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AN INVESTIGATION OF CHOICE AMONG MODES OF REASONING

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AN INVESTIGATION OF CHOICE AMONG MODES OF REASONING

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AN INVESTIGATION OF CHOICE AMONG MODES OF REASONING

CHAPTER I

Introduction

The study of argumentation has long been a province of rhetoric and rhetoricians. Although modern educators do not stress the study of argumentation as did ancient and medieval educators, today's teachers in departments of English, Philosophy, and Speech are expected to teach and understand argumentation. One major aspect of argumentation is the concept of modes of reasoning.

Argumentation can be defined as "The broad process of developing ideas through a reasoned discourse employing logical, emotional, and ethical proof."¹ Traditionally, the word argumentation connotes more emphasis on logical proof than on emotional and ethical proof. Logical proof can be divided into two main parts, reasoning and evidence. Evidence is ". . . The raw material of argumentation. It consists of facts, opinions, and objects that are used to generate proof."² Reasoning is

¹James H. McBath, "Introduction to Argument," Argumentation and Debate, ed. James H. McBath (New York: Holt, Rinehart, and Winston, rev. ed., 1963), p. 6.

²Austin J. Freeley, Argumentation and Debate (Belmont, California: Wadsworth Publishing Co., 1961), p. 52.

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" . . . The process of inferring conclusions from premises."³

A. Craig Baird used inference as a synonym for reasoning in his description of the process:

Reasoning and reflection occur when we mentally explore and take up a position in a heretofore undiscovered region. This thought movement is controlled not by chance or whim, however, but by a careful inspection of the facts and principles at hand. . . . Inference is the ability to see⁴ and describe connections between terms and statements.

Baird's description of the reasoning process is more detailed but quite similar to Quintilian's, who wrote that "An argument is a process of reasoning afforded a proof, by which one thing is gathered by another, and which establishes what is doubtful by references to what is certain."⁵ Quintilian illustrated his description of reasoning by relating the story about Atalanta, who supposedly is no longer a virgin, since "She has been observed walking in the woods with young men."

Reasoning may thus be thought of as methods for moving from one observation or statement to another, demonstrating what is unknown or unaccepted by reference to what is already demonstrated. If two plus two equals four, then by the commonly accepted mathematical property of addition four plus four equals eight. Similarly, if a student's grades have been uniformly below par, we may expect his or her grades to continue being unsatisfactory. The key in each of these instances is the

³Ibid., p. 86.

⁴A. Craig Baird, Argumentation, Discussion, and Debate (New York: McGraw-Hill Book Co., Inc., 1950), p. 44.

⁵Quintilian, Institutes of Oratory, tr. John Selby Watson (London: George Bell and Sons, 1903), pp. 373-374.

"bridge" between the several statements. In classical terminology, the methods for bridging statements are labeled "modes of reasoning." In Douglas Ehninger and Wayne Brockriede's adaptation of Stephen Toulmin's reformulation of the structure of argumentation, the bridges are labeled "Warrants":

Warrant (W) is the operational name Toulmin gives to that part of an argument which authorizes the mental "leap" involved in advancing from data to claim. As distinguished from data, which answer the question, "What have you got to go on," the warrant answers the question "How do you get there?" Its function is to carry the accepted data to the doubted or disbelieved proposition which constitutes the claim, thereby certifying this claim as true or acceptable.⁶

From antiquity rhetoricians and others have distinguished modes of reasoning. Except for Ehninger and Brockriede modern treatments of argumentation have changed but little in labeling, analyzing, and discussing reasoning. The modes of reasoning most commonly identified are (1) reasoning from sign(s); (2) reasoning through causal relation; (3) reasoning from analogy, literal and figurative; (4) reasoning from example, both real and hypothetical; and (5) reasoning from authority, or testimony.

Treatments of argumentation have typically followed two lines in treating modes of reasoning: (1) enumeration and structural analysis of the various modes; and (2) a discussion of the various modes with specific audiences and situations. Aristotle furnished an example of the latter when he asserted that "Fables are suited for speeches in a popular assembly."

⁶"Toulmin on Argument: An Interpretation and Application," Quarterly Journal of Speech, LXVI (February, 1960), 45.

This study will focus on a different aspect of modes of reasoning. As the example from Aristotle suggests, traditional treatments of reasoning modes have been audience-centered, that is, effective audience response is seen as the major criterion for a reasoning mode selection. Emphasis is placed on what mode or modes a speaker should select in order to secure a given response from a given audience in a specific situation. There is, however, a related and perhaps prior question. What will or what do speakers do in choosing modes of reasoning. Do speakers, trained and untrained, vary the modes they choose for different audiences and situations according to the precepts of theory? Or do speakers, trained and untrained, have tendencies to rely on just one or two modes, regardless of audiences and situations?

