substitute behaviors which have been *demonstrated* to be correlated highly with the behaviors with which investigators are concerned; (3) must find out *why* cert..m uemographic variables are related to decision behavior and *how those relationships develop* rather than merely fish for new relationships; (4) must devise new ways to avoid confounding regression effects, scale end effects, and tenacity of extreme attitudes when doing research on the effects of prior attitudes and beliefs; (5) must find ways to avoid the commitment effect, ceasing to belabor the proposition that there is such an effect; (6) must devise independent measures of attention to a communication; (7) must find new means of investigating the relationships among alertness, arousal, stimulus deprivation and decision behavior; (8) must produce more practical suggestions about how the decision maker can avoid irrelevant influences of speakers; (9) must determine the types of goals individuals choose, how they choose them, the relative success of choices and special considerations which may apply in appeals to each type; (10) must go beyond proving that individuals usually do not make objective decisions and try to determine the optimal conditions for objective decisions; (11) must study communication as a complex process of interactions among messages and other variables, instead of being satisfied to add a feedback loop

to a model of communication; (12) must intensify research into the effects of evaluative, potent, active, and aesthetic language as a part of communication in the decision process; (13) must develop flexible graduate programs capable of (a) providing a minimum of necessary knowledge to those not interested primarily in the behavioral approach to communication, yet (b) allowing the student who wants to *do* research on communication and the decision process the latitude to range far afield to find the unique interdisciplinary combination in which he wishes to specialize; (14) must expand methodology to include new, process-oriented statistical treatments; (15) must teach students the processes of operational definition, analysis and synthesis.

Obviously, many major needs in decision research have been missed, as have many possible solutions to those needs. The purpose of this paper is primarily to stimulate new ideas. If that purpose is accomplished the ideas presented here will be a minute fraction of those generated. Instead of concluding this paper, it seems best to propose it as an introduction to the really important task which must begin now. It is the hope of the writer that his inconsequential stimulus will be buried in an avalanche of imaginative and useful responses.

NOTES

1. Malcolm X, Speech delivered before a public rally at Manhattan Center in New York City, December 1, 1963; "God's Judgment of White America," *Evergreen Review*, XI (December 1967), p. 57.

2. LeRoi Jones, "Black People," *Evergreen Review*, XI (December 1967), p. 49.

3. Leon Festinger, "Behavioral Support for Opinion Change," *Public Opinion Quarterly*, XXVIII (Fall 1964), 404-417.

4. Milton Rokeach, "Attitude Change and Behavioral Change," *Public Opinion Quarterly*, XXX (Winter 1966-1967), 529-550.

5. Martin Fishbein, "Attitude and the Prediction of Behavior," in *Readings in Attitude Theory and Measurement*, ed. Martin Fishbein (New York: John Wiley and Sons, Incorporated, 1967), pp. 477-492.

6. Gerald R. Miller, "A Crucial Problem in Attitude Research," *Quarterly Journal of Speech*, LIII (October 1967), 235-240.

7. Samuel Becker, "New Approaches to Audience Analysis," Paper presented at the University of Wisconsin, November, 1967.

8. Gerald R. Miller, "Developing New Measures of Attitude and Inconsistency Arousal," Paper presented at the Speech Association of America's Convention, Los Angeles, December, 1967.

9. Roger Brown, *Social Psychology* (New York: Free Press, 1965), p. 572.

10. Miller, "Developing New Measures of Attitude and Inconsistency Arousal."

11. Harry C. Triandus, "Exploratory Factor Analyses of the Behavioral Component of Social Attitudes," *Journal of Abnormal and Social Psychology*, LXVIII (April 1964), 420-430.

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13. Thomas M. Scheidel. "Sex and Persuasibility.". *Speech Monographs*. XXX (November 1963). 353-358.

14. John I. Lacey. "The Evaluation of Autonomic Responses: Toward a General Solution." *Annals of the New York Academy of Sciences*. LXVII (November 1956). 125-163.

15. Eckhart H. Hess. "Attitude and Pupil Size." *Scientific American*. CCXII (April 1965). 46-65.

16. John I. Lacey. *et al.*. "The Visceral Level: Situational Determinants and Behavioral Correlates of Autonomic Response Patterns." in *Expression of the Emotions in Man*. ed. Peter H. Knapp (New York: International Universities. 1963). pp. 161-196.

17. For a recent review of the research relevant to EEG desynchronization and alertness. see Sebastian Peter Grossman. *A Textbook of Physiological Psychology* (New York: John Wiley and Sons. Incorporated. 1967). pp. 642-645.

18. This phenomenon of "photic driving" has been used in a number of studies of conditioning. and is hypothesized to constitute not only an index of attention to a stimulus. but also a "neural memory trace" of that stimulus within the central nervous system. See. in particular: F. Morrell and H. H. Jasper. "Electrographic Studies of the Function of Temporary Connections in the Brain." *Electroencephalography and Clinical Neurophysiology*. VIII (May 1956). 201-215: and E. R. John and K. F. Killam. "Electrophysiological Correlates of Avoidance Conditioning in the Cat." *Journal of Pharmacological and Experimental Therapeutics*. CXXV (March 1959). 252-274.

19. Leon Festinger and Nathan Maccoby. "On Resistance to Persuasive Communications." *Journal of Abnormal and Social Psychology*. LXVIII (April 1964). 359-366.

20. Peter Suedfeld and Jack Vernon. "Attitude Manipulation in Restricted Environments: II. Conceptual Structure and Internalization of Propoganda Received as a Reward for Compliance." *Journal of Personality and Social Psychology*. III (May 1966). 586-589.

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22. Percy H. Tannenbaum and Roy W. Gengel. "Generalization of Attitude Change through Congruity Principle Relationships." *Journal of Personality and Social Psychology*. III (March 1966). 299-304; and Percy H. Tannenbaum. "Medicated Generalization of Attitude Change via the Principle of Congruity." *Journal of Personality and Social Psychology*. III (May 1966). 493-499.

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24. William J. McGuire and Susan Millman. "Anticipatory Belief Lowering Following Forewarning of a Persuasive Attack." *Journal of Personality and Social Psychology*. II (October 1965). 471-479.

25. Becker.

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26. Gary L. Cronkhite. *Persuasion: Speech and Behavioral Change* (Indianapolis: Bobbs-Merrill Company. Incorporated, in press). Chapter 4.
27. Harold D. Holder and William P. Ehling. "Construction and Simulation of an Information-Decision Model," *Journal of Communication*, XVII (December 1967), 302-315.
28. John Waite Bowers, "Language Intensity. Social Introversion, and Attitude Change," *Speech Monographs*, XXX (November 1963), 345-352.
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A Response to Gary L. Cronkhite's
"Out of the Ivory Palaces: A Proposal for Useful Research in Communication and Decision"

FRANKLYN S. HAIMAN

The first five pages of Cronkhite's paper urge the conference to make itself and the research ideas generated from it relevant to contemporary society's needs. Did the rhetoric of the first few pages arouse attention, stroke prejudices, and render conferees receptive for what was to follow? It is only after some reflection that one may remember (and not unkindly) that this song has been heard before. This should not invalidate the message, but it does suggest that there may be some problems in its implementation—else the implementation happily would have occurred long ago.

Other scholars (if not members of the same immediate academic family) some years ago heeded the call that Cronkhite has now reissued relative to decision making; they were the disciples of Kurt Lewin and his action-research philosophy. Perhaps something can be learned from their experience. First, one might learn that the action-researcher opens himself to a great measure of suspicion (perhaps, to some extent, well-founded) that his objectivity and purity as a research scholar have become contaminated by his involvement with the world of practical affairs. Second, the game of shifting roles from that of detached scholar to that of concerned prescriptivist is about as comfortable as walking a tightrope. Third, if one's primary goal is upward mobility in the academic hierarchy, this is not the easiest or surest route. (This is not to suggest that upward mobility should be one's primary goal, but simply that there may be a price to pay for one's principles so long as academia remains as it is.) Last, communicating one's expertise to the worldly

community in such a way as to make any impact on practice poses an even larger problem in source credibility for the action-researcher than that of maintaining *ethos* among his more disengaged colleagues.

Charles Osgood, with the considerable weight of the presidency of the American Psychological Association to his credit, had little influence on the conduct of foreign policy with his widely communicated psychological analysis and prescriptions for the de-escalation of international tensions. The possibilities of success seem meager for those with fewer credentials. Perhaps the most relevant contemporary problem to which speech-communication specialists can contribute is not the discovery of new knowledge about decision making, but the discovery of new and more effective means of communicating what is known already to those who influence or control the nation's destiny. There, alone, is a sizeable task for concentrated research, and one that well might merit scholars' highest priority.

With these preliminary remarks about the general tone of Cronkhite's paper, this response next will focus on some specifics about which this respondent and Cronkhite are in agreement.

First, the suggestion that provisions for internships or apprenticeships in a variety of social action or social change institutions be built into speech-communication graduate programs seems to be an eminently sensible proposal.

Second, widespread awareness and acceptance of Cronkhite's thesis that socially significant behaviors are usually multidimensional and nonverbal (the latter being extrapolated from what he said about the inadequacies of paper-and-pencil tests) would improve the, field's research efforts a thousand-fold. This need not contradict the conference's proposal that the research focus in speech-communication should be on situations in which verbal communication takes place, for more use can still be made of nonverbal behavior as a dependent variable.

Third, the suggestion of video-taped attitude tests patterned after CBS' National Driver's Test is a notion that seems worthy of further exploration.

Fourth, there is clearly a "need to abandon the posture of looking over the shoulder of a single speaker as he fires a message at an audience," and to accept more fully all the implications of the proposition: "In most decision situations, most participants function as sources and receivers in rapid sequence."

Fifth, and again with respect to graduate training, it was pleasing and amazing to read Cronkhite's call both for specialization and for an interdisciplinary approach. This call was pleasing because it

struck a highly sympathetic chord; it was amazing because this paradoxical proposal is identical to a view which a social psychologist at Northwestern University, Donald Campbell, has been propounding for some time. Campbell's notion is that scholars need to break from the bind in which all departments find themselves (i.e., requiring a common core of material for a major in psychology or speech or sociology) and let students operate on the fringes of these departments with a strong interdisciplinary flavor to their programs. Such students should not be expected to pass the same kind of qualifying examination that everybody else in a given department passes. Campbell also would like to see the day when it is no longer necessary to feel guilty at cocktail parties because one is not conversant with the same journals that fellow psychologists read; instead, it would be a mark of a mature scholar if one were familiar with journals different from those colleagues read. If each man in a given department reads different journals, scholars might have more to learn from one another.

Now, a few small bones require picking. First, the suggestion that speech-communication scholars might start a new journal which prints articles focusing on practical applications does not excite this respondent. The prospects are not encouraging that material of stature would be submitted to such a journal. However, a more important consideration is the assertion made earlier in these remarks: how best to communicate knowledge to the public has not been established; until this is done scholars should hesitate to undertake any such potentially ill-fated ventures.

Second, with respect to the problem of measuring the motivational strength of attitudes, Cronkhite suggests one might be naive or gross enough to ask a subject directly such questions as "How certain are you of your responses?" Hopefully, some better alternatives can be found.

Third, Cronkhite was perhaps too harsh on the research in decision-making behavior that has dealt with the intervening variables of personality. While the rigor of the particular definitions or measures of the personality variables that commonly have been employed (for example, the F Scale and Dogmatism Scale) cannot be defended enthusiastically, surely some creative work has been done here. This particular line of research does not stand out especially as one that has been disappointing.

Fourth, it is not clear how the physiological measures of attention (aside from observing pupillary dilation as Cronkhite proposes) such as heartrate and electroencephalograms avoid the error against which researchers are wisely cautioned (i.e., observers' distortion of the

phenomenon observed). Is there any way of measuring heartrate, GSR, etc., without the subject's awareness that measures are being taken?

Last, if as much has been learned about the dimensions of *ethos* as Cronkhite indicates, then how could one fail to infer practical suggestions from that research as to how a speaker can make himself more influential—a matter about which Cronkhite says little is known?

It might be appropriate to conclude with a gen :ral comment that was stimulated as a result of thè papers by Cronkhite, Clevenger, and Miller. It is, indeed, important that more unobtrusive ways be found to measure social behavior, that contamination of research results with experimental effects be avoided, and that speech-communication research efforts become more relevant to the real problems of contemporary society. Therefore, it seems a matter of the highest priority to shift a major share of scholars' efforts toward field research —which is much discussed today, even among the former true believers in the experimental method.

A Response to Gary L. Cronkhite's
"Out of the Ivory Palaces: A Proposal for Useful Research in Communication and Decision"

STANLEY F. PAULSON

Cronkhite strikes a nerve when indicating that the time has come to make speech-communication research relevant to real "communicative problems of a real society." Outside of speech and hearing therapy, the field chiefly has been studying communication of the middle class—faithfully studying it while communicative crises have risen to a roar in the streets. Black-white tensions may be rising so fast that speech scholars' effectiveness in research or instruction in the ghetto becomes questionable. Perhaps the most direct approach to change in the speech-communication field may be the recruiting of graduate students from cultural sub-groups now conspicuously unrepresented in many of the field's academic departments.

Most scholars would agree readily that speech-communication research needs public exposure. However, if a "popular" publication were launched, it probably would be read only by the same faithful band already reached through the more scholarly journals. To speak to the larger audience, national magazines would be the better forum. For example, the *Saturday Review* with its "Communications" section would be hospitable to relevant research and analyses of current crises. Of course, editors of such national magazines would make the judgment as to relevance and importance, but that judgment probably should be made by someone outside the field. Intriguing as the suggestion of specially trained disseminators is, what is to prevent communication scholars themselves from writing for the public periodicals as colleagues in other disciplines are doing

already? Cronkhite, as his paper indicates, could do it, and he would not bore anybody.

As the paper moved to the discussion of research in decision processes, a definition of what was meant by "decision" or "decision making" was expected. Since none appeared, one could only infer from the excellent examination of dependent variables what it might be; apparently, a *decision* refers to a change in response of a given magnitude on a measure of a dependent variable. If that measure is an overt act (e.g., getting a chest x-ray, buying a toothbrush, or going to vote), the outcome is clearly a decision—perhaps even a socially relevant one. Conversely, if the measure is a substitute behavior (e.g., a pencil-and-paper test), the question of the amount of change in the behavior to be considered a "decision" is a relevant concern. The use of inferential statistics to define whether or not a given magnitude of change is significant, as Clevenger warns in his paper, does not shed much illumination. Cronkhite considers "real-life" changes in behavior to be the outcomes which clearly mark decision making, and this seems reasonable if one can somehow get at the intervening changes between comprehension and action. The mythical beast, "attitude," can be thrown out, but it is still necessary to account for the dynamics of information's becoming action. An information-decision model proposed by Holder and Ehling based upon a mathematical application of Markov chain theory, may shed some light on the process.[1] It was developed following a study of information units which high school students acquired as they were making a decision regarding whether or not to attend college. The simulation is based on probabilities' shifting toward, or away from, decision as favorable and unfavorable information is accumulated. Such an analysis is especially helpful in illuminating the process character of decision making, even though it is limited by its inherent assumptions (e.g., each unit of information is assumed to be equal in its effect on the probability of decision).

In spite of some of their limitations, the pencil-and-paper tests may also shed light on this complicated process.

> There is always a variety of alternative plans that could have led the subject to exhibit the same behavior; the best we can do is to select the simplest one compatible with all the facts. But, because this kind of ambiguity is such a pervasive feature of behavioral analysis, it is important to reduce it as far as possible. In this endeavor, the subject's verbal report has one great recommendation in its favor, because language, for all its notorious shortcomings, is

still the least ambiguous of all the channels open from one human
being to another.[2]

In his examination of measures of dependent and intervening
variables, Cronkhite properly scores the weaknesses they have as pre-
dictors of other behaviors, as unidimensional tests of multi-dimen-
sional factors, as indicators of intensity or amount of information, and
as adequate symbolic representations of behavioral situations. Cron-
khite does not seem to reject their use as much as to suggest that
they are limited in value by their weaknesses, and that they are less
valid as behavioral criteria than socially relevant behaviors which
might be measured unobtrusively. Because Fishbein's scales and
Triandus' instrument open new possibilities for analysis, Cronkhite
suggests their use; similar restructuring of other tests which he re-
gards with suspicion might well be possible.

The use of observable decision-making behaviors as criteria is
properly stressed both for greater applicability to social circum-
stances and more realistic development of theory. Like other dis-
ciplines, speech-communication research now is going to stress field
study. This respondent is in full agreement with this practice. How-
ever, there is a continuing need for laboratory studies, if only because
they are necessary preliminaries to field studies—which are not easy
to arrange and are often costly. More can be done in both kinds of
studies to get at aspects of theory now neglected. For example, while
there is general agreement that the one-shot communication experi-
ment is inadequate, little use has been made of communication series
or even the two-step flow design. Among others, William Stephen-
son[3] insists that interaction among peers in a social group after
hearing a message may be more important to effects of the message
than many characteristics of the message itself. Video-recording of
college peer groups in discussion after hearing a speech could be ar-
ranged, with analysis of this second stage designed to determine
changes attributable to the message, verbal indices of retention and
salience, and subsequent actions. If anyone is concerned that this
moves speech-communication scholars into mass-communication re-
search, the answer must be that the communication process itself
leads there. Most audiences today are not seated in auditoriums lis-
tening to speakers.