The next section of the study surveys what literature is available that pertains to these questions about reasoning mode choice. It will be seen that the literature is confined to some speculations about trained speakers and mode choice. These speculations permit a hypothesis that leading speakers do confine themselves to a "favorite" mode of reasoning. The rhetorical literature surveyed is silent on untrained speakers and their mode choosing patterns. For several reasons this study is concerned with mode choosing and possible mode choice limitation by untrained speakers. The hypothesis, therefore, is not strictly drawn from inductive evidence about untrained speakers, but rests instead on the evidence from trained speakers.

What justification is there for extending to the population of untrained speakers the hypothesis drawn from observing trained speakers? This justification seems defensible: trained and untrained speakers share many things in common, despite the skill differences observable in trained speakers; if trained speakers limit their reasoning mode choices, despite the precepts of theory, it can be postulated that the limiting was "learned" in a much earlier stage of speaking skill development.

The literature in rhetoric gives no answer to the question about untrained speakers and reasoning mode choices. This study's purpose is to design and carry out an experimental approach toward an answer to the question.

Establishing whether or not untrained speakers limit themselves in reasoning mode choice would seem to be an important item of information for rhetorical theory. First, the relatively limited current state of knowledge about communication suggests that almost any carefully obtained information is valuable, simply because not enough knowledge is available to pass accurate judgement on other knowledge.

Secondly, assuming that an argumentation teacher wishes to encourage the classical concept of "the right mode for the right audience," shouldn't that teacher understand what his students' reasoning mode choice tendencies are before instruction begins?

Background of the Study

The question which the study will attempt to answer is predicated on two observations: (1) previous writers, although

occasionally noting that some trained speakers appear to show preferences for certain modes of reasoning, have attempted no generalizations about limiting of reasoning mode choices; and (2) scanty and scattered evidence in the rhetorical literature suggests that speakers will display preference. No evidence is available on whether untrained speakers do or do not consistently limit their reasoning mode choices. The studies which follow considered reasoning modes, though not focusing on them.

Frederick Speckeen studied the speaking of Charles Edward Jefferson, and although noting some preference among the modes of reasoning, made no precise judgement as he concluded that "Jefferson's sermons are characterized by extensive reasoning by sign."⁷ Moyne Cabbage was more precise in describing Walter Reuther's reasoning, though he found no preference pattern as such:

Deduction, induction, and comparison are reasoning patterns commonly found in Reuther's speeches; causal reasoning is utilized infrequently. No one type or pattern⁸ of reasoning is predominant throughout a single speech.

Gordon Thomas, studying Benjamin F. Butler, found a definite pattern of reasoning mode choice. Thomas concluded that "It is apparent that Butler depends for logical proof

⁷Frederick J. Speckeen, "A Rhetorical Study of the Preaching of Charles Edward Jefferson," unpublished MA thesis, as abstracted in Speech Monographs, XXIX (June, 1962), 107.

⁸Moyne L. Cabbage, "A Rhetorical Study of the Speaking of Walter Philip Reuther on Matters of Public Policy," unpublished MA thesis, as abstracted in Speech Monographs, XXIX (June, 1962), 99.

primarily on inductive reasoning supported by example, with occasional use of testimony and narration."⁹

In studying Clarence Darrow's speaking, Maloney found an outstanding example of an experienced speaker's preference for a certain mode of reasoning:

The characteristic pattern of proof in Darrow's legal arguments is dual. In almost every instance he either adopts two major lines of argument, differing in form, or he uses two types of arguments to establish a single contention. The first and most important of the lines of argument is causal. Either Darrow attempts to justify his clients by an inquiry into the motives behind their acts, or he delves into the historical causative factors of the act itself. . . . Darrow's pleas typically start with the argument from cause.¹⁰

Orville Hitchcock, studying Jonathan Edwards, found an equally strong but different choice tendency. After an examination of Edward's sermons, Hitchcock observed that

Argument from authority greatly predominates. As one would expect, the principal source, almost the only source, is the Bible. It is the one great authority. . . . Biblical authority is employed in eight out of ten cases in which logical arguments are presented.¹¹

Another strong example is found in McCall's study of Theodore Parker. In discussing Parker's logical proof, McCall summarized:

As for his use of causal relation, it must be borne in

⁹Gordon L. Thomas, "Benjamin F. Butler, Prosecutor," Quarterly Journal of Speech, XLV (October, 1959), 295.

¹⁰Martin Maloney, "Clarence Darrow," in A History and Criticism of American Public Address, ed. Marie Hochmuth, III (New York: Longmans, Green, and Co., 1955), 298.

¹¹Orville A. Hitchcock, "Jonathan Edwards," Ibid., ed. William Norwood Brigance, I (New York: McGraw-Hill Book Co., Inc., 1943), 224.

in mind that his whole philosophy was based upon a God in His universe, working by natural law from without rather than by miraculous power from within. Thus, his sermons are almost invariably in the larger sense causal chains; and the sermon plans that fill the pages of his Journal are replete with such phrases as "show causes," "show effects of."¹²

Richard Weaver has produced the strongest evidence for believing that trained speakers tend to limit their reasoning mode choices. He identified a mode of reasoning which does not conform to the modes commonly identified, a mode he labeled "argument from circumstance." Weaver defined his conception in this manner:

A third type we shall mention, the type which provides our access to Edmund Burke, is the argument from circumstance. The argument from circumstance is, as the name suggests, the nearest of all arguments to purest expediency. This argument merely reads the circumstances--'the facts standing around'--and accepts them as coercive, or allows them to dictate the decision. If one should say, "The city must be surrendered because the besiegers are so numerous," one would be arguing not from genus, or similitude, but from a present circumstance. The expression "In view of the situation, what else are you going to do?" constitutes a sort of proposition-form for this type of argument.¹³

The argument from circumstance appears most closely related to argument from cause to effect. If such a connection is justified, Weaver has indeed supported the idea that trained speakers will limit their reasoning mode choices. In fact, Weaver concludes his analysis of the argument from circumstance by stating, ". . . But if one studies the kind of argument which Burke regularly employed when at grips with concrete policies,

¹²Roy C. McCall, "Theodore Parker," Ibid., 249.

¹³Richard N. Weaver, The Ethics of Rhetoric, (Chicago: Henry Regnery Co., 1965), p. 57.

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one discovers a strong addiction to the argument from circumstance."¹⁴

The studies cited thus far appear to show that several leading speakers in several professions did limit their choice of reasoning modes. The studies do not show that the speakers limiting their choices limited themselves to the same mode of reasoning. A search of the literature from which these studies were found did not produce a comparative study, that is, a study investigating several speakers and their differences in selection of modes of reasoning.

Although it is felt that the important question for the study is simply whether or not untrained speakers do show preference for a single reasoning mode, another question is also pertinent. If untrained speakers do show preference, what is that preference associated with?

In considering what preference might be associated with, many general and accordingly vague ideas come up. Such things as "habit", "verbal background", "teachers", "intelligence", and "depth and kinds of reading" suggest themselves as environmental, educational, and cognitive factors that could contribute to a limited choice of reasoning modes. On the assumption that choice of reasoning mode belongs in an even broader context, the comment of three cognitive theorists is pertinent:

The categories in terms of which man sorts out and responds to the world around him reflect deeply the culture into which he is born. The language, the way of life, the religion and science of a people: all of these mold the

¹⁴Ibid., p. 58.

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way in which a man experiences the events out of which his own history is fashioned.¹⁵

The point here is that choice of reasoning mode is doubtlessly linked and interrelated to the total field of verbal and non-verbal behavior, and subject to all the happenings in that field. But such a high level of generality does not help. The preference act must be attached to a concept which organizes behavior in a narrower, more immediately understandable fashion.

The behavior concept considered most likely to be helpful for the study is the "attitude" concept, which has been invaluable in many other studies of verbal behavior. Most theorists would agree with a definition of attitude as "A predisposition to act in certain ways under given stimulus conditions."¹⁶

No hypothesis can be suggested about different attitudes and differential effects kinds and intensities of attitudes might have upon reasoning mode selection. There is no postulated answer to such a question as "What kind of attitude toward a proposition will produce a preference for causal reasoning on that proposition?"

Some studies have seemed to establish that "emotion," which may be loosely equated to attitudes, does affect the structure of reasoning. Janis and Frick, for example, found

¹⁵Jerome S. Bruner, Jacqueline J. Goodnow, George A. Austin, A Study of Thinking, (New York: John Wiley and Sons, 1956), p. 12.

¹⁶Herbert H. Remmers, Introduction to Opinion and Attitude Measurement, (New York: Harper and Brothers, 1954), p. 3.

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that in judging the logical validity of syllogisms subjects tended to accept invalid syllogisms more often than they rejected them when the subjects agreed with the arguments expressed by the invalid syllogisms.¹⁷ Lefford's replication arrived at the same conclusion.¹⁸ But neither these nor other studies came to grips with attitudes as a factor in reasoning mode choice.

Summary

Little is known about possible consistencies of reasoning mode choice by untrained speakers. Some rhetorical studies suggest that (1) the trained speakers studied did limit their reasoning mode choices to one or two modes; and (2) that those trained speakers' attitudes toward their subject material and claims appeared to relate in some fashion to their choice and limitation of reasoning modes.

This study's purpose is to examine the reasoning mode choices of untrained speakers. The single hypothesis is:

Untrained speakers preparing to communicate on several propositions will display a non-random biased selection of reasoning modes, tending to limit themselves to a single mode of reasoning in each communication.

The study will also examine a question related to the hypothesis:

¹⁷Irving L. Janis and F. Frick, "The Relationship Between Attitudes Toward Conclusions and Errors in Judging Logical Validity of Syllogisms," Journal of Experimental Psychology, XXXIII (July, 1943), 73-77.

¹⁸Albert Lefford, "The Influence of Emotional Subject Matter on Logical Reasoning," Journal of General Psychology, XXXIV (January, 1946), 127-151.

What is the relationship between a speaker's attitudes toward several propositions and his tendency, if any, to limit his choice of reasoning modes when preparing to speak on those propositions?