Cronkhite's paper seems to indicate that the studies of independent
variables appear less impressive than the work on dependent
variables, whether or not that represents the state of the art. This
commentator supports Gerald Miller's view that the role of message
variables in the communicative transaction is central to research in
this field; the view is one which suggests a priority in research possi-

bilities. In this respect, the work of Bowers' is particularly important. The study of message variables seems to be in its infancy in small-group research. Little is known of the varying kinds of information, evaluative statements, questions, sequences of information, and language intensity—with regard to their influences on outcomes. In their attempt to induce a theory of group process in decision making from empirical studies, Collins and Guetzkow[5] do not mention language; the only study of information effects mentioned is the Cathcart study in a speaker-audience situation. Bales[6] has not moved beyond his categories of expressive behaviors. Message variables in the small group are sorely in need of study. Speech-communication scholars should be in a better position to contribute to *that* study than scholars from any other field.

The many-sided examination of decision processes which Cronkhite has provided will not only strike a nerve here and there; it should stimulate research which penetrates more deeply into the heart of the communication process.

NOTES

1. Harold D. Holder and William P. Ehling, "Construction and Simulation of an Information Decision Model," *Journal of Communication*, XVII (December 1967), 302-315.
2. George A. Miller, Eugene Galanter and Karl Pribram, *Plans and the Structure of Behavior* (New York: Holt, Rinehart and Winston, Incorporated, 1960), p. 194.
3. William Stephenson, *The Play Theory of Mass Communication* (Chicago: University of Chicago Press, 1967), pp. 88-89.
4. John Waite Bowers, "Language Intensity, Social Introversion, and Attitude Change," *Speech Monographs*, XXX (November 1963), 345-352; John Waite Bowers, "Some Correlates of Language Intensity," *Quarterly Journal of Speech*, L (December 1964), 415-420.
5. Barry E. Collins and Harold Guetzkow, *A Social Psychology of Group Processes of Decision Making* (New York: John Wiley and Sons, Incorporated, 1964), p. 39.
6. Bales continues to be interested in the relationships between his types of expressive acts and small-group variables rather than in the message types themselves. See "Diagnostic Use of the Interaction Profile," *Journal of Social Psychology*, LXVII (December 1965), 239-253; and "Seating Position and Small Group Interaction," in *Small Groups: Studies in Social Interaction*, eds. A. Paul Hare, Edgar F. Borgatta, and Robert F. Bales (New York: Alfred A. Knopf, 1966), pp. 427-433.

CHAPTER SIX

Research Methodologies in Speech-Communication

THEODORE CLEVENGER, JR.

Introduction

The length assigned to this paper does not permit an examination
of all possibilities inherent in the topic. Therefore, the paper will not
attempt a critical analysis of every phase of what might be called
"methodology" of research in every branch of "speech-communica-
tion." Instead, special priority in consideration will be given to those
questions that contribute most directly and significantly to the *de-
velopment* of research in speech-communication. This implies that
priority should be given to *basic* questions, since presumably greater
benefits will flow from solutions to these problems than from solutions
to more superficial ones. Ai), priority will be given to *questions
whose answers lie more or less at hand,* since these represent the
most immediate developmental opportunities. Finally, attention will
be focused *on questions of future behavior* rather than on pre-
vious efforts, since in the context of a developing field of study the
past is useful primarily as a springboard into the future.

Theory and Research

Why do research? In a colloquium making provision for so few
papers, why devote one entire presentation to research methodology,
a topic that in itself contributes nothing substantively to an under-
standing of speech, communication, or the conjunction of the two?
One answer, of course, could be given on purely pragmatic grounds:
research today is the primary means of personal advancement

through the academic ranks and the most reliable index to the status and respectability of a discipline or department. Scholars need to do research (or to pretend to do it) for this practical reason if for no other.

Surely it will not be thought unkind to observe that much research in speech-communication (as in most of the other social and behavioral sciences) seems traceable to this single motivation. Fortunately, the rules of the game with regard to publication force these studies into a format that renders them potentially useful, so that even from the opportunist a contribution is extracted *en route*. as it were, to the reinforcement sought. But such studies, conducted piecemeal for their own sakes and presented as isolated set-pieces in the journals, do little toward the immediate development of speech-communication as a discipline. They create the illusion of progress without providing the solid underpinnings that all real development requires.

For purposes of further discussion, consider the following hypothesis: *That research which is most instrumental to the development of an intellectual discipline is conducted within the context of theory development.* Just what is meant by "the context of theory development" will be seen shortly; but some examples of the kinds of research this hypothesis excludes will be considered first. In en - merating these examples, there is no intent to imply that they do not represent useful kinds of research, or that they should not be done. The contention is simply that their contributions to the development of the discipline are either small or indirect.

Much research goes into the creation of standardized tests of individual traits, aptitudes and achievements, to be used as aids in school admission, job selection, and placement in or exemption from special programs of therapy or training.[1] To develop tests of this kind calls for theoretical knowledge as well as research expertise; the ability of a discipline to generate such tests is one measure of its maturity. However, unless the effort to build such an instrument runs into unexpected theoretical problems, such research has no feedback effect on the discipline itself. In ʳ very important sense, then, the more successful the effort is to develop a measuring instrument for some practical purpose, the less such an effort contributes to the field of study out of which it grew.

The same may be said for the great majority of pedagogical experiments, especially those comparing one method of training or instruction with another. Because there is a need to know better how to teach, such experiments must be done; but researchers should not delude themselves into believing that such studies contribute very

much to an understanding of speech-communication, *especially when experiments are successful*. Consider, for instance, the experiment by Cobin and Clevenger that compared mass, televised lectures with typical small-class instructional procedures in a course in oral interpretation, using small-section instructors of varying levels of training and experience. A test over the substantive content of the course showed that when compared to sections taught by highly trained and experienced instructors, the televised lectures offered no advantage: whereas they offered a substantial advantage · hen · compared to sections taught by inexperienced graduate students.[2] To any department contemplating the changeover to instruction by television in the basic oral interpretation course, these results are important: but to the extent that they contribute to theory at all. they bear more upon the theory of pedagogy than upon any theory of speech-communication. To be sure, one might be led by these results to speculate on certain broad principles of face-to-face interaction. However, the connection is nebulous and the route from this experiment to theory in speech-communication is tortuous and indirect.

A third kind of research that contributes little to theory is the experimental test of an isolated hypothesis. Such studies, once characterized by Halbert Gulley as "fishing expeditions," abound in the literature of this field. Are men less persuasible than women? Will an inductively-organized speech convey more information than a deductively-organized one? Is emotional language more persuasive than rational language? Experimental tests of hypotheses such as these make interesting reading and good material for a Sunday supplement; but from the standpoint of advancing the discipline, they are much less valuable than the questions to which they lead. Assuming that an hypothesis such as one of these is true (or false), what then? That women are more persuasible than men (if they are) is much less interesting and incomparably less profitable from a theoretical point of view than the reasons behind such a difference. Before conducting experiments on the differentia, effectiveness of various forms of organization; one well might devote some thought to the implications of such differences: if they exist, what mechanism could possibly account for them? Such purely theoretical inquiry might lead to questions more basic and hypotheses more powerful than those originally proposed: even if they did not, they would create a context of relevance for the hypotheses in question.

Why should a high priority be assigned to research that *does* make a contribution to theory? The answer is, because a field of study waxes or wanes, prospers or languishes, according to the strength of its theory. In this sense, "theory" does not refer exclusively to the

sort of formal propositions that characterize nuclear physics, but more broadly to any organized set of interrelated statements based on a coherent and reasonably well-understood set of concepts serving as central focus to a field of study.[3] Any area of inquiry that aspires to disciplinary status must address at least a portion of its effort to generating such a set of statements. In a developing field, research devoted to this end represents capital investment. Because the nascent discipline of speech-communication is so greatly in need of such capital, any discussion of research method must consider certain elementary but absolutely vital problems of theory construction.

To begin, scholars must disabuse themselves of the notion that the only contribution of research to theory is verification. *Verification* of theory, which is presently a very important research contribution in physics, is perhaps the least important function of research in speech-communication given its present state of development. The function of *clarification* is much more important.

Research helps to clarify theory in several ways, the most obvious of which is to subject key concepts to operational tests. One example of this principle in operation is the term "stage fright." Almost a decade ago it was proposed on the basis of research evidence that this term stood in need of replacement. It had represented a single-variable, unitary concept. Efforts were made to operationalize "stage fright" in terms of physiological response, overt behavior, and verbal report. Not only did the three operationalizations fail to correlate well, but extraneous variables seemed to affect them in different ways. It would be comforting to report that the theoretical problems raised by this analysis have been olved; regrettably, in a display of the dilettantism that marks too much research, the author turned his attention elsewhere and has to this day published nothing further on the matter.[4] But even iconoclasm of this sort serves the end of theory development. At least now there is good reason to believe that one of the terms scholars continue to use is ambiguous. An exploration of that ambiguity could well lead research in new and unexpected directions; it could lead to new and better theory.

A second example is the concept of "ethos." Long one of the more difficult concepts of rhetoric, its mysteries grow somewhat less opaque when one asks, "Where do you look for it—in the speaker, in the audience, or in the speech?"[5] The same is true of the concepts "emotional" and "logical" as applied to discourse.[6] In each locus—speaker, speech, audience—a different set of variables and relations is found; so that not only is a relatively obscure concept rendered clearer, but a richer vein of theoretical ore is laid bare.

One final example of conceptual clarification through research is

a key term in many propositions relating to speech-communication: "attitude." After almost half a century of empirical research into attitude formation and change, it has become clear that this omni-ous term covers a very great range of different things. In principle unobservable, a "mythical beast" in Cronkhite's terminology, the attitude is presumably "revealed" or "reflected" in many things: unstructured verbal behavior, responses to structured verbal inventories, nonverbal cues, and overt choice-behavior. But it turns out that each of these domains of behavior is highly sensitive to contextual effects and that they often fail to comport with one another as one might expect. What, then, is the status of "attitude" as a term in theoretical statements? The interconnections among its various facets turn out to be at least as interesting as its relations to other variables.[7]

With regard to these examples of conceptual clarification and consequent development of theory through empirical research two points should be underscored, the first concerning theory and the second concerning method. First, note that conceptual clarification through empirical research exerts a definite bias on theory. Communication theory that is shaped by recourse to observations eventually will become predominantly behavioral and empirical. Concepts that are incompatible with or irrelevant to observations of behavior gradually will be weeded out to be replaced by more exact and specific ideas.[8]

Second, note that the initial steps toward clarification always are made *before* any experiment is performed—namely, locating some way of measuring or identifying the variable representing the concept. Whenever two or more fundamentally different ways of measuring the same variable can be found, one may expect to find some ambiguity in the underlying concept. In some cases data may help to resolve the ambiguity, but in most instances one will be pushed to a conceptual reassessment and to the construction of new or additional theory. Sometimes researchers are capable of seeing that this must be done before any data are in hand. When this is the case, it is wasteful and frivolous to perform experiments before the theoretical problems have been worked out to whatever extent is possible. Of all the principles of research methodology, this is the one that is violated most often in speech-communication research; its regular observance holds the greatest potential for developing the field through research.

The foregoing should illustrate how clarification of concepts contributes to theory development. A second part of theory development

is the specification of relations. and this also is related intimately to research method. For example, consider the problem that confronted Grant Fairbanks and his colleagues and students when they first began to study the comprehensibility of time-compressed speech. They were certain that speech could be compressed in the time domain to the level of total incomprehensibility. Short of the point where basic intelligibility was affected, how would compression increments affect recall of information content? Would comprehension remain constant up to a point, then drop rapidly to the zero level, or would it suffer a small loss with each increment in rate? If diminution of comprehension was gradual, would the decrements be observed along the entire range from the slowest imaginable rates to the fastest, or if not, at what points would they set in? Such questions as these imply a much more detailed analysis of the relationship between two variables than one often observes. In its crudest, least-developed form, the hypothesis under investigation in the experiments by Fairbanks, *et al.*. was, "Time compression reduces the comprehensibility of speech." Fortunately, they set up their experiments so as to explore the *nature* of the relationship in greater detail.[9] In this instance, the investigators proposed a functional relation and designed their experiments so as to get at least some hints regarding the parameters of the function. Such studies are much more useful than the simple-minded binary experiments into which behaviorists so often rush with half-analyzed theory. To ask whether X is greater (in some respect) than Y is only the beginning; ultimately, one cannot avoid asking much more detailed questions about *how* X is related to Y. Investigators could conserve much effort and produce much more significant research by thinking through the possibilities inherent in the relation *before* setting up observational tests.

The same may be said for pre-experimental analysis of possible interactions among independent variables. If, for example, the difficulty level of the material interacts with rate of presentation as it affects information gain, then the nature of the functional relation between rate and comprehension will vary from one difficulty level to another.[10] Now, from a methodological point of view it is crucial to recognize that the possibility of this interaction is not simply another hypothesis to be investigated separately. If it exists, then it will affect the outcome of any experiment performed. If one ignores the difficulty variable, confounding it either systematically or nonsystematically with rate levels, this will introduce "noise," making it impossible to observe any true relation between the other two varia-

bles. If, on the other hand, one controls it at a certain level, any functional relation observed between the other two variables will be an artifact of the particular difficulty level chosen.

Clearly the point to be observed here is that possible interactions should be contemplated *before* an experiment is performed, not introduced as belated explanations for confusing or unanticipated results—as is sometimes done (particularly in attitude-change studies). The interaction potential is there from the moment the experiment is first conceived; it requires no data to elucidate the possibility, since the *question* of interactions is essentially theoretical, not empirical. If the researcher's eye is fixed firmly on the theoretical context of his observational test, he will analyze in advance for potential interactions and either design his experiment to control the interactions in accepable ways or build suitable tests for them into the experiment. Then, there will be no embarrassing necessity to claim (*post-hoc*) that the results might have been different if only such-and-such a variable had been controlled or set at a different level. Any study that relies on such a claim makes a shaky contribution at best.

To recapitulate what has been said about the relation of theory to research method, it has been argued that the development of theory should be given a high priority among objectives, being the principal agency of disciplinary development at this time. From this it follows that theory-oriented research should receive heavy emphasis. Such research may be expected to bias theory in the direction of behavioral and empirical propositions. Its primary value at this point in the field's growth probably will be clarification rather than verification of theory. It will achieve this end by forcing reassessment of key terms, leading in many cases to their replacement with more detailed and precise concepts. Research in turn will benefit from more specific and complete theoretical statements, particularly with regard to functional relations between pairs of variables, and with regard to interactions among independent variables, both of which need to be spelled out in greater detail than now is commonly done. It has been argued that these considerations are not extraneous to methodology as is often supposed, but constitute a most vital aspect of research method that demands early and constant attention in research design.

Though discussion next focuses on issues that are usually associated with research method, the relation of theory to research will receive continued attention. In view of the central, developmental role assigned to theory it is not merely desirable but in fact inevitable that such questions will often arise in the following discussions of measurement, strategies and analysis.

Selecting and Measuring Variables

One of the myths of research method holds that the researcher first selects a variable then finds a suitable way of measuring it. Very rarely does this represent the actual course of events. Moreover, adherence to this paradigm is the source of much confusion in both the design and the interpretation of experiments.

Sometimes the paradigm is valid. Take, for example, the problem of measuring fundamental frequency of the voice. There exists an adequate definition of just what the fundamental frequency is and several ingenious methods have been developed for measuring it, all of which (when working properly) give the same results.[11] However, because each method is subject to some specific, known limitation—such as costliness, instability under particular conditions, or time needed to reduce data—the search still continues for a simple, reliable, quick, and inexpensive means of extracting the fundamental frequency from a voice signal. While the engineering aspects of this problem are staggeringly complex, fundamental frequency measurement represents a basically simple measurement task; one knows exactly what is wanted and the only problem is how to get it.

Against this classically simple problem, contrast the difficulty of "measuring" vocal variety, comprehension, attitude, and attention. When investigators set out to measure one of these variables, disaster is invited precisely to the extent that solutions are anticipated as probably quick and satisfactory. The problem in each case is not to find a way of recording what one obtains, but to decide exactly what it is that one wants to observe. Each of these variables is complex. When closely examined, each can be seen to consist of a number of more specific variables, most of which are nonobservable entities presumed to exist somewhere (usually inside the head of some person). In "measuring" variables such as these, one is invariably forced to measure either component variables or surrogate variables, presumably closely enough tied to the complex or nonobservable variable to reflect its state accurately. Such fictions are useful primarily as a means of deferring hard questions for later resolution. But when one can, for example, obtain very different results in the same experiment regarding information gain as measured by free-response and by multiple-choice methods, it should be realized that a theoretical-methodological debt has been incurred that will one day have to be paid.[12]

Of course, in the long run no experiment can test hypotheses regarding variables not measured. Thus, to say that Kretsinger's experiment measured inattention by recording restiveness levels of a juvenile audience is to use the concept "attention" in a metaphorical

way, a point that the author recognized.[13] In resorting to the "wiggle-meter" one may start out looking for a measure of attention, but soon find that variable unmeasurable, and end by measuring another variable instead.