CHAPTER II

DESIGN OF THE EXPERIMENT

Introduction

This study's major concern is whether or not untrained speakers will display a non-random biased limitation of their choices of reasoning modes. The study's design provides a paper and pencil measurement for the investigation of the hypothesis about reasoning mode choices. In order to examine the relationships, if any, between limitation of reasoning mode choices and attitudes, a method of assessing attitudes in the study is also included. The study thus contains two measuring devices, one for reasoning mode selection and one for attitudes.

This chapter will explain the development of the two measuring techniques and the design of the study. The technique used to examine reasoning mode selection is original; the attitude measurement is a modified form of an approach developed by Muzafer Sherif and others.¹⁹ This approach to attitude measurement centers around assessment of latitudes of acceptance, rejection, and noncommitment.

¹⁹See Carolyn W. Sherif, Muzafer Sherif, and Roger E. Nebergall, Attitude and Attitude Change: The Social Judgment-Involvement Approach, (Philadelphia & London: W. B. Saunders Co., 1965), pp. 18-47.

The Reasoning Mode Choice Measurement

Two pilot studies of reasoning mode selection by untrained speakers were carried out. Both the pilot studies and this study were conducted at Stephen F. Austin State College. All used undergraduate college students. The first pilot study used 251 subjects from classes in Fundamentals of Speech and American History. The second pilot study used forty Fundamentals of Speech students.

The First Pilot Study

Design. The experimenter phrased three "policy propositions," drawn from national and international problems then facing the United States. For example, one of the three policy propositions stated that "The United States should use direct military force to unseat Fidel Castro in Cuba."

The experimenter then originated six statements or arguments related to each proposition. These statements were so written that of the six statements for each proposition, a pair, one pro and one con, were to represent each of three modes of reasoning. The three modes of reasoning represented were reasoning from cause to effect, reasoning from figurative analogy, and reasoning by appeal to authority. These three modes were chosen over others on the basis of the experimenter's judgment. The experimenter felt that these three are more easily distinguished from each other than any other combination and that they are the most commonly used of the various modes.

The following illustration shows schematically the description just made. The order of appearance shown is not

the order of appearance when the statements were presented to subjects. The subjects got the statements in a booklet form, and the order of appearance of statements in the booklet was randomized. The experimenter did not feel it necessary to present different orders of appearance for the various statements for different groups in the population sample.

Illustration 1--Statement Forms for Mode Selection

<u>Statement Number</u>	<u>Type of Reasoning</u>	<u>Position</u>
1.	Cause to effect	Pro
2.	Cause to effect	Con
3.	Appeal to authority	Pro
4.	Appeal to authority	Con
5.	Figurative analogy	Pro
6.	Figurative analogy	Con

Since each statement in the procedure was to (1) reflect a specific mode of reasoning; and (2) be either a pro or a con statement, two validity problems were present. If the results of the procedure were to be useful, the statements had to be what they purported to be--a collection of statements representing the different modes of reasoning and divided evenly between pro and con positions. The two validity problems were thus (1) were the statements prejudged by the experimenter to reflect a given mode actually good instances of that mode? and (2) were the statements prejudged by the experimenter as pro and con statements for the propositions involved?

These validity questions were studied by submitting the prejudged statements to a panel of eight judges. The panels' duties were to check the experimenter's judgement by deciding (1) whether each statement reflected the mode of reasoning it

purported to represent; and (2)¹⁶ whether each statement was properly pro or con on the proposition it appeared with.

The experimenter decided the agreement criterion between himself and the panel. If more than one judge disagreed on the mode of reasoning a statement reflected, the statement was not acceptable for the measurement. If more than two judges disagreed on pro and con, the statement was unacceptable.

The agreement criterion rested on two grounds: (1) perfect agreement was, of course, very desirable; but (2) at least one judge was consistently "out of line" with the other judges. The deviation was attributed to unfamiliarity with the task, an observation supported by the fact that the deviate judge had relatively less experience than the others with the judgement categories involved.²⁰ For this first pilot study the criterion meant that seven of eight panel members had to agree on mode of reasoning.

The agreement criterion for pro or con was set at a less precise level because the pro-con factor was not a crucial part of the study. The experimenter felt that some sort of error would be introduced into the measurement if subjects did not have both pro and con statements from which to choose.

Statements not reaching the agreement criteria were modified and resubmitted to the panel until the criteria were met. The three propositions and the eighteen final statements used in this first pilot study are contained in Appendix A.

²⁰The panel was composed of faculty and graduate assistants from the Department of Speech. This first panel used three faculty members and five graduate assistants.

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Also in that appendix is a copy of the instructions given to the panel and a tally of their reactions to the final eighteen statements.

When experimenter and panel reached agreement, the propositions and statements were put in a booklet. The order of appearance for each proposition and its set of statements was determined by random assignment (see Appendix A for the order).

The experimenter administered the measurement to all subjects. He appeared in the classrooms and was introduced by the various instructors as a member of the Speech Department who would like their cooperation in gathering some information. Subjects were given copies of the booklet and asked not to begin filling it out until the experimenter discussed the procedure with them. For the speech students the instructions were:

Later this semester we will be preparing speeches on one or more of the topics you will find in this booklet. Some advance information will be helpful. In the following pages you will find three (3) topics and after each topic six (6) statements. For each topic, underline that one statement which you would be most likely to use in your speech on that topic. Please do not underline more than one statement under each topic.

For the subjects in American History classes the instructions were:

We are interested in opinion on some topics of current national and international interest. Please do the following: in succeeding pages you will find three (3) topics and after each topic six (6) statements. For each topic underline that one statement which you would be most likely to use if you were preparing to make a talk on that topic.

After instruction periods, subjects completed the booklets. Completion required an average of ten minutes. For this study there were eleven groups and 251 subjects. Subjects directed only three questions to the experimenter; group interaction was minimal, even without control; and only three booklets

were judged "void" by the experimenter. The questions concerned the "meaning" of statements, and were answered by the phrase "Whatever the statement means to you." Of the three booklets adjudged void, one had no marks, the second no underline for the third proposition, and the third had no underlines for one topic.

Analysis. One major analysis of the data was performed, a comparison of the actual number of subjects to the expected number of subjects who chose the same reasoning mode under all propositions.

Responses fell into one of three categories. The first category accounted for those responses in which subjects selected statements employing the same mode of reasoning for each of the three propositions (hereafter referred to as "Category I"). For example, some subjects selected cause to effect statements for each proposition. The second category accounted for responses where subjects picked statements using the same reasoning mode for two propositions but a different mode for the third proposition ("Category II"). The third category accounted for responses where the selected statements differed on mode of reasoning under each proposition ("Category III").

A Chi Square test was employed to determine if the actual distribution of the responses differed significantly from the theoretical chance distribution.²¹ The Chi Square value equaled 1.149, not significant, providing no support for

²¹The chance of securing an example of one of the three modes in any given set of six statements was two out of six, since there were two examples of each mode in each set of six statements. On the assumption that each mode was equally likely to be drawn under each proposition, the chance distribution for the three "Categories" was as follows: chances of

the hypothesis that untrained speakers would consistently select the same reasoning mode.

Discussion. In looking at the results of this first pilot study, it became apparent that several implicit assumptions in the study's design were crucial and unmet assumptions. For example, it was assumed that using two different class groupings with differing instructions would make no difference in results. Speech students were supposed to believe themselves beginning an assignment; the history students were supposed to believe themselves part of an opinion survey. The data from the two groupings had differences. The differences could have been tested directly; however, the experimenter decided to conduct a second pilot study using only a speech population.

The measurement device contained two implicit, important assumptions, which were:

1. that all subjects were relatively equally familiar with the "meaning" of all statements.
2. that the different arguments expressed among each set of six statements were equally "attractive" to all subjects.

The first assumption probably did not hold. Statements were formulated by the experimenter from his own experiences with each proposition. Consequently, it is not certain that subjects

responding in Category I, one chance in nine (chances of drawing any statement under the first proposition equaled $6/6$, times chances of drawing the same mode under the second proposition equals $2/6$ times chances of drawing the same mode under the third proposition equals $2/6$) or $6/6 \times 2/6 \times 2/6$. Category II--six chances in nine ($6/6 \times 6/6 \times 2/6$); Category III, two chances in nine ($6/6 \times 4/6 \times 2/6$). In this case 27.86 cases were expected in Category I ($1/9 \times 251$); 167.34 cases for Category II; and 55.80 cases for Category III ($2/9 \times 251$). The actual count in each category was, respectively, 27, 193, and 31.

had meanings for the arguments expressed by statements, or, for that matter, had ever even heard of a particular argument. Accordingly, subjects might well have rejected one statement in favor of another, not because the two statements differed in mode of reasoning, but simply because they were more familiar with one argument than another.

Closely related to the equal familiarity assumption was the further assumption that subjects equally familiar with all arguments did not see one argument as more "attractive" than another argument. In this pilot study several different basic arguments were included in each set of six statements. Faced with several different basic arguments in each set, subjects could have chosen among the statements on the basis of which argument was most "attractive" to them, again virtually excluding reasoning mode differences as a selection factor.

If subjects ruled out statements expressing arguments they were not familiar with, and if subjects chose according to "attractiveness" among the several arguments, then the measuring device failed. Too many selection factors, other than mode of reasoning, were present.

Summary. The first pilot study gave no statistical support to its hypothesis. The study's failure to reach significant results could be attributed to weaknesses in design rather than to an incorrect hypothesis. Accordingly, a second pilot study was designed.

The Second Pilot Study

Design. The second pilot study aimed at strengthening the weaknesses found in the first. Three major changes were made in the measuring device.

First, the test population was confined to beginning speech students only. By this procedure only one set of instructions was necessary, and all subjects were expected to perceive task purpose similarly.