It is precisely at this point that the question of validity, so often mooted in psychological and educational research, rears its head. If researchers succumb to the temptations it offers they find themselves wondering whether the squiggles on the chart paper actually are a valid index of attention. In this instance, as in nine cases out of ten where the issue of validity is raised, the question is inappropriate. It *may* be appropriate to inquire whether the squiggles are a valid index to restiveness; but since restiveness and attention are not logical antitheses (readers can imagine someone as both restive *and* attentive on one occasion and neither restive *nor* attentive on another), it should be obvious that a measure of restiveness is not a valid measure of attention except under special conditions. In a surprisingly large proportion of cases where the question of validity is raised a close analysis reveals that the investigator is trying to have his cake and eat it too; the investigator wants to use an empirical measure, but hopes to extend it so as to test an hypothesis regarding some nonempirical (that is, nonobservable) variable. In cases such as these, the experimenter may have begun by choosing the variable with which he wanted to work; however, by the time he gets to the experiment it is apparent something else is being measured. If an experimenter finds that "something else" ` little interest and must argue its validity as a reflection of some oth r thing, then in all probability the experiment should be terminated, because almost certainly the results will not mean what he hopes they will. The other alternative, which was noted earlier, is to revamp a given theory in terms of what can be measured.

Because nonobservable variables play a central role for many branches of speech-communication theory, the foregoing may seem at first to represent an unduly trenchant position. Moreover, certain prominent cases may be found in other fields in which nonobservables have played very productive roles: for example, the atomic model in physics and "intelligence" in psychology. But these cases are in contrast to the usual case in speech-communication.

With regard to the first, it should be noted that though unobserved, the atom until very recently was thought to be observable in principle, with the only barriers to its observation having to do with impracticalities of time and scale.[14] While this distinction may seem trivial at first, it does in fact make an enormous difference. If researchers think they know what a thing would look like if only it

could be seen, it is possible through direct relations to formulate rigorous deductions concerning what effects it will have on things observed. If the deductions are sound, logically, one's notions about the things which cannot be seen but suppose are there can be tested. So long as these deductions lead to accurate predictions rega ling observables, scholars may conclude that the unobserved entity variable is in fact "there" and that the mental picture of it is accurate. When deductions fail to be substantiated under observation, that picture is revised or discarded. However, special difficulties arise whenever variables are posited that are *in principle* unobservable. These tend to be invested with properties that observables do not have. Being inherently mysterious, it is perhaps no wonder that they enter into mysterious relations. For example, consider the congruity principle in attitude research.[15] At one level of analysis an elegantly simple hypothesis, congruity becomes labyrinthine the moment one asks through just what actual mechanism it possibly could take effect. Additional nonobservables are called in to explain the behavior of the nonobservable attitudes, and so on. A nonobservable variable is like a lie: it requires others to support it as soon as further details are required. This is not the case for the variable or entity that is unobserved merely for technical reasons, like the old-style atom. Being made of the same stuff as observables, it connects up with them directly and naturally without the need for intermediaries.

But what of that other greatly successful nonobservable, "intelligence"? Unlike most of the variables that enter into propositions about speech-communication, it was developed in close relation to variables that are not merely observable, but practical. Its principal value historically lies with its ability to satisfy the need of some way to predict success in school and in certain occupations. From the beginning "intelligence" never was much as a theoretical concept. Attention turned more often inward to questions of its constitution or components, rather than outward to its place in a general psychological theory. Consequently, tests of intelligence were made with both eyes firmly fixed on validating data. It was in fact these observables that controlled the development of intelligence tests rather than either laboratory studies or any fixed harmonious notion of what intelligence as a variable "is." "Intelligence" is for the most part regarded today as a shorthand substitute for "the score achieved on a test of the type that is called an 'intelligence' test." Whether the score represents any stable trait of the individual is much less important than the fact that it allows fairly accurate predictions about success in certain endeavors.[16]

In this sense, intelligence testing is a research-and-development activity, about which more will be said in the final section of this essay. For the moment it should be noted that this pragmatic commitment makes a great and vital difference. It keeps attention firmly riveted on observable things that make a difference in the workaday world. A lot of ambiguity is tolerated in the concept because it is not terribly important in itself, being a sort of mental shorthand for certain practical predictions.

As can be seen from the above examples, working with nonobservables may be useful under either of two conditions: (1) when the reason for the nonobservability is technological rather than theoretical, or (2) when the nonobservable is based directly on observables and is introduced as a convenience for research and development purposes. With these two exceptions, strict adherence to observable variables may be expected to produce a healthy effect on research.

The measurements used in speech-communication research vary enormously with regard to the extent to which they allow or invite reference to observable variables. At one extreme are questionnaires. These may be (though they rarely are) interpreted at face value. A public opinion poll, for example, indicates what people say about an issue or candidate when asked about it in a certain way by a total stranger. Since this is not a very interesting datum, one may try to infer more than can be observed. If researchers standardize the approach and design the questions carefully, they may be able to predict certain other behaviors, such as voting.[17] When this is successful investigators may believe sometimes that they have, through the structured verbal behavior of the interviewees, "measured" the *thinking* of subjects. When predictions of this sort fail, one is inclined to say that the measurements were faulty. It would be more accurate to say that the verbal response to the interviewer and voting behavior were influenced by different variables, and dispense altogether with the notion that the questionnaire measured what was in the subject's mind. Questionnaire instruments are very useful so long as one stays fairly close to the data; but even such "scientifically designed" instruments as Guttman scales and semantic differentials are open to the criticism that they invite unwarranted extension into the domain of the unobservable.

At the other extreme are electroacoustic measures. Frequency, intensity and time are variables that can be measured directly and without the necessity of inferring them from other data. Moreover, they neither invite nor allow inferential extension to other variables which they presumably reflect. It is probably because of this firm anchoring in directly observable variables that acoustic phonetics, in

spite of its costliness relative to other kinds of research, has progressed more rapidly than other branches of speech-communication.

Between questionnaires and electroacoustic measures are distributed observational inventories (such as interaction process analysis[18]), content analytic techniques,[19] bioelectric measurement,[20] and linguistic analysis. Each of these methods is capable of producing data based directly on observations and requiring little if any influence in their interpretation; each also is used often to produce measurements through inference from observations.

In some instances the inference comes "before the fact," as in interaction process analysis, where the observer must make many inferences from specific bits of behavior to arrive at his judgments of categorizable interactions such as "asks for clarification" or "expresses solidarity." In such cases, the ultimate data on which the categorizations were based are lost to further analysis. This may be why interaction process analysis has produced so few fruitful results in more than twenty years of research.

In other instances the inference comes "after the fact" as in the case of most biophysical measurements as applied to psychological aspects of communication. For instance, it requires no inference to observe heartrates and palmar sweating; the measurements are taken directly from dials or strip charts. However, when such measures are regarded as indexes of arousal, anxiety, attentiveness, emotionality, etc., one leaps across inductive gaps whose magnitudes only can be guessed. Sooner or later, some such gaps will have to be crossed; but secure crossings will require stronger bridges than are available now. On the other hand, there is a safe foundation on which to lay the first span: GSR's, respiration cycles, and capillary contractions are without question very real things, however they may relate to communicative behavior. That fact will make whatever relationships may exist easier to find in the long run.

The difference between these two classes of inference from data may be a vital one. In the first instance (interaction process analysis) the primary data on which inferences were based have been lost before the data are analyzed; in analyzing the results of an experiment using interaction process analysis, inferences are made from inferences. In the second instance, physiological response, the primary data represent the ultimate bases for inferring the results of the experiment; inferences are made from data. Even if the inferences are not correct in this case, the data are there for re-examination and re-evaluation at a later time.

In this section regarding variables, it has been argued that the question of validity, in the form in which it is often raised in the social

and behavioral sciences, is inappropriate and misleading, since it draws attention away from the observations on which measurement is based and turns it toward nonobservables. While admitting that under particular circumstances certain nonobservables may be tolerated for theoretical or development purposes, a general abandonment of such variables and a concomitant focus on primary data have been urged.

Design and Analysis

Under the heading "Design and Analysis" may be grouped all those considerations governing how data are so collected as to enable an investigator to draw sound conclusions and those methods of so summarizing data as to extract the maximum of relevant and valid information from them. Included are questions of naturalness, control of extraneous and interacting variables, sampling, and statistical analysis. Considerations regarding control of variables through experimental design are much the same in all research fields and there appear to be no special problems of experimental design plaguing this field more than others. Therefore, attention will not be given here to experimental design in this limited sense. but each of the remaining three considerations must claim a share of the discussion in this section.

The Naturalness Continuum

With regard to degree of approximation to the natural setting, studies may be classified as field studies, experiments, and computer simulations. The experiment has been the principal method by which knowledge has advanced in speech-communication, with the field study making an occasional contribution and simulations apparently just coming over the horizon.

The principal advantage of the *field study* is that events studied occur within their natural setting, surrounded by all the influences to which they would ordinarily be subject. Studies of the effects of communication in the 1960 election, for example, were conducted by means of measurements taken at various points during the campaign.[21] The researchers were unable to influence the course of events; they observed them in much the same way a meteorologist measures factors contributing to the weather. In such studies one is not limited to making observations; if a researcher knows that an event is likely to occur, it is possible, at least theoretically, for him to measure its effects. By observing the event in its natural setting, the

researcher is able to verify that an effect which appears to take place
in the laboratory retains its potency when transplanted into the sort
of real-life situation to which it is hoped experimentally-derived
principles will generalize.

Against such studies it is urged sometimes that little information
can be derived from them, since the level of control of interacting
variables is so low that the main effects for which one is looking are
likely to be obscured. In rejoinder, one might argue that if an effect
is so slight or unstable that it cannot be observed in a natural setting,
then it is perhaps not worth the investment of substantial time and
resources in experimental research either. But what about the argu-
ment that the effect, though substantial, may be contingent upon
other factors and so may not be observed in a particular natural set-
ting where those factors are unfavorable to its appearance? The
answer is that the effect itself is not understood until the factors
which affect it and how they express themselves are understood;
knowing about them, researchers should be able to measure them in
a given natural setting and so adjust their predictions regarding the
main effect accordingly.

It is in fact precisely because such contingencies must enter to a
greater degree into our notions regarding speech-communication
that researchers should devote more attention to field studies. They
impose the rigor of reality on theories, requiring a completeness of
specification not usually demanded in the experimental setting. In
particular, many effects in speech-communication are mediated or
influenced by differences between individuals, social groups, and
details of social setting. For a given individual even dialect may vary
from one social situation to another or from one group of auditors to
another.[22] In specifying the effects of one variable on another (for
example, dialect on persuasiveness through its differential effect on
ethos), it is essential to include such differences in the calculations.
Because experiments so readily control these variables (which all too
often are referred to as "extraneous"), attention tends to be diverted
away from the effects of such variables. In the field study they cannot
be ignored; thus, such studies represent the ultimate test of scholars'
understandings.

That being the case, why bother with experiments? Because prior
to the time when researchers are ready to test a complete theory in
the field, they need to explore it systematically and to guarantee
themselves from time to time that they are moving in the right direc-
tion. It is precisely because a field study demands such a complete
grasp of details that it represents an inefficient way to launch a new
area of research. The *experiment* allows one to test parts of a theory

against what might be called "laboratory reality" under conditions
that may be rendered ideal for the detection of any effect, however
slight.

Just how much of a restriction these laboratory conditions place
upon generalization of the results will vary enormously from one area
of inquiry to another. A general rule of thumb might state that in
communication the farther one moves away from basic physical and
biological data toward personal-psychological and social data. the
greater grows the number of factors that may perturb a given effect;
hence, the greater the difficulty of generalizing from an experiment
to similar effects in a naturalistic setting. Thus, one moves with rela-
tively few steps from basic psychoacoustic experiments to the design
of telecommunication systems; but the pathway from experiments in
persuasion to the engineering of political consent has yet to be found.
The problem is not (as might be supposed) that more experiments
have been done in psychoacoustics than in persuasion. In fact, it
would not be surprising to find that the rising curve of experimental
research in attitude change has long since passed its psychoacoustic
counterpart: on the contrary, the problem (apart from the theoretical
ones mentioned previously) is that so complicated a theory is re-
quired to account for social effects, and the number of experiments
required to test its various parts is so large.

In discussing the contribution that experiments can make to an
understanding of the speech-communication process and its effects, it
is important to remember that the strict generalizability of experi-
mental results decreases as one moves away from basic physical
and biological processes. In the case of psychological and social
processes, experiments are necessary as a means of testing hypotheses
in relative isolation; but the ultimate test of such hypotheses in their
complete and fully-qualified form comes only when they are applied
to problems in the field.

Although they stand at opposite ends of the reality spectrum, the
field test and the *simulation* assessment have one important attribute
in common: both require a fuller specification of hypotheses and de-
tails than is customary in experiments. In computer simulation the
elements of a problem are represented symbolically. Using computa-
tional algorithms presumed to be analogous to subprocesses in the
natural process being simulated, the process is analyzed in symbolic
form. Sometimes the purpose of the simulation is to observe how
some set of variables is affected by a change of conditions. as when
economists simulate the major effects of easing consumer credit or
calling a strike in some basic industry.[23] Sometimes it is to observe
the rate of change in some phenomenon over time. given certain

initial conditions, as in simulations of the adoption process for in-
novations in semi-rural communities.[24] Sometimes it is to predict
the outcome of some social decision process such as an election or
referendum, given certain conditions within the community.[25] In all
such cases the goal is to represent all elements that contribute to the
desired answers as fully as possible within the computer. If anything
is omitted, the simulation will produce false or meaningless results.

Although a number of processes within the cognitive domain have
been simulated by researchers in other fields, theoreticians in speech-
communication have only begun to experiment with simulation. In
one sense such simulations provide no information that is not known
already. The variables must be specified before they can be repre-
sented symbolically and the processes spelled out before they can be
represented by computational algorithms. Yet in a broader sense
such simulations can provide a great deal of information that one will
be slow to learn in any other way. Because researchers can deal in
experiments with only a few variables at once (and then only with
events within a very short span of time), they lose sight of the inter-
relatedness of phenomena and of the process nature of reality. Often
researchers know more than they know they know because their
usual methods of experiment and exposition do not encourage them
to put together either large or complicated pictures. In simulating a
process one can bring together everything he knows about it. Even in
relatively simple cases this may turn out to be a surprisingly large
amount and may lead to interesting questions about p.. ameters and
interrelations among hypotheses.[26]

In this section it has been suggested that an experiment, which
represents a compromise in naturalness between the field study and
the simulation, has much to contribute, but that it is easily over-
valued. At the two extremes of the naturalness continuum, field
study and simulation have a contribution to make which is at the
moment largely unrealized. Though in different ways, each requires
fuller specification of details, conditions, and interactions than does
an experiment.

Sampling

Although the term "sampling" may refer occasionally to sampling
discourses, language units, interactions, temporal segments of a sound
wave, or other speech phenomena, "sampling" in speech-communica-
tion usually refers to the selection of subjects for experiments or field
studies. All three of the customarily significant considerations in sub-
ject sampling present relevant problems in speech-communication
research: type, number, and manner of selection.

One may pass over type and manner of selection with the usual admonitions which, no matter how often repeated, are in speech-communication as throughout the social and behavioral sciences, honored more in the breach than in observance. With regard to subject type, it is to be noted that researchers have until recently experimented almost exclusively with the "college sophomore." Nebergall and others have noted the effects of this narrow sampling on our theory and research.[27] Conclusions drawn from any sample other than a truly random one are always suspect. More often than not, samples for experiments in speech-communication have been obtained by procedures better described as "accidental" than "random." In particular, use of volunteers, students needing makeup work in a basic speech course, and intact classes results in subtle bias. Until investigators learn to forego these subject-selection procedures, they will have to live with results containing less signal and more noise than desirable.

As important as type of subject and way of sampling are, the size of samples may be the most significant problem in sampling for research in speech-communication. To compare experiments in physiology with similar experiments in speech is most revealing. Drawing a random sample of twenty studies from each field of research, it is unlikely that the distributions of sample size would overlap. Rarely do studies in physiology use more than twenty subjects; rarely in speech do they use fewer than one hundred. Why? The answer is that the effects in physiological research are assumed to be straightforward, or relatively so. When a few relevant variables have been controlled, values for all subjects exposed to a given set of experimental conditions should be similar, allowing for minor adjustments due to individual differences. This is not so in most speech-communication research, where effects are understood to be susceptible to all manner of idiosyncratic variability from subject to subject. Except in acoustic experimen . no matter how many variables are controlled, any group of subjects exposed to communicative influences is expected to vary enormously in their responses. In the absence of individual uniformity, comfort is sought in numbers: the mean is held to be characteristic of the "true" response with individual variations around the mean attributable to measurement errors and unspecified sources of individual variation.

The consequences of this attitude toward individual variability are far-reaching indeed. It is one thing to say that all theories are in the final analysis probabilistic; no doubt that is so. But if the amount of individual variation in a given effect is so great that one cannot make reliable predictions for groups smaller than a thousand, then the value of knowing about the effect is decidedly limited.

What has all of this to do with sampling procedures? Simply this: until scholars approach the point where meaningful research can be done with small samples of subjects, they are not really in control of the variables that must be relevant to any theory they try to build. As a general rule, therefore, rather than increasing the sizes of samples in experiments on the assumption that a large sample is somehow more scientific than a small one, investigators should be making every effort to design their studies in such ways that small samples will yield significant results. These same considerations bear on problems of statistical analysis, to which attention is directed now.

Analysis of Data

As a general rule, the less reliable the theory and the measurement techniques of a given discipline, the more powerful are the statistical techniques that it employs. One does not need statistical procedures applied to photometer data to tell the difference between night and day. For many years, psychologists in the Soviet Union eschewed probability statistics altogether on the ground that any effect worth bothering with would be apparent from visual inspection of the data and would not call for verification through elaborate probability estimates.

Greater recognition of this principle would prove beneficial to speech-communication research. First of all, consider the spectacle created by one typical experiment. Experimenters are interested in determining the effects on information gain of the organization of a speech. To test this effect, two versions of the same message are prepared, one very well organized and the other quite badly organized. Both contain the same factual information. A group of subjects (preferably a very large group) is exposed to each message and factual recall is measured. *Then probability statistics are applied to the data to determine whether there is any difference in effect!* Assuming that organization has any appreciable effect on recall, this is a truly remarkable procedure. If the variable is effective (and the measure is reliable) the difference between the two groups should be so substantial as to admit no question; the means should be poles apart and the distributions should overlap to a very small degree if any. The application of probability estimates to the differences between the means should be trivial. This should be true particularly if one chooses levels of organization that are quite different from one another; otherwise, one wonders what is important enough about organization to warrant the investment of so much time and effort in the experiment.

Overreliance on probability statistics characterizes research in speech-communication at this time. Researchers ought to be looking for variables that make large and unmistakable differences rather than for more refined techniques for measuring very small or highly probabilistic differences between effects. But the use of experimental groups and statistical tests for significance of difference between means has other effects that must not be overlooked. The first of these is the oversimplification of theory referred to in the first section of this paper. To say that strong fear appeals are less persuasive than mild ones is a gross oversimplification. What one needs to know (as pointed out above) is the detailed nature of the relationship. Two- and three-group comparisons lend themselves to simplistic thinking about the nature of relationships among variables, no matter how elaborate the probability techniques involved.

Finally, overreliance on powerful probability models tends to lead investigators away from their data. One wonders, for example, how often an experimenter using a factorial analysis of variance design plots histograms to examine the shapes of the distributions whose means are compared summarily for him by the computer? How often has the investigator who reports a correlation examined a scatter diagram for evidence of linearity or range effects? Somehow, when attention focuses on a probability figure, such details as these escape notice: yet, they are the very substance of the comparisons on which probability estimates rest and they often contain valuable information that is overlooked. Data should be regarded as the object of careful examination from every conceivable point of view (as, for example, Knower examined his data in one of the earliest studies of oral persuasion[28]), not as raw material to be fed into a prefabricated probability formula.

Research and Development: The Question of Relevance

Much has been said here regarding research that is devoted to improving theory. To a certain degree this discussion concerns a practical matter, since nothing is so practical as a good theory. However, the other side of that coin is that no theory is so good as when it proves to be practical. It would be a disservice to leave this topic without touching briefly on the question of relevance.

Knowledge for its own sake is worthwhile, and the leading scholars of any field at least profess to pursue it for no other reason. Yet in a time of great stress, it is natural that priority should be given to knowledge that serves some worldly end. Therefore, it is useful from

time to time (in even the most esoteric laboratory pursuits) to pause momentarily and consider what purposes might be served by the knowledge one hopes to generate from research. Moreover, there is an important place in every field of study for research that *begins* with some practical problem and works toward its solution through whatever means come to hand. Such work might be characterized as "research and development."

Research and development effort has the important advantage that milestones along the road of progress are marked clearly. To this extent it has a beneficial effect on theory, since it requires that old concepts be reapplied or new ones developed within the context of progress toward a specific goal. Arbitrary distinctions and inflexible modes of thinking are exposed quickly as they impede movement toward the objective; they are replaced with more adaptive categories and hypotheses. All effort is coordinated, and motivation is maintained by the need to arrive at a satisfactory solution.

Research and development not only serve the values of coordination and motivation, but fo 'm the bases of good public relations and can provide reinforcement for research effort. Consider, for example, the effects of the development of teaching machines on experimental psychology.[29] It not only has served to give learning theorists new stature among both their colleagues and the lay public, but it has provided a strong measure of reinforcement for their own behavior by demonstrating the potential relevance of their work to practical affairs.

Research and development seems to come naturally in those fields of speech-communication that are allied to acoustics or to clinical psychology. For example, consider the projects in the automatic recognition of speech[30] and in the automated improvement of speech.[31] But the question might arise: "Is the time yet right for implementation of such programs in other areas of the field?" This question is inappropriate, and is in fact contrary to the spirit in which such enterprises ought to be undertaken. The time is always right to begin. One only has to find a problem, define it, and start to work. If knowledge is inadequate, that will soon become apparent and research designed to fill the gaps will suggest itself. Rather than waiting for applications of existing knowledge to suggest themselves, or delaying applications until a reliable store of knowledge has been accumulated on which to base engineering approaches to problems, researchers might well adopt the contrary posture of starting with the problems and building theory as needed to solve them.

The research and development approach consists not so much in applying knowledge as in solving problems, bringing to bear w.. ..-

ever is already known and creating new knowledge wherever the need is apparent. No doubt much research in speech-communication will continue to center around the "pure," knowledge-for-its-own-sake approach; but researchers could benefit substantially from opening a second front by direct attack on real problems of immediate and practical significance.

NOTES

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3. Anatol Rapoport, "The Various Meanings of Theory," *American Political Science Review*, LII (December 1958), 972-988.

4. Theodore Clevenger, Jr., "A Synthesis of Experimental Research in Stage Fright," *Quarterly Journal of Speech*, XLV (April 1959), 134-145.

5. Kenneth Andersen and Theodore Clevenger, Jr., "A Summary of Experimental Research in Ethos," *Speech Monographs*, XXX (June 1963), 59-78.

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10. Carole H. Ernest, "Listening Comprehension as a Function of Type of Material and Rate of Presentation," *Speech Monographs*, XXXV (June 1968), 154-158. (It is interesting to note that in this study little attention is devoted to the interactions.)

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15. Charles E. Osgood and Percy Tannenbaum, "Attitude Change and the Principle of Congruity," in *Process and Effects of Mass Communication*, ed. Wilbur Schramm (Urbana: University of Illinois Press, 1954), pp. 251-260.

16. H. J. Eysenck, "Intelligence Assessment: A Theoretical and Experimental Approach," *British Journal of Educational Psychology*, XXXVII (February 1967), 81-98.

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24. Paul J. Detschmann, "A Machine Simulation of Attitude Change in a Polarized Community," Paper presented at Programa Interamericano do Informacion Popular, San Jose, Costa Rica, September 2' 1962 (mimeographed).

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A Response to Theodore Clevenger, Jr.'s
"Research Methodologies in Speech-Communication."

ROGER E. NEBERGALL

The brief comments in this response can provide only a few impressions (rather than any full or organized appraisal) on a paper as extensive and thoughtful as Clevenger's. Fortunately, the views expressed in Clevenger's paper are so near those of this respondent that some brief comments can be made freely and without reservation.

The ideas dominant in Clevenger's paper are sound: the primacy of theory-oriented research, the primacy of basic research, and the primacy of those tasks of basic research which the present "state of the art" makes most feasible. Clevenger appropriately emphasizes the complex relationship of research and theory—particularly in the extremely primitive state of theory development in speech and communication. Of course, the term *primitive* is used in a comparison with the physical sciences. Other social sciences are similar to speech in this respect, and thus Clevenger's remark also applies to them. The difficult task is to understand the difference between the idea of using research findings to "clarify" theory (which Clevenger properly applauds), and the use of *post hoc* "explanation" as a substitute for planning and rigor (which Clevenger quite properly condemns). The distinction is not always an easy one to maintain, but it must be well understood in order to achieve the kind of rich and productive interaction between theorizing and research findings which Clevenger envisions. As Clevenger clearly points out, the crucial difference depends upon whether the theoretical adjustments are applied to the design of the next experiment, or to the analysis of the one just completed; whether they provide the needed insight to design a better ex-

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periment next time, or whether they are used in an attempt to make outcomes of the experiment at hand more impressive or more clearly in line with the theory.

In reading Clevenger's discussion of the difficulties encountered in measuring unobservables, the question arises as to whether the key distinction drawn between the unobserved variables in natural science and social science lies in their potential observability, or whether it rather lies in the extent to which the unobserved variables are clearly and unequivocally linked to observable behaviors. Clevenger states, "If researchers think they know what a thing would look like if only it could be seen, it is possible through direct relations to formulate rigorous deductions concerning what effects it will have on things observed." It is possible to agree, but to wonder still whether the crucial point of this observation involves the possibility of knowing what the thing would look like, or the ability to formulate rigorous deductions. An important issue with Clevenger would arise if his argument is that intervening variables do not have a place in communication research. They do have a place, but they are useful only to the extent that they can be employed to generate rigorous, unequivocal predictions about things that can be seen. For instance, some of the difficulty with the congruity principle may lie in the fact that those unobservables turn out to be difficult to relate clearly and unequivocally to the prediction of behavior which can be observed, not in the fact that it evokes unobservables. The disagreement suggested here may not be a real one. For instance, it is unlikely that Clevenger is willing to abandon his example concepts of vocal variety, comprehension, attitude, and attention, or any number of other concepts like these. There is no disagreement with the argument that the search for "quick and satisfactory" solutions to the measurement of such variables invites disaster. Scholars do not further their efforts in communication research by looking for easy solutions to hard problems.

One of the crucial points in Clevenger's paper is the methodological superiority of making inferences from data over making inferences from inferences. Maybe one of the most important things which communication researchers can do today to contribute to whatever social science of communication exists a hundred years from now is to be sure that today's carefully gathered observations are preserved in such a form that "the data are there for re-examination and re-evaluation at a later time." After all, it does not take much study of the history of science to realize that theories come and go, while data remain. If the future of scientific inquiry is like its past, the communication theorist of the twenty-first century will care little about our theories, save as interesting items in the history of his

field. If carefully gathered, the data concerning our observations which are left for future scholars should be as amenable to their investigation as to today's research (with all the obvious attendant advantages).

Clevenger's concern with the relationships between studies of varying degrees of approximation to the natural setting is important. Scholars need to pay more attention to the sensible use of attacks upon research problems wherever investigation goes on including the field, the laboratory, and even in simulation. Researchers in speech-communication have done too little of this—which is a good reason to pay attention to Clevenger's careful analysis of the relationships between these kinds of studies and the things which can be learned at each level.

Finally, Clevenger is right when he argues that there is a need to restrain ourselves in the search for variables, the significance of which can be studied only by the application of the most powerful probability statistics to the largest available population of subjects. The study of speech-communication is not at that point yet. Scholars should be looking for the big things, because these simply have not been found yet. They are the kinds of things which should leap out at researchers if the right questions are asked. When they do not leap out, the proper solution is to try to reformulate the question, rather than to look for a larger group of subjects or a more powerful statistical test. Clevenger is right, too, in warning that increasingly powerful statistical tools (along with the increasing availability of sophisticated computational equipment) may cause researchers to look upon data as inputs to be processed, and not as vital information to be studied. Such a utilization of such powerful tools would not be in the best interest of theory development in speech-communication.

A Response to Theodore Clevenger, Jr.'s
"Research Methodologies in
Speech-Communication"

RAYMOND G. SMITH

The assignment of responding to Clevenger's statement on research methodology is undertaken with a certain amount of trepidation, not because of fear of disagreeing with him, but because of the difficulty in discovering significant points at issue. One can but echo Clevenger's reservations concerning placement and selection tests, pedagogical method, and experiments stemming from isolated hypotheses -- while at the same time agreeing that all these are both essential and valuable.

Clevenger has impinged upon a sensitive experimental nerve when arguing for programs of research which can be conducted either intramurally or intermurally. It strikes this observer that far too few such programs have graced the speech field. One might augment Clevenger's appeal by urging the type of *interdisciplinary* program that has proved so successful in the "hard" sciences.

Clevenger's plea for the investigator to work from within the confines of the best and most complete theoretical structure available, while elaborating that theory in anticipation of as many experimental eventualities as possible, seems most commendable. At the risk of appearing to "nitpick," however, one might point out that Clevenger appears to lose sight of this theoretical superstructure in his final section on Research and Development when he prescribes: "One only has to find a problem, define it, and start to work...."

Concern with the confounding of variables due to the use of weak experimental designs noted by Clevenger, strikes a near lethal blow to much of the older published work in the speech field; investigators and program directors can only pledge that the current crop of investigators being trained in academic institutions will adopt the factorial

and other multivariate design techniques now available. Modern com-
puters provide powerful new instruments for revitalizing an old set of
tools, almost discarded because of their time/energy requirements.

At this juncture the members of this conference are probably saying
to themselves, "Let us skip the plaudits and get to the business of an-
swering the question, 'Did you find anything with which to take issue
in Clevenger's paper'?" The answer is, "Yes."

Clevenger argues eloquently that speech scholars should get away
from the unobservables assumed to be assessed by present measuring
instruments which structure verbal behaviors of experimental sub-
jects. Clevenger avers that researchers should attend to such basic
measurable data as heartrates and palmar sweating—variables which
can be recorded from dials and strip charts directly.

All such measurements presently are meaningless, and there is no
possibility in the forseeable future of their becoming otherwise. In
fairness, Clevenger admits this when he states, "However, when such
measures are regarded as indexes of arousal, anxiety, attentiveness,
emotionality, etc., one leaps across inductive gaps whose magnitudes
only can be guessed. Sooner or later, some such gaps will have to be
crossed. . . ." For example, it may be useful to examine this problem
with respect to heartrate, although the argument applies with equal
force to all such "direct" measures. The fallacy is illustrated in the
following statements. In order to index whatever meaning an increase
of, say 20 bpm, in heartrate implies, *a meaning criterion must exist*,
against which to correlate it; if one could in any manner obtain this
kind of criterion, *the heartrate index would not be needed*. If the gap
is bridgeable, the physiological correlate would not be needed; if it is
not bridgeable, the physiological score is uninterpretable.

Consequently, physiological measurements should be classified as
indirect, precisely because they are one additional step removed
from researchers' central concern -the reality of what is on-going in
the subject's cognitive system. It is very true that words are only a
surface manifestation of meaning, but they furnish the most direct
access to the "little black box" that people have. This is not to decry
the importance of physiological indexes for other and less direct pur-
poses. For example, such indexes have proved their worth in lie de-
tection, and undoubtedly their utility will be extended. However,
their future value for measuring responses to the meanings evoked
through speech is questionable.

Clevenger's advocacy of greater emphasis upon field studies is well
taken. Some day in the future one may see funded and staffed re-
gional, communication laboratories primed for immediate action to

study communicative phenomena during   ergencies such as floods, earthquakes, or local disasters.

The argument by Clevenger for the   *f differences that make a difference* is eminently laudable. On   wish all control variables involved in research concerning speech were sufficiently powerful to be observable by inspection. However, the example offered on speech organization begs the question, "Assuming that organization has any appreciable effect. . . ." It all depends upon Clevenger's interpretation of "appreciable." Numerous speech variables appear on the grounds both of theory and experimental research to have small but measurable effects. In parcelling out interactions as Clevenger advocates, experimenters should get even clearer estimates. There is plenty of evidence to show that messages as a whole do have "appreciable" effects. Perhaps, contrary to Clevenger's thesis, communicologists presently are proceeding awkwardly, but in the right direction, in attempting to identify and to assess the effects of each of these many variables. Adopting more powerful and rigorous designs as Clevenger proposes may do much to solve remaining difficulties. A number of these variables have "appreciable" effects and, consequently, will need to be taken into account.

In its entirety, Clevenger's paper includes much of value and directs attention to numerous weaknesses. Fortunately, the areas of cognitive dissonance suggested by Clevenger's paper and this reply are quite restricted.