Secondly, two steps were taken to minimize the difficulties of differing "familiarity" and differing "attractiveness" among the arguments. These steps were (1) using a segment of the test population instead of the experimenter to originate arguments; and (2) using only one basic argument in each set of six statements. The phrase "basic argument" means what are normally referred to as "issues" or major questions in a proposition. This second pilot study confined itself to a single issue for each proposition.

Forty-one students in two Fundamentals of Speech classes were randomly selected to suggest arguments on three propositions phrased by the experimenter. The experimenter informed the students that later in the semester they would be making argumentative speeches on the three topics, and that it might be interesting to see what arguments they could already think of on the propositions. The formal instructions given them were:

In the following three pages you will find three proposals concerning what the United States should do concerning certain issues. We would like for you to think of and write down all the arguments for, or against, or both on the proposal on that page. Do not develop the arguments, but just briefly summarize them. Please do your own work; you are not being graded here in any way. If you can think of only a few arguments, fine; if you can think of many, that is fine also.

The experimenter summarized the results, deciding what arguments had been suggested, since individual wording varied. A summary is found in Appendix B.

The procedure for getting arguments was carried out during one class session and without prior notice to the students. The arguments suggested by the students should have been those arguments with which they were already familiar.

Using this method to determine basic arguments for each of three propositions for the second pilot study should have removed the "familiarity" problem encountered in the first study. But not completely. As Appendix B shows, the arguments most frequently mentioned were written down by half or less of the student subjects.

The "attractiveness" problem in the first study was removed by using only one basic argument under each proposition. The arguments used, of course, were the arguments most frequently suggested by the forty-one subjects used for that purpose.

A new panel of judges was formed from the speech staff. The panel's duties were the same as in the first study; to check the experimenter's judgment in formulating the eighteen new statements to be used. With seven judges on the panel, six agreements were necessary for a statement to be acceptable on mode of reasoning and five agreements for pro and con. The final form for the eighteen statements for the second pilot study is seen in Appendix C.

Two Fundamentals of Speech classes served as subjects for the second study. Instructions and other procedures were the same as in the first study. Forty booklets were completed.

Analysis. Raw scores were: Category I, all responses

alike on mode of reasoning, eight cases; Category II, two responses alike and one different, twenty-seven cases; Category III, all responses different on mode of reasoning, five cases. The response pattern for all subjects is depicted in Appendix D.

A Chi Square test was again employed to test the results. The theoretical, or chance distribution was, respectively, 4.44, 26.64, and 8.80. Chi Square value was 4.685; with two degrees of freedom that value is significant at the .10 level.

Two further Chi Square tests were carried out to determine what appears on inspection to be true, namely that the discrepancy between observed and expected cases in Category I was responsible for the significant result obtained in the overall Chi Square. First, the expected and actual number of responses for Categories I and II were combined and compared to actual and expected responses in Category III. The result here was 2.135, not significant. The second comparison was a combination of Categories II and III against I. The result here was 3.289, significant at .10. The conclusion was drawn that the significant discrepancy found initially was due almost entirely to the larger number of cases than expected which were found in Category I.

From this analysis, the data could be said to have shown that a significantly larger number of untrained speakers than expected by chance alone did choose statements reflecting the same mode of reasoning under each of the three propositions.

In looking at the results of the first two pilot studies, two conclusions seemed apparent: (1) the first pilot study, using 251 subjects, produced no significant support for the hypothesis; but (2) a much smaller pilot study with several modifications in design from the first pilot study did produce significant results. The question became, were the results of the second study due to the changes in design or were the results due to chance? The possibility that chance instead of design changes was responsible was strong, since the results were significant at the comparatively low level of .10.²² The present study set out to answer the question.

The Main Experiment. This study, in this case the third study, was a replication of the second pilot study. The single difference was a greatly expanded sample size, from forty subjects to 132 subjects. In addition, a measurement of subject's attitudes toward the propositions was added, in order to supply information about the relationship, if any, between attitudes and limitations on choice of reasoning modes.

Design of the Attitude Measurements

Attitudes have been shown to be potent forces in verbal and non-verbal behavior. Attitudes are measured in the study

²²The experimenter called the results "significant" at this level because of the exploratory nature of the pilot study. For the main experiment in the study a level less than .05 would not be considered "significant."

Although opinions vary as to the level of significance desired in an exploratory study, the writer supports the .10 level as significant in this case.

for two reasons: (1) the evidence indicating that trained speakers tend to show reasoning mode preference also contains implications that the limitation on modes is somehow associated with the speaker's attitudes toward their subject matter; and (2) whatever this association of attitudes to reasoning mode choice may be for trained speakers may well hold true for untrained speakers.

Two concepts in attitude measurement are employed, position and involvement. Position may be roughly defined as "Where a person stands on a scale" that applies to a given issue. The scale ranges from highly "pro" to highly "con". For the assessment method chosen (see p. 13) a position can be operationally defined in this way. On each proposition a subject sees nine statements. The nine statements range from extremely pro (the "A" statement) through "neutrality" (the "E" statement) to extreme con (the "I" statement). Subjects are asked to "Choose that one statement which most closely agrees with their own 'stand' on the issue." Position, therefore, is defined as the subjects' selection of statements, A through I.

Involvement may be thought of as how "wrapped up" or "committed" a person is on a given issue. For example, two people may belong to the same church and yet have much different degrees of involvement. The more involved of the two may attend much more regularly, serve more administrative functions, and defend the church more vigorously than the other. Yet, both could conceivably indicate a similar "position" on a measurement of their attitude toward the church, particularly a paper

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and pencil measurement where subjects can make "socially acceptable" attitude responses.

The point is this. Two people can check a given position on a measurement of their attitude toward a concept or issue. But with different involvement or commitment on that concept or issue their judgement of statements and events on and around that issue can be and have been shown to be different. Sherif, et. al., have said:

If the hierarchy of a person's ties and commitments is ascertained, a great deal may be learned about his behavior in different situations. Many apparent contradictions in his actions may be explicable, especially in cases where he makes a verbal statement on a specific issue and then acts in a contradictory fashion.²³

If attitudes towards issues are associated with a person's limitation on mode choice it may be that the effect takes place only when the person is highly involved with the proposition. Hence, the study will investigate both position and involvement.

Involvement is operationally defined. Subjects are instructed to choose from the nine statements "That one statement most objectionable to him," plus other statements from the nine which he finds "also objectionable." The sum of rejected statements for each subject is his "latitude of rejection."

Latitude of rejection as a measure of involvement comes from both intuition and study. The intuition is that most people seem to feel that a person highly committed(involved) on an issue will reject more contrasting or milder positions than his own than will a person who could "care less" about

²³ Sherif, Sherif, and Nebergall, p. 67.

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about the issue. A series of studies has borne out these intuitive feelings about involved people and latitudes of rejection. Sherif, et. al., conclude firmly that "The latitude of rejection therefore, appears to be the most useful indicator for singling out moderate individuals highly involved in an issue as well as extremists not highly involved."²⁴

As previously noted, the overall method used here to measure attitudes is commonly known as "latitudes of acceptance, rejection, and non-commitment." The method was chosen for two reasons: (1) a good validation of its scale of positions (statements) over a period of several years; and (2) its operational definition of involvement.

The scale has been adequately validated. Sherif and others, in a 1960 election study, found that the method produced consistent results among a test population geographically scattered and politically widely disparate.²⁵ The test has shown high validity even when the noun (topic) content was changed from the original and then combined with the original subject-predicate relationships.²⁶ To illustrate the point, below is the "D" position on the scale as used in the 1960 election study and the "D" position for the Red China proposition in this study.²⁷

²⁴Ibid., p. 59. ²⁵Ibid., pp. 27-47. ²⁶Ibid., pp. 47-54.

²⁷Appendix E shows the revised form for all nine position statements for each of the three propositions in the study. It will be noted that the changes made involved the topic content. The adjectives and adverbs which formed the differentiation have been retained in all cases.

Illustration 2

A Comparison Between the "D" Position for
the 1960 Study and the "D" Position for the
Present Study

1960	D. Although it is hard to decide, it is probable that the country's interests may be better served if the Republican presidential and vice-presidential candidates are elected in November.
Change	D. Although it is hard to decide, it is probable that the United States' interests may be better served if Red China is not admitted to the United Nations.

To score the data from this method seven factors are identified: (1) the statement from among the nine the subject indicates as "closest to his own stand on this matter" (referred to as "own position"); (2) "another statement or statements" which the subject finds "not objectionable" from his point of view; (3) that statement from the nine which the subject finds "most objectionable"; (4) "other statement or statements" which the subject finds "objectionable" from his point of view; (5) the total number of statements accepted, called "latitude of acceptance"; (6) the total number of statements rejected, labeled "latitude of rejection"; and (7) the total number of statements neither accepted nor rejected (latitude of non-commitment).

For this study two of the seven factors are most important. The two factors are the first, own position, and the sixth, latitude of rejection. As noted earlier, the sixth

factor constitutes an operational definition of involvement for the study.

In summary, a method of measuring attitudes toward the propositions used in the study was selected in order to examine the relationship between attitudes and reasoning mode selection. The method selected was chosen primarily because it contains an operational measure of involvement. Both "position" and "involvement" will be considered in analysis of the attitude data.

Conclusion

The study's design includes two major parts, an examination of reasoning modes selected by subjects, and a study of the relationship between attitudes and the tendency, if any, to limit reasoning mode selection.

Several problems apparently limiting the validity of the reasoning mode examination in pilot studies were corrected in the design of this study. The attitude measuring method has been satisfactorily validated in studies by its authors and others.

The design of the study can be summarized in nine steps:

1. Selection of controversial topic areas by the experimenter.
2. Phrasing of propositions by the experimenter.
3. Suggestions of arguments for each proposition by a naive section of the text population.
4. Summary of the arguments suggested (by the experimenter) and selection of the argument to be used for each proposition.
5. Preparation of the booklet for the reasoning mode data.