POSTSCRIPT

**The New Orleans Conference in
Perspective: Remarks Presented at
the Speech Association of America's
1968 Summer Conference**

The New Orleans Conference in Perspective: Remarks Presented at the Speech Association of America's 1968 Summer Conference

[*Editors' Note: This chapter is, in essence, a transcript of remarks presented at several sessions of the Speech Association of America's Summer Conference, July 13-14, 1968, in Chicago, Illinois. These remarks are included as a postscript to the conference at New Orleans because they reflect scholars' on-going concern for implementing the recommendations stated in Chapter Two and because ti, , provide an initial reaction from various scholars regarding the impact of the materials in this volume. Because of the nature of the remarks in this postscript, much of the personal and informal style used in presentation has been maintained.*]

Introduction

WILLIAM WORK

John Dietrich, who served as Director of the project, was scheduled originally to review the background of the New Orleans conference at this session of the Summer Conference. However, its origins and

scope have been well publicized at previous meetings and in pub-
l'shed reports sponsored by the Association. Since the membership of
the Association is now in a position to assess some of the outcomes of
the meetings held in New Orleans this last February, the introductory
remarks will be brief. The project was conceived as a result of a trip
to Washington, D. C., that Jeffery Auer and I made to protest the sub-
stantial non-inclusion of speech in "Project English." Discussions
revealed that federal money was available for discipline-oriented re-
search   and   instructional   development   projects.   Ultimately,
through the Speech Association of America's Research Board and
the advisory committee which it selected, a specific sponsoring
agency was located (the Arts and Humanities Program of the
United States Office of Education), a proposal was drawn up, and
some $58,000 in governmental support was secured. With all of the
attendant problems of selecting a focus, writing by committee,
choosing conference personnel, and related matters, the total proc-
ess took almost three years. The purposes of this meeting are to pre-
sent reactions to the recommendations of the conference held in New
Orleans by representatives of three areas of speech-communication
scholarship: historical, critical, and behavioral—and to discuss these
remarks.

Implications of the Recommendations of the New Orleans
Confeıence from the Perspective of Historical Scholarship

J JEFFERY AUER

The ultimate goal of the historian is to earn the accolade given by
the ancient rhetorician Longinus to Herodotus: "He takes you
along and turns hearing into sight." To put Longinus into the modern
idiom, "He tells it like it is, baby!" If, for the purpose of meeting
this assignment one wishes to behave like an historical scholar, and
tell it like it is about the New Orleans conference, it is necessary to
begin by providing some kind of historical framework for the ob-
servations to follow.
    It is commonplace to say that for reasons practical, cultural, sci-
entific, or aesthetic, teachers and scholars in the field of speech-
communication are concerned with both the act and the art of man
communicating with man. This is so whether the main area of in-
terest is theatre, interpretation, radio-television-film, speech and
hearing science and therapy, or public address and group communica-

tion. Neither the act nor the art is ignored, although scholars have not always distinguished clearly enough between the two.

The act of speech is simple vocal utterance. It may be performed by the untutored, albeit often crudely and ineffectively, and by those schooled in the art who are presumably doing it effectively, intelligently, and responsibly. But since man first communicated with man, the act has always engendered the art. R. C. Jebb affirmed this in his treatment of the Attic Orators:

> It was of the essence of Greek oratory . . . that its practice should be connected with a theory. ^   the application of rules, generalised from experience, for the production of results; and the Greek conception of speaking as an art implied a Rhetoric. This Rhetoric grew only gradually into a complete system; but from the first there was the fixed tendency to regard oratorical composition as susceptible of a regular analysis.

What Jebb is implying is that there were speakers before there was an art or theory of speaking, and actors before there was an art of acting. In effect, there must be agreement that genetically the practitioners came first. Then came the theorists. Aristotle put it this way in his *Rhetoric*: "When the practiced and the spontaneous speakers gain their end, it is possible to investigate the cause of their success; and such an inquiry, we shall all admit, performs the function of an art." Aristotle might have said that one begins with the empirical and moves toward the technical or the scientific; the unschooled act of oral communication may reflect only native ingenuity, but the art of effective communication is based on deliberate analysis. This was pretty much Jebb's conclusion when writing the history of empirical Asianism and technical Atticism. "The Old Oratory (Atticism) was an art," he said, "and was therefore based upon a theory. The New Oratory (Asianism) was a knack, and was founded upon practice. . . . The flourishing period of Asianism was that during which the whole training of the rhetor consisted in declamation. The revival of Atticism dates from the moment when attention was recalled to theory."

Finally, after the practitioners and the theorists, came the critics and the historians. Perhaps one should say simply that critics are always present. At least it is true that at about the same time that Aristotle wrote his *Rhetoric*, Pliny in his *Natural History* quoted Zeuxis as complaining that "criticism comes easier than craftsmanship." Both the historian and the critic stand, in a sense, upon the shoulders of the theorists and reach for value judgments of the social impact and worth of specific acts of communication. These judgments

are set forth in what Allan Nevins traditionally defined as "any integrated narrative or description of past events or facts written in a spirit of critical inquiry for the whole truth." These judgments are made by following what is commonly referred to as the historical, or the critical, method of research. Because it is not uncommon for scholars in this field employing the historical method to embrace both history and criticism in their studies, Professor Arnold and I thought it might be helpful to establish some boundary lines for the purposes of these presentations. There is agreement that a critical study is intensively analytical and focuses on source-message-receiver relationships primarily as they are revealed by the message itself. There is also agreement that an historical study is broader in scope and focuses on source-message-receiver relationships primarily as they are revealed by and within their social, cultural, and intellectual environment. In short, an easy division of the territory has been ma·'e wherein the historical scholar takes the rhetorical context and the critical scholar takes the analysis of discourse *per se*.

Now, within this construct of practice, theory, history, and criticism, how did the New Orleans conference sound to me?

The place to begin is with the conference's basic definition: "Spoken symbolic interaction is the central focus of study in the speech-communication area." Surely there is no quarrel here by the historian; for even if the point is made that the *zeitgeist* of the communicative act is not specifically mentioned, the use of the term "central focus" in the definition will not only make room for the student of *zeitgeist*, but indicate an area where behaviorist and historian may profitably meet.

This possibility of a research relationship becomes more clear when one reads the following three sentences from the conference report:

> The conferees recognized that most paradigms of symbolic communication include variables falling into the following classes: physical environment, social environment, source, message, channel, code, noise, and receiver. The participants emphasized that their principal concern was with the *classes* of variables central to speech-communication processes, the variables involved directly in communicative exchanges. In this connection, participants noted that their strongest interest was in psychological rather than physical variables.

When reading these sentences, it becomes clear that what I have called the *rhetorical-context classes* of variables are of lesser concern, apparently, to the behavioral investigator, but of greater concern to the historical investigator. This congenial conclusion is

supported by the further conference statement that "research in speech-communication focuses on the ways in which messages link participants during interactions." Surely the historian, dealing with communicative situations outside of the laboratory, is equally concerned with what the conference report calls ". . . the behavioral antecedents and consequences of messages and their variations. . . ."

Secondly, in several of the resolutions adopted by the conference speech-communication scholars in effect are saying, "look at the world around you, and do at least some of your research on the communicative dimensions of current social problems." Several other resolutions urged these scholars to get themselves involved in the world around them by applying their research findings to the solution of contemporary and social problems. There was a day, surely, when the historian tried so hard to be "then-minded" that he was indeed almost "out of this world." Today, there are still those who insist that no orator is fair game for study unless he has been comfortably buried for twenty years or more. It now seems that the number of persons concerned with "contemporary history," with the here and now, is increasing substantially. Surely they, among the historical brethren, will be among the first to respond to and support the New Orleans conference's call to arms for an engagement with contemporary social problems. Just as surely, there will be a special place for their special competencies. For of all problem areas in which researchers might become involved, it is in meeting the always urgent and sometimes ugly problems of the present that there is often no time to design the research, no time to develop the measures, no time to test the hypotheses. Indeed, there may barely be time to make quick value judgments about the probable utility of existing theories and to make operational what the historian's perspective tells him is the best thing to 'o.

Finally, and perhaps a little reluctantly, the third major emphasis of New Orleans must be considered—an apparent incompatibility between behavioral and historical approaches. Readers will note, however, that I am less than categorical here and stress that the incompatibility is apparent. This point will be reconsidered later in this paper. The emphasis that seems to separate the behavioral and historical scholar is upon what the conference calls "scientific approaches." One conferee quoted in the report defines this approach as "an attempt to establish lawful relationships between antecedents and their consequences in such a way as to enable prediction and replication." The report suggests that most conferees probably would endorse as a fairly standard definition that by Fred Kerlinger in his *Foundations of Behavioral Research*: "Scientific research is system-

atic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relations among natural phenomena." It is not necessary to further define what the behavioral researcher emphasizes in his search for answers to questions of fact, in his quantitative studies, and/or in using the experimental method. It also is clear that the historical scholar, rumbling around in the campaign of 1868, studying the speechmaking of Patrick Henry, or the oratory of the Free Speech movement at Berkeley, is not likely to become involved with controls or replications as he handles his hypotheses. The historical scholar's kind of data determines his method and consequently for the historian, as Jacques Barzun puts it, "truth rests not on possibility nor on plausibility but on probability."

Now the focus returns to the emphasis placed earlier upon the terms "apparent incompatibility." All that has just been stated i. true for many historians, in and out of the field of speech-communication, and they will continue to employ their traditional methodologies, especially when concerned with concrete and visible events. But certainly there are other historians, in and out of the field of speech-communication, who have discovered that while the law of uniqueness in history has not been repealed, many facts are still similar enough to permit grouping and counting. They have begun to apply quantification to much of their data, grouping similar facts and manipulating them mathematically. They have found that some
' the quantitative techniques commonly applied by the behavioral
    ·   ·ial scientists in the study of contemporary behavior are helpful to .nem in analyzing human behavior i. the past. There is not space to detail samples of the historians' use of quantitative methods, content analysis, historical demographic analyses, computer simulation of political groups, and so on. But for a quick overview one may refer to Walter Nugent's *Creative History* (1967), and for a more elaborate treatment to Edward Saveth's *American History and the Social Sciences* (1964). What has proved true for a wide range of economic, social, political, and intellectual historians is going to prove true also for increasing numbers of historians of rhetoric and public address. They are going to discover the utility of quantitative techniques for handling certain kinds of data, and to the extent that they are able to do so they will strengthen the probabilities with which they deal, and they will improve the quality of the value judgments they make.

This short series of comments requires no detailed summary, but a few parting points are in order. (1) Even for the historian of the past, and especially for the historian of the contemporary scene, be-

havioral methods and quantitative techniques are the waves of the
future. When the nature of the available data permits it, both his-
torian and critic have an intellectual obligation to employ these meth-
ods and techniques as essential complements to more traditional
historical methods and critical techniques. (2) As a result of my study
of research methods in the field of speech, many of the conclusions
reached by the conferees at New Orleans appear both useful and en-
couraging. Even while temporarily wearing the historian's robe, I
do not find any ideological or substantive conflicts. While not want-
ing to press too far any analogy with the story of the several blind
men who examined an elephant, it should be noted that whenever
scholars can build additional rigor into their research by incorporat-
ing more than one approach, they must seize the opportunity. (3) To
behaviorally-oriented scholars one must say that even as some are
impatient with those who hold too tightly to the traditional methods,
just because they are traditional, so some historically-oriented schol-
ars resist the newer scientific methods, just because they are new.
Before a speech-oriented audience, it seems appropriate to say that
a great deal of lip-service has been paid to the notion that scientists
and humanists, behavioral and historical scholars, could work to-
gether, or at the very least complement each other in seeking new
insights about speech-communication. It is too much to expect that a
conference such as ours at New Orleans could work out specific proj-
ects translating that pious hope into present practice. That is why
both behavioral and historical scholars still have much homework to
do.

Implications of the New Orleans Conference
Recommendations From the Perspective
of Behavioral Scholarship

JOHN WAITE BOWERS

When Mr. Poppendieck this morning expressed some concern
about his place on the program, it reminded me of some research
done some years ago by Halbert Gulley and David Berlo in which
they tried to study variations in what they called intercellular and
intracellular organization of the reception of a speech. I guess as far
as intercellular organization is concerned, this part of the program is
something of a climax in the sense that it has been referred to all day
long and here it is. As far as my place on this part of the program is

concerned, from an intracellular point of view, I guess this is an anti-climax in that I am a "B" following two "A's." Nevertheless, I think that an A-A-B organization is preferable to the reverse.

As some of you have heard, one of the continuing controversies in New Orleans concerned the answer to the question: What should we call our discipline? Some of us wanted to drop the pejorative "speech" and use the much cleaner "communication," under the reasonable assumption that modality is not a crucial discriminator for research, and maybe even for instructional purposes. One or two wanted speech colon communication. A larger faction advocated speech space communication. In the bitter end, a slight majority voted for the two nouns, "speech" and "communication" linked (or separated, depending on how you look at it) by a hyphen. (As Fred Williams said when the space vs. hyphen controversy got hot, "The world will never believe this.") Now, as I understand linguistic processes, this compound, speech hyphen communication, is something new in English and, even though it has the sanction of the New Orleans conference, it must still meet the test of any neologism. That is, it must still catch on to the point where lexicographers put it in dictionaries. I hope, therefore, that nobody will mind if in this short paper I show my recognition of the term's neologistic quality as well as my mild disapproval of it by pronouncing the hyphen. I will use a sound like this: ugh! I call that a straining grunt.

Since the planning committee deliberately loaded the New Orleans conference with behaviorists, the conference's message to other behaviorists is considerably more direct and less ambiguous than for historical and critical scholars. In fact, the drafting committee of which I was chairman made five specific recommendations, all of which were endorsed by the conference as a whole. I will review briefly those recommendations, amplifying those that need amplification by pointing to appropriate research. I think that all five taken together call for considerably more exploratory, analytic, and sophisticated research than most of us have been doing.

The first recommendation I will characterize with the word *theory*. We are encouraged "to undertake a program of formally defining the outlines of speech-communication theories." We are talking about theory in the sense of comprehensive sets of related generalizations leading to specific predictions, not in the sense of abstract speculation. I think that the recommendation promotes two kinds of research: 1). The kind where we take a large amount of research and fit it into some system that has a predictive potential. A good example from a related discipline is Thibaut and Kelley's now relatively old system of matrices in *The Social Psychology of Groups*. In our own field,

Samuel Becker has a recent paper that he calls "Toward an Appropriate Theory for Contemporary Speech-Communication." I'm sure he'll be glad to send it on request. 2). The kind of research where a scholar takes mathematical or quasi-mathematical models, which may be more or less esoteric, asks the question, "How well does this work for communication phenomena?" and tries to answer it. Graph theory, game theory, and decision theory are three specimens that come to mind.

I call the second recommendation the *interaction* one. It says that we should do research emphasizing "the interactive, on-going, process nature of communication." I like a quotation from D. M. MacKay, who says that we might consider the individual (and, by analogy, the group) as "a vast constantly changing matrix of *conditional probabilities* . . . determining the relative probabilities of various patterns . . . of behavior in all possible circumstances." We recently had a good example of this kind of research at the University of Iowa. Dennis Gouran, now of Indiana University, did a dissertation in which he related 8 characteristics of discussion statements (opinionatedness, orientation, etc.) to the same characteristics in succeeding statements and to consensus in small-group problem-solving discussion. I understand that Thomas Scheidel at the University of Illinois is also working with probabilities of kinds of consecutive statements in group discussion. This research is stimulating: it opens wide areas of exploration. We have already had another study related to Gouran's in which one of our graduate students, John Kline, took the "opinionatedness" characteristic and tried to find indices for it more objective than the ratings of judges. Our research must become more molecular. It must apply stochastic models, but it must apply them to data much more refined than the gross groups we are now accustomed to working with.

Methodology is the term characterizing the third recommendation. The conference "encourages methodological research designed to produce more precise definition of independent and dependent variables, particularly message variables." As I see the recommendation, it officially encourages studies using sensibly controlled, operationally defined, analysis and synthesis of content and style. In our amplification of the recommendation, we also specified the high priority that should be given to studies intended to measure more precisely message effects. Again, as in the second recommendation, we are seeking molecular analysis, precision work. A few examples come to mind. My own work with the definition of language intensity, though that definition is still awkward and unwieldy, would have fit the recommendation, I think, if it had come after instead of before

the conference. Miller and Hewgill's careful work with fear-arousing appeals is an example, again with a qualification: As the conference noted, "to study the effects of anxiety-arousing messages, the communication scholar should be able to specify more precisely than at present the anxiety-arousing potential of various messages for various receivers." In short, we at the conference recognized our need to specify much more reliably the differences in messages that make differences in communication. At least in my judgment, this quest will lead to many dead ends, for many differences in messages probably don't make much difference in communication. Still, the conference encourages us to work on it.

The fourth recommendation is the interdisciplinary one. We are encouraged to do research "relating speech-communication theories and research to the theories and research of related disciplines." At the conference, many examples were suggested, but we could settle on no list to put in the official document because any list excluded so many disciplines equally as relevant as those included. A few obvious areas of interest for us are linguistics, psychology, history, political science, and sociology. Our interest in communication intersects with the interests of many other scholars. (I think Aristotle said something like that.) Fred Williams characterized the nature of '   ecommendation in a sentence. He said at the conference. "I'd lik   ʋ know, for example, how the details of language enter into the details of communication."

The final recommendation I call the *distress*, or maybe *distress- .*lief* recommendation. It calls for the social application of what we .now and what we learn: "Although this conference stresses the need for basic research, it encourages attempts to extend the generalizations from speech-communication research to pressing social problems." Insofar as "pressing social problems" are consequences of malfunctions in communication, we have, or should have, some partial remedies to them. The sights and sounds of marching feet instead of articulate voices seeking redress of grievances probably should make us much more uncomfortable, as specialists in communication, than they do. The conference, by this recommendation, encourages all of us some of the time and some of us all of the time to be socia˙ engineers, I think.

Those are the recommendations. Now I must apologize for something before somebody else notices it. If you take the initial letters of my five characterizing terms—theory, interaction, methodology, interdisciplinary, and distress— you will notice that the acronym is TIMID. It just worked out that way. It really did. The acronym does

not indicate my evaluation of the recommendations. In fact, upon re-
flection, I don't know how we could have made better ones. I now en-
dorse even the one I opposed in New Orleans, the distress one. I think
that our vision was good. May it be fulfilled.

Implications of the Recommendations of the New Orleans Conference from the Perspective of Critical Scholarship

CARROLL C ARNOLD

The New Orleans conference and its volume of "proceedings" are
major achievements in that they offer definition and direction for the
profession's academic and research-oriented functions. Of particular
significance are the words used to identify the business of all associ-
ated with the Speech Association of America: "to understand
spoken, symbolic interaction." These terms were considered at
length in New Orleans, and most scholars in this field will profit from
meditating upon the implications of the phrase. What is called for
here in teaching and research? Enlargement of *understanding* is
required. But the understanding most highly prized is not under-
standing of oratory or drama or speech disorders or the mass media
per se. The conferees at New Orleans have said that their *primary*
business is to attain understanding of the human experiences that
occur when speech links (or separates) man and man in whatever
setting. The phrase also seems to say, chiefly by implication, that this
ought to be the primary business of other scholars too.

As one who fancies himself a rhetorician and rhetorical critic I
hope I speak for my kind in saying that the New Orleans con-
ference identified for primary attention precisely the kind of human
experience which rhetorical theory at its best seeks to describe and
which rhetorical criticism at its best seeks to analyze. There appears
to be no distinction between what the conference recommends as
an ideal focus for scientific investigation and what I consider the ideal
objective of rhetorical, dramatistic or therapeutic description and
critical exploration. Criticism is primarily an attempt to apply theory
and hypotheses in interpreting discourse for the purpose of better
explicating the entire spoken, symbolic interaction one is investi-
gating.

Critics try as best they can, with whatever knowledge and edu-
cated guesses are available, to comment significantly on the nature

and quality of whole communicative events. They may have scientific data, and theoretical constructs that have been scientifically tested, by which to explain some features of the speaking they examine. However, where they cannot be sure that rhetorical feature A will lawfully generate consequence B, they must reason out hypotheses of their own on the bases of experience or of theory as yet untested. They also may try to make themselves receptive to those kinds of original, creative insights individuals experience but cannot account for methodologically. A critic thus stands, as Auer has just said, on the shoulders of the scientist—and sometimes, of course, on the shoulders of the historian, the literary artist, or someone else. In their turn, critics who do their work well supply scientists and others with new hypotheses to be tested under controlled conditions.

On the basis of such views of the reciprocity among scho', ny methods, it is apparent to this outlander to the behavioral scie s that the New Orleans conference may well be the most importa, event in the history of the Speech Association of America. Why? Because it resulted in a long-needed, clear statement of why scholars in speech-communication exist, and it produced a valuable statement on priorities in research. This association of scholars exists because of a special wish to understand better the nature and consequences of spoken, symbolic interaction. This is what held our colleagues together in New Orleans and they suggest it can and ought to be the bond of our profession.

But the New Orleans conference did more than produce a tag by which to designate the common interests of speech-communication scholars. The conference was especially concerned with the kinds of research required of scholars in their search for understanding. From a critical point of view, the conferees were exactly right when they said the two general kinds of research most needed just now are: (1) research that clarifies the concepts used when trying to explain what spoken, symbolic interaction is, and (2) research designed to fill gaps in the theoretical and conceptual systems adopted when trying to explain or predict how some features of communication interact with and relate to other features under the conditions of orality. The more precise concepts and tighter theoretical constructs the conferees said must be sought are precisely what I need when trying to perform the functions of a rhetorical critic. It appears, then, the conference urged that research be directed toward just such theoretical matters as are most important if scholars in the rhetorical-critical mold are to do their work better.

The detailed priorities set forth in the report also seem to be necessary if critical perceptions of spoken rhetoric are to become

humanly significan; *Recommendation 28* ends by saying that special efforts should be focused on developing the outlines of speech-communication theories. I fear that is only too true. One hears much talk about rhetorical theories and communication theories. Are there really any bodies of data deserving such grand titles? Scholars may only be talking about eclectic collections of maxims and information "bits" *about* rhetoric and general communication. In any case, the state of affairs regarding this matter will not be known until it has been made a main order of business to correlate systematically

... scholars know and what they dare to guess, to see whether these items do or do not form comprehensive ways of viewing spoken communication. How else can researchers clearly identify the gaps in their conceptualizations and discover what further information about spoken communication they require? In this process of sketching and fleshing outlines of theory critics can contribute by examining their own premises carefully, for to make any holistic judgment on the qualities and worths of an event involving speech every critic must have acted *as if* he understood the interplay of the forces studied. Let critics, then, accept the assignment suggested at New Orleans; by so doing, both criticism and behavioral investigations are likely to be improved.

A second priority is expressed in *Recommendation 29* which encourages research that concentrates on understanding speech and response as on-going, interactive *process*. As Auer has pointed out, the historian as an historian can only set out the context of spoken communication. This is not enough for our understanding. For any critic, as for any behavioral scientist, the question remains: What interactive processes occurred with what consequences *within* the neatly defined context? Because both critical and scientific knowledge have too long been stifled by considering "a speech" or "a message" as a *thing*, one must applaud the conference's wish that analysis of oral communication as process receive very high priority when choosing and designing our research. Hopefully, rhetorical critics will put their minds to this task as the New Orleans conferees promised to do.

Recommendation 30 calls for special attention in research to understanding the variables that define the inner natures of messages. From one point of view, this is a call for putting our scientific talent to work on speech criticism. Not only would that help critics, but if the recommendation were taken as a general charge to the entire profession, it would become a salutary reminder to all scholars that if they allow their interest in the contexts of speeches, dramas, and the like to minimize their attention to the speaking and

responding, the playing and responding, they abandon the central problem that justifies being associated together in the first place.

Calling in *Recommendation 31* for research that relates knowledge of speech-communication to knowledge developed in other areas of study, the conferees at New Orleans were thinking particularly of relating our knowledge to knowledge being developed in anthropology, psychology, sociology, and like subjects. From the view of a rhetorical critic, the vision appears to require a little expansion. There are philosophical theories and concepts, literary theories and concepts, historiographical theories and concepts that can be refined if our knowledge of speech-communication is brought to bear on them—and, of course, the reverse is true. Some of our critics have already accepted this objective-in-research; the increasingly fruitful interaction among rhetoricians and philosophers is a case in point and a proof of the wisdom of the recommendation coming from the conference at New Orleans.

Finally, when the conferees at New Orleans "encourage attempts to extend the generalizations from speech-communication research to pressing social and intercultural problems," their injunction is just as needful among rhetorical critics as among those who apply the methods of the social sciences. Ever since entering this profession, I have heard it alleged with only too much truth that historical-critical studies and experimental studies in our field frequently ask inconsequential questions and arrive at conclusions that enlighten no one. My valued former colleague, Herbert Wichelns, was prone to observe from time to time after reading one of our journals, "I hope you have read the new article on _____. One of our esteemed colleagues has discovered a speaker who had some ethos." Sadly, one did not need to know whether Wichelns had been reading an experimental or an historical-critical "research" paper. It could have been either.

Our colleagues at New Orleans seem to be saying, among other things: "If research has little prospect of producing knowledge of some usefulness to someone in our time, it ought to be given low priority indeed." They are not saying: "The only research of high priority is the 'hot problem' of this day and hour." They spent considerable time on *Recommendation 32*. As I understood their discussion, the probable, long-haul value of information to be sought had top priority in their valuation of research problems, immediately after that came the probable usefulness of information in solving contemporary problems. There appears to be no difficulty in adopting this kind of priority for rhetorical studies.

The call from our colleagues who met at New Orleans is one which

must be accepted if scholars in this profession are to make contribu-
tions to knowledge. It is one to which many researchers, regardless
of their methods of inquiry, have been responding when they
have worked at their best. But it is also one to which scholars can re-
spond more constructively than in the past if they focus as sharply as
this conference did on what our central business is: to understand
better the nature of spoken, symbolic interaction.

From a member of the Speech Association of America who had op-
portunity to listen in on this conference from its beginning to its end,
a final observation is in order. The conference's report does not ap-
pear to be one that tries to identify *all* of our profe   onal concerns. It
does seem to say that, in our research and in our training of research
specialists, we ought to keep in mind that our common concern with
understanding spoken, symbolic interaction requires scholars to de-
pend on one another's teaching and discoveries, and that because this
is true certain questions and goals in research ought to be preferred
over others. As a member of this Association and as a rhetorical
critic, I applaud the conference for focusing attention on our com-
mon rather than on our disparate concerns and for recommending
priorities in research that are likely to drive researchers toward fund-
amental rather than peripheral inquiries. Scholars in this profession
will be wise to heed the conference's implicit message, that the kinds
of questions asked in research are in the last analysis more important
to our future than the procedures by which answers are sought.

Questions and Responses Following the Three Perspective Papers

[*Editors' Note:* The audience was given an opportunity to ask questions of those presenting the three perspective papers immediately after they were completed. The questions and responses to them are reported in the material which follows.]

Question: The panelists have established the fact that they agree with the New Orleans recommendations. My question, however, is whether or not—and if so, in what ways—agreeing with the recommendations really will change the behavior and scholarship of the panelists and the kinds of persons whom they represent?

Mr. Auer: There seems to be an implication in this question to which I take exception—that the historical scholar in the past has had no concern with other approaches to scholarship. For myself, when I have been involved in applying the historical method, I have been more than a little bit curious about finding other ways of making more valid—or seemingly more valid—the conclusions that I would reach by the traditional historical method. To an extent, therefore, in pursuing historical studies, I would propose to continue to make use of resources from other methodologies. I think that it would be fair to say that my sophistication in doing so will be augmented as a result of the New Orleans conference. I should add that in this I speak for myself. There are limitations, of course, in the data available when one is working, for example, on the campaign of 1868. But I think that all of us feel that conclusions are

stronger when several different methods of analysis can be employed.

Mr. Arnold: The question is not whether these recommendations are a complete blueprint for my work. They certainly are not. My point is that unless my colleagues, who can do certain things that I cannot do, have the kind of thrust implied by the New Orleans conference, I shall be incapacitated. Since I am not a scientist, and since I cannot test my hypotheses with the kind of scientific rigor that John Bowers was talking about, unless I have help from other people—from people who are also interested in spoken, symbolic interaction—I will not grow in my efforts. I cannot grow professionally unless my profession adopts this thrust—not to the exclusion of others —but in concert with others.

Mr. Bowers: One should observe that the recommendations of the New Orleans conference are not completely new. Obviously, those recommendations went to New Orleans in the minds of some of the participants. I do think, however, that the recommendations call attention to and encourage innovations which have a good bit of newness about them. For example, more and more at conventions and among our own graduate students, I see attempts to apply contemporary communication theory to communication problems of the past. To me, this is a very encouraging thing. There is value in historical studies in taking contemporary theory—theory based on empirical studies—and attempting to project backwards from that theory. This checks the adequacy of the theory in relation to historical problems. It seems to me that this is the kind of thing that the recommendations encourage and, although they are not entirely new, they should stimulate a movement that is getting underway and that appears to have a great deal of potential.

Question: This question is for John Bowers. What sort of intellectual sustenance does a researcher of your persuasion get from the historian and/or the critic?

Mr. Bowers: I am not certain that I am the right person to answer this question, but I feel that some of my own best work has been done in collusion with other kinds of researchers. To be specific, I think that one of my best pieces of research was the paper on metaphor that I did in collaboration with Michael Osborn; his approach is almost entirely that of the historian-critic.

Mr. Arnold: That particular piece of research makes one of the

most pointed observations about rhetorical theory that I have ever encountered.

Question: It would be my assumption that if the recommendations of the New Orleans conference are carried out, a scholar 100 years from now who is attempting to research the campaign of 1968 would be in a substantially better position than the scholar of today who is attempting to research the campaign of 1868. Is this a reasonable surmise?

Mr. Auer: A hundred years from now, a student of the history of our field will also express some surprise that these issues were ever regarded as controversial.

Question: Might it not be profitable to consider the application of perhaps three different research approaches to a particular communication problem—that of speech for the disadvantaged, for example? This might be an area in which three different kinds of interests might converge.

Mr. Arnold: One of the significant things that happened in New Orleans is that, after the first day and a half, the conferees passed the point where they were asking what a specific method would accomplish. They reached a point which I think is a fundamental one in all research, they now asked the question of the researcher, "What is your problem?" When you can really identify a problem or a question, then you apply any and all methodologies that hold promise. In most areas of research in our field we are just reaching that point where we are ceasing to look for a question to which we can apply a particular method; instead, we are starting with a question and then making judgments about appropriate methodologies. A careful articulation of the question—whether in studies of the disadvantaged or in any other area—should lead to the selection of appropriate methods.

Summaries of Group Discussions Regarding the New Orleans Conference Recommendations and Perspective Papers

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[*Editors' Note: After the audience at the general session had an opportunity to ask questions of the three scholars presenting perspective papers, this general session was concluded. Then, individuals attending the Summer Conference were encouraged to participate in discussion groups identified with one of three areas of scholarship: historical, critical or behavioral. Each of the three groups was requested to discuss the implications of the recommendations and how they might be implemented. The comments below are summaries by reporters for the groups, presented at another general session which followed the discussions.*]

Historical Scholarship Discussion Group's Summary

The historical group concerned itself with the meaning of the recommendations of the New Orleans conference and with an interpretation of the way in which historically-oriented scholars can live with such recommendations. Very briefly, the observations were as follows. One of the first questions raised concerned whether the recommendations imply a break with the past. Do the recommendations imply an emphasis on contemporary problems, a focus on visible data of the present, and/or a shift in the emphases or historical locales of research? It was decided that they did not—that there was nothing in the recommendations with which historical scholars could not live comfortably. Moreover, the group agreed that an exclusive focus on contemporary issues was not intended, but

rather the recommendations imply different ways of dealing with and looking at historic problems—probably from a contemporary stance.

Secondly, the group concurred that some issues become more important historically when related to contemporary dialogue. There was agreement that the methods of behavioral scientists could be used appropriately for some types of historical research; critical scholars can learn from the cumulative thrust of the behavioral scholars, just as their hypotheses are derived frequently from historical data.

In terms of the overall thrust of the New Orleans conference, the group felt that the meaning perhaps was stated in these words: Can the house of "speech" accommodate these views? These views were perceived as a set of ideas, with behavioral scholars asking if historical scholars could live with them, rather than as a credo to which the profession should now subscribe. The historical group noted that future conferences dealing with historical-critical issues could add other dimensions to the New Orleans recommendations from which a new, composite rationale could be developed. The New Orleans conference recommendations were viewed as a very important, valuable position paper. It was decided that the focus in the recommendations was not on academic priorities, but rather on scholarly relationships.

Finally, a portion of the group's discussion was concerned with the title, "speech-communication." No resolution of this craggy problem was offered. Continued study of the name was suggested. However, if the name were changed, the group agreed the change would not necessarily indicate a change in emphases, relationships or priorities. It was noted that perhaps the matter should be studied from a pragmatic point of view, since communication is being considered in so many contexts on the campus. Many scholars in this field are being asked what those in speech are doing in this realm of communication. The historical group felt that, following additional study, some accommodation in the direction of the recommended name change probably would prove helpful.

James McBath
Reporter

Behavioral Scholarship Discussion Group's Summary

The behavioral group began with a discussion of the storage of data and information retrieval, which will not be reported here.

Jack Matthews then asked two questions which gave focus to the remainder of the discussion. These questions were: (1) How can one go about implementing the New Orleans recommendations for the present generation and futu. generations of scholars? (2) What would be the chief resistance encountered in such efforts?

As one might expect, the responses to these two questions were quite varied. There was particular reaction to *Recommendation 40* which specifies the program for the first year of graduate study. As one person put it, this recommendation is likely to encounter "dissonant interaction." There seemed to be a general consensus that, even though it is ambitious, the recommendation does offer a practical curriculum for the first year of generalized study which would be followed by specialization.

The group then discussed several schisms or conflicts within the profession. One of these is the seeming conflict in the speech-communication field between notions regarding the emphasis to be placed on performance and content in courses. There seemed to be a consensus that performance and content are not mutually exclusive.

A second conflict revolved around the question of whether the New Orleans participants regarded themselves as scientists or rhetoricians. The orientation of the conference and of its participants was in the direction of the scientific study of communication. The recommendations are directly applicable to the production of that kind of scholar and scholarship. However, the group concurred that most of the recommendations are generalizable to many of the other areas represented in the Speech Association of America.

The third area of schism revolved around the terms "speech," "communication," and "speech-communication." A number of testimonials from people at various institutions were presented concerning the beneficial effects of name changes involving "communication." Very little testimony was offered in favor of retaining the name "speech." Stanley Paulson suggested that it would be worthwhile for the Association to undertake a study to determine just where the various departments around the country stand regarding the matter of a name change. Such a study should also include the names of divisions within departments. There was some discussion of the motives that impel persons to cling to one designation or another; it does not seem particularly profitable to review that discussion here.

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John Waite Bowers
Reporter

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Critical Scholarship Discussion Group's Summary

Being properly critical, the critical group came to no conclusions. One can only report a kind of benign disquiet of spirit that manifested itself in the discussion. This disquiet can be summarized in three points that seemed to crystallize. The first is that the concept of what constitutes the education of a professional, as Carroll Arnold put it, is still not sufficiently clear from the New Orleans recommendations. The group felt this subject merits further attention.

Secondly, some misgiving was expressed about the apportioning of time allotted the study of rhetoric in graduate education in the New Orleans report. There was considerable disagreement on this issue.

Finally, there was expressed, more than once, considerable exaltation in the efforts that this kind of enterprise seems to exhibit —efforts at reconciliation—efforts to achieve an intellectual homogeneity from enterprises that heretofore have been fragmented. Some note was taken in the discussion of the fact that, in the past, some areas formerly associated with the Speech Association of America have broken away seemingly because there had been insufficient focus on matters of common interest and concern. The New Orleans conference, at last, gives promise of a candid confrontation relative to the common elements shared by persons performing different tasks. In that way, the report may well serve to inhibit further fragmentation.

Edwin Black
Reporter

APPENDIX A

Abstracts of Papers Prepared for the Interdisciplinary Colloquium Sponsored by the Speech Association of America and the United States Office of Education

RACINE, WISCONSIN

October 10-11, 1967

APPENDIX A

Abstracts of Papers Prepared for the Interdisciplinary Colloquium Sponsored by the Speech Association of America and the United States Office of Education

Linguistics Today and the Field of Speech

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University of Minnesota

Linguistics, a complex field with many subdisciplines, today is in a state of high activity. In addition to continued research and investigation in old and familiar areas, exciting theories and a major shift of direction have appeared in the field of grammar.

The dominance of structural linguistics since the early 1930's has been successfully challenged by several new theories of grammar, particularly one which immediately springs from the work of Zellig Harris and, specifically, of Noam Chomsky. This theory, known as transformational generative grammar, reverses the objective, data-collecting, taxonomic direction of structural grammar. Instead of inductive hierarchical classifications of observed linguistic phenomena, transformatiohal grammar begins with an abstract concept of "sentence" (in effect the total inventory of all possible sentences in a language) and proceeds deductively through ordered rewriting and transformation rules to a given grammatical sentence. It is a theory which does more than describe a given; it attempts to account for the existence of all grammatical sentences and no non-grammatical ones. Research in this powerful grammar is extensively carried on today with the support of half a dozen federal agencies and other organizations.

Other grammatical theories are also assuming major importance, particularly tagmemics and stratificational grammar. The latter is significant because it is the first to attempt a systematic approach to lexical meaning that links it with the grammatical structure.

In addition to grammatical theory, other fields in which research activity is more or less pertinent to speech (because its ultimate basis is language study) are linguistic universals, linguistic geography, English as a second language and as a secor. 'ialect, children's language, stylistics, and historical linguistics. . . several of these areas, needed research would be cognate with needed research in speech. However, much information already collected in linguistics is relevant to existing practice and teaching in speech and may be considered as justifying reconsideration of certain aspects of the speech discipline.

A Socio-Linguistic Approach to Socialisation:
With Some Reference to Educability

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The relationships between the social classes, linguistic codes and
the ability of lower, working-class children to benefit from education
are discussed in this paper. Attention is focused on family role sys-
tems emphasizing differences and similarities between "person-
oriented" and "object-oriented" linguistic codes. The relationships
between family role systems, procedures of social control, and open
and closed communication systems also are considered. Changes are
identified in the division of labour and in the belief system with re-
spect to family role systems. Finally, some consequences of linguistic
code switching are examined.

Conflict and Its Resolution

MORTON DEUTSCH
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The major points of the paper may be summarized as follows.

1. There are two major types of conflict resolution processes: co-operative and competitive. Although neither type is found in its pure form, without the presence of the other, one type or another will usually predominate and will give rise to characteristic manifestations in communication, attitudes, perception, task orientation and outcomes. Each process tends to be self-confirming and self-perpetuating so that each tends to persist despite a change in its originating conditions. This is so because the communication patterns, attitudes, perception task orientation, and outcomes which are evoked by a given process tend to elicit the very same process which evokes them. Hence, one way of eliciting a cooperative process is to attempt to induce the communication patterns, attitudes and so forth which help to support such a process.

2. There are several major, inter-related types of factors which help to determine which type of conflict resolution process will dominate:

(a) The size (scope, importance, centrality, etc.) and rigidity of the issue in conflict: the greater the size and rigidity the more difficult it will be to resolve cooperatively. Many determinants of conflict size could be listed. For example, an issue which bears upon self-esteem or change in power or status is likely to be more important than an issue which does not. Illegitimate threats or attempts to co-erce are likely to increase the size of the conflict. Similarly, some determinants of issue rigidity can be identified. Thus, an issue is more rigid if it permits no substitute satisfactions and there is only enough for one party. "Victory over the other" is a rigid issue.

(b) The relative strength and salience of the existing cooperative and competitive links between the conflicting parties: the stronger and more salient the cooperative bonds are the less likely it is that they will engage in a competitive process. The total strength of the cooperative bonds would be a function of the number of bonds and

the strength or importance of each bond. There are obviously many different types of bonds that could be enumerated: superordinate goals, mutually facilitating interests, common allegiances and values, linkage to a common community, etc.

It is evident that the size of conflict and relative strength of cooperative bonds must be considered jointly in making predictions. Conflict is likely to be resolved cooperatively in situations where the parties have less at stake in a conflict than they have in the ongoing relationship between them or in the community which has generated rules and procedures for regulating conflict.

. (c) The expectation that the outcome of one process or another will be more unsatisfactory or less valuable than the other. Many factors influencing such an expectation could be listed: the prior experience of success and failure with the two processes, the relative power of the parties involved, the skills the parties have in each of the two processes, etc.

(d) The internal cohesiveness of each of the parties in conflict: co- operative conflict resolution is less likely when either of the parties is characterized by internal dissension or factionalism. Internal conflict may stimulate external conflict as a tactic to increase cohesiveness, or it may lead to instability making it difficult to work out a durable agreement, or it may tempt the other side to take advantage of internal weakness.

(e) The attitudes, strength, and resources of interested and relevant third parties. For example, a conflict is more likely to be resolved cooperatively if powerful-prestigeful third parties encourage such a resolution and help to provide resources (institutions, facilities, personnel, social norms and procedures) to expedite discovery of a mutually satisfactory solution.

Communication Research:
The Tie that Binds—But Loosely

MALCOLM S. MacLEAN, JR.
Professor and Director, School of Journalism
University of Iowa

A cross-section of communication research presented at a recent Association for Education in Journalism convention and in a recent issue of *Journalism Quarterly* is surveyed in this paper. A description of the sources from which research ideas are drawn is presented through: (1) an abridged bibliography of works cited by the convention speakers, and (2) the bibliography in two issues of *Journalism Quarterly* compiled on the basis of probable interest to that journal's readers. Journals cited in bibliographies in the *Journalism Quarterly* are compared with those included in a bibliography for "rhetoric and public address" in *Speech Monographs*. Titles of courses and titles of sequences or programs in speech and journalism also are examined to determine how these relate to each other, and to communication research efforts in each field.

These investigations, in addition to several less formal searches, lead to several tentative conclusions.

1. In both speech and journalism, teachers make little use of research and *vice versa*.
2. Much scientific research in journalism and speech devotes little attention to the most crucial communication problems of our time.
3. It seems that, in those problem areas where scientific research has been most successful, there is a good deal of transformation and translation up and down from the most concrete "real-life" problems to the highly abstract theoretical speculation associated with "basic" research. It appears that many scientific researchers jump too quickly into loose abstractions (for status reasons, in part). At the same time, others jump too quickly into "practical" research (for money reasons?) which turns out to be quite impractical since it permits little or no generalization.

4. Though many scholars in speech and journalism are working on similar problems, they apparently pay very little attention to each other's work.
5. Speech and journalism scholars engage in too much borrowing and imitating, and too little creating and inventing.

Communication Through Institutions and Social Structures

HERBERT MENZEL
Professor of Sociology
New York University

The sender-channel-receiver model of communication is elaborated for use in human mediated communication, communication through institutionalized channels, communication to audiences, mass communication, and diffusion through social networks. Some neglected areas of research are specified.

The concept of "channel" is expanded by applying it to any agency that bridges a communication gap. The concept of "gap" is expanded to include such obstacles as a temporal gap between generations, a linguistic gap, a sophistication-level gap, and an address gap. Address gaps are bridged by such channels as information specialists, selective dissemination systems, and literary agents.

The institutional nature of most channels is stressed. Emphasis is placed on the dependence of channels on a complex of customary activities, roles, and divisions of labor, which evolve by being interlocked with other customary behavior patterns in a given society. Channels, which are accessible to large numbers of receivers for each single communication act, while leaving uncertain the reaching of any particular receiver by a given message, are singled out as "audience communication channels."

Audience communication may be regarded as "mass communication" to the extent that the communicating agent is compelled to broadcast his messages to the audience as though it were a mass, i.e., in an undifferentiated manner. The separate dimensions of this manner are discussed, and whether or not communication is "mass communication" is seen as a matter of degree in a multi-dimensional property space. The label "quasi-mass communication" is used for those forms of communication which satisfy some, but not all, of the criteria of mass communication as defined in this paper. This includes in varying degrees the use, as communication channel networks, of: closed circulation journals, corps of salesmen and party canvassers, groups of missionaries, groups of speakers sent out by

a central organization, and others. The social importance of many of these forms of communication and their varying capacities are raised as research questions.

More knowledge is needed about the culture of information seeking and about the social geography of communications: who will talk to whom about what? Social geography of communications seems to be of special significance because of the mass-effect nature in which social structure may determine the extent to which messages are spread critically or indiscriminately. Data from rumor studies, diffusion experiments, and studies of the spread of news suggest in this light that various social communication cleavages may have a greater impact on events than might be suspected.

On Pre-Theoretic Behavioral Science

RICHARD S. RUDNER
Professor of Philosophy
Washington University

This paper is concerned with the problems of relating the notions of basic and applied disciplines, of theory, and of research and practice in the behavioral sciences. In the first section the essay provides a discussion of three distinctions: those between *basic* and *applied* disciplines, between the nature of *research* and of corresponding *practices*, and between *projective* and *non-projective* disciplines. The application of all these distinctions requires some extant body of behavioral science theory; accordingly, the second section of the essay attempts to assess the present status of theory in behavioral science. One "theory" of social action, Talcott Parsons', is chosen for detailed scrutiny. Assuming that theoretical formulations such as Parsons' General Theory of Social Action are not easily amenable to evidential test, the essay then raises the question whether non-evidential *inductive* weights, such as the degree of structural simplicity of a theory, may be employed to assess the acceptability of Parsons' work. One problem to be obviated is what kind of theoretical system formulations like Parsons' should be construed to be. Four plausible systems are explored and questions about the problems of simplicity assessments are raised for each.

Notes and Comments for SAA-USOE Interdisciplinary Colloquium

GEORGE G. THOMPSON
Professor of Psychology
Ohio State University

As viewed by a developmental psychologist, the following appear to be significant problem areas in the study of language and speech: the growth of psychological meanings assoc'. ed with language symbols in different social settings, the psychologically unique significance of oral-aural communication, social conditions antedating the transition from egocentric to socialized speech and the limits of language (including self-communication) as a control-system for emotional responses. Other promising areas of research include delineation of the parameters of language usage by means of synthetic modes of communication symbols introduc' J under known conditions of experimental controls, the *Weltanschauung* hypothesis, and sex differences in language growth. Also discussed in this broad framework are the following specific problems: the role of redundancy in controlling the fluidity and integration of speech, the public school's responsibilities in language instruction, the desirable correlation between perceptual experiences and language usage, and various educational procedures for adapting language instruction to the needs of the individual learner.

Speech Communication and Politics

WILCOMB E. WASHBURN
Chairman, Department of American Studies
Smithsonian Institution

The paper suggests methods of developing a conceptual model which recognizes speech communication as a process rather than as a static expression of meaning. The idealized model incorporates, in addition to traditional aspects of verbal meaning, related non-verbal aspects of situation and context. Particular stress is placed on the social context of verbal communication. Studies to uncover the correlation between behavior (as expressed in physical action) and attitude (as revealed in verbal expression) are recommended. The personal-social context, within which speech by intellectuals is embedded, is cited as a factor rarely examined by intellectuals and as one requiring analysis.

Within the larger philosophical context of speech, a trend to a more morally-oriented dialogue is also posited. The relationship between issue and image in political discourse is discussed, and emphasis is placed on the role of political symbols as an expression of the candidate's personality rather than rational political issues. Television "spots" prepared by Doyle, Dane and Bernbach for the Johnson campaign of 1964 are cited to illustrate the thesis. Suggestions are made for content analysis studies of political speech, perhaps utilizing the General Inquirer system at Cambridge, Massachusetts. Suggestions for the study of facial characteristics of speakers and of their platform style as elements of speech communication also are given. The problem of the meaning of words is discussed and suggestions are made for defining terms like "pacification" and "will of the people" in quantitative as well as in verbal terms.

APPENDIX B

**Listing of Participants and Observers
Attending New Orleans Conference**

APPENDIX B

Listing of Participants and Observers
Attending New Orleans Conference

Arnold, Carroll C.   (Ph.D., University of Iowa, 1942)
   Professor of Speech, Pennsylvania State University, University Park,
   Pennsylvania 16802
   (Observer)
Arnold, William E.   (Ph.D., Pennsylvania State University, 1966)
   Assistant Professor of Speech, University of Connecticut, Storrs, Con-
   necticut 06268
   (Chairman, Graduate Instruction in Speech-Communication Drafting
   Committee)
Auer, J. Jeffery   (Ph.D., University of Wisconsin, 1947)
   Professor of Speech and Chairman, Department of Speech and Theatre,
   Indiana University, Bloomington, Indiana 47401   ·
   (Chairman, General Sessions, and Member of Advisory Committee)
Barker, Larry L.   (Ph.D., Ohio University, 1965)
   Assistant Professor of Speech and Assistant Director, Communication
   Research Center in the Department of Speech, Purdue University,
   Lafayette, Indiana 47907
   (Assistant Project Editor)
Becker, Samuel L.   (Ph.D., University of Iowa, 1953)
   Professor of Speech and Chairman Elect, Department of Speech and
   Dramatic Art, University of Iowa, Iowa City, Iowa 52240
   (Member of Advisory Committee)
Black, John W.   (Ph.D., University of Iowa, 1935)
   Professor of Speech and Director, Speech and Hearing Science, Ohio
   State University, Columbus, Ohio 43210
   (Presented Position Paper)
Bowers, John Waite   (Ph.D., University of Iowa, 1962)
   Associate Professor of Speech and Dramatic Art, University of Iowa,
   Iowa City, Iowa 52240
   (Responded to Position Paper and Chairman, Research Priorities
   Drafting Committee)
Brown, Irving M.   (Ph.D., Ohio State University, 1961)
   Theatre Education Specialist, United States Office of Education. Arts
   and Humanities Program, Washington, D. C., 20202
   (United States Office of Education Staff Liaison)

Carmichael, Carl W.   (Ph.D., University of Iowa, 1965)
   Assistant Professor of Speech, University of Oregon, Eugene, Oregon 94703
Clevenger, Theodore, Jr.   (Ph.D., Florida State University, 1958)
   Professor of Speech and Chairman, Department of Speech, Florida State University, Tallahassee, Florida 32306
   (Presented Position Paper and Member of Advisory Committee)
Cronkhite, Gary L.,   (Ph.D., University of Iowa, 1965)
   Associate Professor of Speech and Psychology, and Director, Communication Research Laboratory, Illinois State University, Normal, Illinois 61761
   (Presented Position Paper)
Dance, Frank E.X.   (Ph.D., Northwestern University, 1959)
   Professor of Communication and Director, The Speech Communication Center, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin 53201
   (Responded to Position Paper)
Darnell, Donald K.   (Ph.D., Michigan State University, 1964)
   Associate Professor of Speech, University of Colorado, Boulder, Colorado 80302
   (Responded to Position Paper)
DeVito, Joseph A.   (Ph.D., University of Illinois, 1964)
   Assistant Professor of Speech, Hunter College of the City University of New York, Bronx, New York 10468
Dietrich, John E.   (Ph.D., University of Wisconsin, 1945)
   Assistant Provost and Director of the Educational Development Program, Michigan State University, East Lansing, Michigan 48823
   (Project Director)
Ehninger, Douglas   (Ph.D., Ohio State University, 1949)
   Professor of Speech, University of Iowa, Iowa City, Iowa 52240
   (Observer)
Goldberg, Alvin A.   (Ph.D., Northwestern University, 1959)
   Professor of Speech, University of Denver, Denver, Colorado 80210
Goyer, Robert S.   (Ph.D., Ohio State University, 1955)
   Professor of Interpersonal Communication and Director, Center for Communication Studies, Ohio University, Athens, Ohio 45701
Haiman, Franklyn S.   (Ph.D., Northwestern University, 1948)
   Professor of Public Address and Group Communication, and Chairman, Department of Public Address and Group Communication, Northwestern University, Evanston, Illinois 60201
   (Responded to Position Paper)
Hall, Robert N.   (Ph.D., University of Michigan, 1963)
   Associate Executive Secretary, Speech Association of America, Statler Hilton Hotel, New York, New York 10001
   (Observer)

Harms, L. S.   (Ph.D., Ohio State University, 1959)
Associate Professor of Speech-Communication. University of Hawaii, Honolulu, Hawaii 96822

Higginbotham, Dorothy C.   (Ph.D., Northwestern University, 1961)
Associate Professor of Speech, Southern Illinois University, Carbondale, Illinois 62901

Johnson, F. Craig   (Ph.D., University of Wisconsin, 1958)
Associate Professor of Communication. Michigan State University, East Lansing, Michigan 48823
(Member of Advisory Committee)

Kibler, Robert J.   (Ph.D., Ohio State University, 1962)
Associate Professor of Speech and Associate Director, Communication Research Center in the Department of Speech, Purdue University, Lafayette, Indiana 47907
(Project Editor)

Matthews, Jack   (Ph.D., Ohio State University, 1946)
Chairman, Department of Speech and Director, Graduate Study in Audiology-Speech Pathology, University of Pittsburgh, Pittsburgh, Pennsylvania 15213
(Observer)

Miller, Gerald R.   (Ph.D., University of Iowa, 1961)
Associate Professor and Director of Graduate Studies, Department of Communication, Michigan State University, East Lansing, Michigan 48823
(Presented Position Paper)

Nebergall, Roger E.   (Ph.D., University of Illinois, 1956)
Professor of Speech and Chairman, Department of Speech, University of Oklahoma, Norman, Oklahoma 73069
(Responded to Position Paper)

Osborn, Lynn R.   (Ed.D., University of Kansas, 1962)
Associate Professor of Speech and Assistant Dean of Faculties for Research, University of Kansas, Lawrence, Kansas 66044

Paulson, Stanley F.   (Ph.D., University of Minnesota, 1952)
Professor of Speech and Chairman, Department of Speech, Pennsylvania State University, University Park, Pennsylvania 16802
(Responded to Position Paper)

Piche, Gene L.   (Ph.D., University of Minnesota, 1967)
Assistant Professor, Department of Speech, Communication and Theatre Arts; Department of Secondary Education, University of Minnesota, Minneapolis, Minnesota 55113

Ragsdale, J. Donald   (Ph.D., University of Illinois, 1964)
Assistant Professor of Speech, Louisiana State University, Baton Rouge, Louisiana 70803

Roever, James E.   (Ph.D., University of Iowa, 1962)
Assistant Professor of Public Address and Director, Quantitative Research in Communication Arts, and Director of Research Elect, Speech

Association of America, Northwestern University, Evanston, Illinois 60201
(Observer)

Scheidel, Thomas M.   (Ph.D., University of Washington, 1958)
Associate Professor of Speech, University of Illinois, Urbana, Illinois 61801

Sereno, Kenneth K.   (Ph.D., University of Washington, 1964)
Assistant Professor of Speech, University of Washington, Seattle. Washington 98105

Smith, Raymond G.   (Ph.D., University of Wisconsin, 1950)
Professor of Speech, Indiana University. Bloomington, Indiana 47401
(Responded to Position Paper)

Walker, Robert H.   (Ph.D., University of Pennsylvania, 1955)
Director, Division of Education and Public Programs, National Endowment for the Humanities, Washington, D. C. 20506
(Observer)

Williams, Frederick   (Ph.D., University of Southern California, 1962)
Associate Professor of Speech and Communicative Disorders, University of Wisconsin, Madison, Wisconsin 53706
(Responded to Position Paper)

Windes, Russel R.   (Ph.D., Northwestern University, 1959)
Professor of Communication and Chairman, Department of Communication Arts and Sciences, Queens College of the City University of New York, Flushing, New York 11367
(Chairman, Issues and Responsibilities Drafting Committee)

Work, William   (Ph.D., University of Wisconsin, 1954)
Executive Secretary, Speech Association of America, Statler Hilton Hotel, New York, New York 10001
(Project Coordinator)

APPENDIX C

**Conference Format and Instructions
Sent to Conference Participants**

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Conference Format and Instructions
Sent to Conference Participants

January 12, 1968

MEMORANDUM

To: SAA-USOE Research Conference Participants

From: John E. Dietrich, Principal Investigator SAA-USOE Research
           Conference

Subject: SAA-USOE Research Conference

The following paragraphs should answer many of your questions about your
roles and responsibilities at our forthcoming SAA-USOE Research Con-
ference in Speech-Communication to be held February 11-16 at the Fon-
tainebleau Motor Hotel in New Orleans.

General Information

The Makeup of the Conference

1. There are 24 sponsored participants. The participants include three
   writers (the fourth, Ted Clevenger, is a member of the Advisory Com-
   mittee), 10 responders and 11 general participants. All participants serve
   as work-group discussion leaders and general participants throughout
   the conference.

2. In addition to the sponsored participants, there will be in attendance
   the four-member Advisory Committee (Auer, Becker, Clevenger, John-
   son), who will serve as participants without specific assignment; the
   five-member conference staff (Barker, Brown, Dietrich, Kibler, Work),
   who will serve as participants without specific assignment but primarily
   will take care of the procedural aspects of the conference, and several
   observers from the Speech Association of America, from private founda-
   tions, and from federal agencies. This group should not exceed 15 or 16.

General Purposes

3. The general purposes of the conference have been outlined in the proposal, a copy of which you should have. If for any reason you do not have your copy, please write Bill Work. It is the hope of the Advisory Committee that the results of the conference will be in readily publishable form. A minimum publication should include the four research papers and responses, a charge to the field of speech-communication including definitions, parameters, issues and responsibilities: the development of research priorities, the implications for graduate training and the ways by which the field of speech-communication can make a greater contribution to education and society.

Technical Matters

4. During the next couple of weeks you will be receiving from Bill Work the research papers and certain other materials which the Advisory Committee feels may be helpful in preparing for the conference. Please study them with care.

5. Each of you has been asked to arrive ready for work by 6:00 p.m., Sunday evening, February 11, for a general get-together and briefing session. Similarly, each of you is asked to remain through the conclusion of the conference at 12:00 noon on Friday, February 16.

Format of the Conference

Since one of the principal goals of the conference is to develop a set of materials which fulfill the objectives laid down in the proposal, the Advisory Committee has decided to provide a reasonably high degree of structuring for the conference. The format which follows provides a number of advantages.

1. The structure is aimed at the production of a working document.

2. The format requires active participation on the part of each and every member at the conference. For example, each member writes a major paper, responds to a major paper, or is a chairman of a work group.

3. The format rotates the responsibilities so that every member of the conference work groups works directly with almost every other participant at the conference.

4. The format rotates the work groups of eight people by fours so that each individual receives the additional stimulus of working with many other individuals.

5. The format follows one pattern for the first two and one-half days and then radically changes the pattern for the last two and one-half days.

6. The format defines the principal areas of concentration as they relate to each of the major topics. Work groups attack the areas of concentra-

tion for each of the major topics. The areas of concentration are:

    a. *Issues and Responsibilities.* On each major topic, work groups will be concerned with definitions, boundary limits of the research areas, relationships to other fields, issues raised by the preceding, responsibilities of researchers to the field of speech-communication, and strategies for attack.

    b. *Research Priorities.* On each major topic, work groups will be concerned with research priorities and examples of research questions.

    c. *Graduate Instruction.* For each major topic, work groups will consider the implications for graduate instruction.

7. The format provides an intensive work day of only six hours, which will provide ample opportunity for further informal discussions in the evening, or, if participants wish, complete freedom.

The Assignment of Participants

Each participant is assigned a number as indicated on the attached list. In turn, the participants are assigned to work groups as suggested in the attached chart.

Operation of the Format

1. For the first hour of Session 1, Monday morning; Session 2, Monday afternoon; Session 3, Tuesday morning; and Session 5, Wednesday morning, the structure involves an oral presentation from five to ten minutes in length in which the author provides the essence of the materials covered by his paper. The presentation is followed by two responses to each of the principal papers. These responses should also be from five to ten minutes in length. The remainder of this first hour will be filled by general discussion by the participants with the author and responders.

The next hour and one-half will include three work-study groups of eight people who will respond to the major topic in terms of the assigned area of concentration. At the end of this work-group session, ideas should begin to be evolved in written form in each of the areas of concentration.

The last half hour of each of these sessions will be devoted to reports of the chairmen of the study groups to the general session.

This basic process is repeated for each of the research topics or areas covered by the four papers.

2. Session 4, Tuesday afternoon, follows the same general pattern as the sessions just described. However, it is an open session at which every participant is encouraged to bring new issues, new topics, new areas and new ideas which he believes should be considered. These new areas

and ideas should be brought in *written* form. The two responders for this open session will attempt to summarize and integrate these ideas.

At the end of the first hour of this session, written materials should be available for transmittal to the work-study groups. Reports from the work-study groups will be handled in the normal way.

3. Session 6, Wednesday afternoon, indicates a complete change in format. It proposes forming three drafting committees made up of participants who have already worked in the specified areas of concentration. The drafting committees should attempt to draft an outline of a proposed document.

4. Session 7, Thursday morning; Session 8, Thursday afternoon; and Session 9, Friday morning are for reports from the drafting committees to a general session involving all participants. The draft of each report should be in the hands of all members of the conference. The general session will provide the opportunity to add, delete, review, amend and approve the drafting committees' documents.

The Responsibilities of the Participants

The Major Research Paper Authors

The four authors of the principal research papers will send their papers to Bill Work in sufficient time for duplication and distribution to all conference participants in advance of the conference. As indicated above, the oral presentation of the author should not exceed ten minutes. For the purposes of the conference as a whole, the authors are considered regular participants and will have specific assignments which can be found in the format.

The Responders

The first ten participants (see participant assignment list) will serve as responders to the major papers. Ideally, the responses should be in writing so that they can be distributed at the beginning of the conference. The oral presentation of each responder should not exceed ten minutes.

The Work-Group Chairmen

The work-group chairmen include all of the participants who are not responders, namely, numbers 11 through 24 plus responder 1. The responsibilities of the work-group chairmen will include organizing the work groups, selecting or assigning a secretary or recorder and leading the group in the development of a document. Further, each work-group chairman will report the activities of his work group to the general session.

The Drafting Committees

The drafting committee chairmen, numbers 11, 12 and 13, will work with their drafting committees to develop a document which combines or

synthesizes the previous work in the area of concentration. These final drafts will be presented at Sessions 7, 8 and 9 for review by the participants.

The General Participant

Each person at the conference is encouraged to bring ideas in written form which can be included in Session 4, Tuesday afternoon, which will cover new research areas and issues. These papers, which need not be lengthy, should be cast in the following tentative form:

(a) Introduction.
(b) Review of the most relevant literature.
(c) Identification of the most significant research problems.
(d) Suggested priorities among the research problems.
(e) Implications of your ideas for the training of graduate students.
(f) Conclusion.

The Advisory Committee has deliberately chosen a comparatively rigid structure for the conference. In the event that the participants find themselves unable to work within the framework of this structure, the Advisory Committee would be willing to modify it. It is the feeling of the Advisory Committee that it will be far easier to loosen the structure if it is found necessary than it would be to develop a structure after the conference is underway.

See you in February.

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PARTICIPANT NUMBERS

1. John W. Bowers	13. Carl W. Carmichael
2. Frederick Williams	14. Gene L. Piché
3. Frank E. X. Dance	15. Joseph A. DeVito
4. Donald K. Darnell	16. Kenneth K. Sereno
5. Franklyn S. Haiman	17. Alvin Goldberg
6. Stanley F. Paulson	18. Donald Ragsdale
7. Thomas M. Scheidel	19. Stanley Harms
8. Robert S. Goyer	20. Lynn R. Osborn
9. Roger E. Nebergall	21. Dorothy Higginbotham
10. Raymond G. Smith	22. Gerald Miller
11. William E. Arnold	23. Gary Cronkhite
12. Russel R. Windes	24. John W. Black

WORK GROUP ASSIGNMENTS BY NUMBERS

Group A-1	1	7	11	20
Group A-2	2	8	15	19
Group B-1	3	9	12	23
Group B-2	4	10	16	21
Group C-1	5	13	17	22
Group C-2	6	14	18	24

	SESSION #1 MONDAY MORNING	SESSION #2 MONDAY AFTERNOON	SESSION #3 TUESDAY MORNING	SESSION #4 TUESDAY AFTERNOON
Morning 9:00–10:00 **LARGE GROUP**	Communication Behaviors: Acquisition and Effects — John W. Black	Human Information Processing — Gerald Miller	Decision Making — Gary Cronkhite	New Areas and Issues
Afternoon 2:00–3:00	Responder #1 / Responder #2	Responder #3 / Responder #4	Responder #5 / Responder #6	Responder #7 / Responder #8
Morning 10:00–11:00 **WORK GROUP**	Issues & Resp. Chm: #11 (A-1, A-1); Res. Pr. Chm: #12 (B-2, B-1); Grad. Train. Chm: #13 (C-2, C-1)	Issues & Resp. Chm: #14 (C-2, B-1); Res. Pr. Chm: #15 (A-2, C-1); Grad. Train. Chm: #16 (B-2, A-1)	Issues & Resp. Chm: #17 (B-2, C-1); Res. Pr. Chm: #18 (C-2, A-1); Grad. Train. Chm: #19 (A-2, B-1)	Issues & Resp. Chm: #20 (B-1, A-1); Res. Pr. Chm: #21 (B-2, A-2); Grad. Train. Chm: #22 (C-2, C-1)
Afternoon 3:00–4:30				
Morning 11:30–12:00 **LARGE GROUP**	Chm: #11 / Chm: #12 / Chm: #13 — General Session	Chm: #14 / Chm: #15 / Chm: #16 — General Session	Chm: #17 / Chm: #18 / Chm: #19 — General Session	Chm: #20 / Chm: #21 / Chm: #22 — General Session
Afternoon 4:30–5:00				

	SESSION #5 WEDNESDAY MORNING	SESSION #6 WEDNESDAY AFTERNOON	SESSION #7 THURSDAY MORNING	SESSION #8 THURSDAY AFTERNOON	SESSION #9 FRIDAY MORNING
Morning 9:00–10:00	Research Methodology — Theodore Clevenger — Responder #9 — Responder #10		General Plenary Session To Review Amend and Approve Draft	General Plenary Session To Review Amend and Approve Draft	General Plenary Session To Review Amend and Approve Draft
LARGE GROUP		Drafting Session For Three Areas	of	of	of
Afternoon 2:00–3:00			Issues and Responsibilities	Research Priorities	Graduate Training

SESSION #6 — Drafting Session For Three Areas

Issues & Resp.	Res. Pr.	Grad. Train.
Chm: #11	Chm: #12	Chm: #13
Group Members	Group Members	Group Members
6	2	1
8	3	4
10	5	7
14	15	9
17	18	16
20	21	19
23	24	22

SESSION #5 — Work Group / General Session

	Issues & Resp.	Res. Pr.	Grad. Train.
Morning 10:00–11:00 WORK GROUP	Chm: #23	Chm: #24	Chm: #25
Afternoon 3:00–4:30	B-2 / B-1	C-2 / A-2	C-1 / A-1
Morning 11:30–12:00 LARGE GROUP	Chm: #23	Chm: #24	Chm: #25
Afternoon 4:30–5:00	General Session		

Drafting Committee (Sessions #7, #8, #9)

SESSION #7	SESSION #8	SESSION #9
Drafting Committee	Drafting Committee	Drafting Committee
Chm: #11	Chm: #12	Chm: #13
6	2	1
8	3	4
10	5	7
14	15	9
17	18	16
20	21	19
23	24	22
and ALL OTHER PARTICIPANTS	and ALL OTHER PARTICIPANTS	and ALL OTHER PARTICIPANTS