6. Preparation of the booklet for the attitude data.
7. Selection of the actual subjects from the test population.
8. Administering measurement.
9. Analysis and discussion.

CHAPTER III

PROCEDURES AND RESULTS

This chapter describes the procedures used and the results obtained in the study. The results are divided into (1) the data from subjects' responses to the booklet where they were asked to choose a preferred statement under each of three propositions; and (2) the data from measurement of subjects' attitudes toward the three propositions.

Seven classes in the beginning speech course at Stephen F. Austin State College served as subjects for the study. The size of the seven sections ranged from 11-27 and averaged nineteen. All sections completed both booklets during their regular class periods. All sections met between the hours of 7:45 A.M. and 2:00 P.M.

Subjects responded to each of the two booklets in two different class sessions. The booklet containing the reasoning mode choice procedures was administered to subjects during three days of one week. The second booklet, aimed at measuring subjects' attitudes toward the mode choice propositions, was administered during three days of the next week.

One hundred thirty-three subjects were present when the first booklet was administered. Only one subject of the

133 failed to correctly complete the booklet, by neglecting to underline a statement on one of the three propositions.

For the second session, when the booklet for measurement of attitudes toward the propositions was administered, 140 subjects were present. Of the 140, eight had not taken part in the first session and consequently had not filled out both booklets; nineteen failed to correctly complete the attitude measurement scales. The number of subjects' responses remaining for analysis was, therefore, 132 with complete data from the reasoning mode choice booklet and 113 with complete data from the attitude measurement booklet.

The mean age of the group of 132 subjects was nineteen. The group contained ninety males and forty-two females.

The reasoning mode choice booklet was represented to the subjects as a preliminary part of a class assignment to be carried out later in the semester. The instructions for completing the booklet were printed on its first page (see Appendix E). The experimenter, who administered the booklet to all seven sections, read the instructions aloud while the subjects followed on the printed form. The subjects then underlined their preferred statement from each set of six statements under each proposition.

The booklet for attitude measurements was represented to the subjects as "A survey of the various stands groups of people take on public issues." Subjects were told that each page in the booklet would tell them what to do on that page, and to proceed with the booklet at their own pace.

The first page of both booklets, in addition to instructions, contained spaces for listing personal information. Provisions were made for indicating name, age, sex, and college majors and minors. Subjects were told that their responses in the booklets would not affect their grades in the class, nor would they be asked to explain any of their responses. Subjects were also told that if they did not wish to place their names on a booklet that not doing so would be "all right." They were requested, however, whether they placed their names or not, to be sure to give accurate responses to the other information called for. The purpose of the additional information was to enable the experimenter to match each subject's responses for both sessions.

Results of the Study

Results were divided into data from both booklets, yielding two major analyses: (1) an analysis of the reasoning mode choices by subjects, related to the hypothesis of the study; and (2) an analysis of the attitude measurements, relating to the question as to the relationship of reasoning mode choice and attitudes toward the propositions on which reasoning mode choices were made.

The hypothesis of reasoning mode choice. The data pertinent to the hypothesis are the responses to the first booklet. The hypothesis, again, was:

Untrained speakers preparing to communicate on several propositions will display a non-random biased selection of reasoning modes, tending to limit themselves to a single mode of reasoning in each communication.

Appendix F shows the response pattern for each of the 132 subjects who correctly completed the mode choice booklet, that is, what mode of reasoning was represented by the one statement which each subject selected under each of the three propositions.

The hypothesis was tested from the data by the same method used to test the hypothesis in the earlier pilot studies. Responses were divided into three categories: Category I, same mode of reasoning chosen under each proposition; Category II, similar mode for two propositions, one different; and Category III, a different mode selected under each proposition. Secondly, a Chi Square statistic was employed to check for a significant difference between the expected number of responses in each category and the number of responses which actually appeared in each category.

Figure 1 shows the actual number of cases that fell into each of the three categories, the number that had been expected to fall into each category, and the result of the Chi Square application. Inspection of the data shows that the significant Chi Square obtained was due to the greater number of cases than expected which were found in Category I. Eighty-eight were expected in Category II, and after rounding eighty-eight cases were found. Twenty-nine were expected in Category III; only twenty appeared. Fifteen cases were expected by chance to fall into Category I, but twenty-four cases were found in Category I. This distribution is similar in shape to the results in the earlier pilot studies.

FIGURE 1

TEST OF THE DISCREPANCY BETWEEN EXPECTED AND
ACTUAL FREQUENCIES IN THE THREE RESPONSE CATEGORIES

<u>Category</u>	<u>Actual Number</u>	<u>Expected Number^a</u>
I	24	15
II	88	88
III	<u>20</u>	<u>29</u>
	132	132
$x^2 = \frac{(24-15)^2}{15} + \frac{(88-88)^2}{88} + \frac{(20-29)^2}{29} = 8.2^*$		

^aThe expected number is based upon the number which would be expected if modes were chosen by pure chance.

*Significant at .025 level.

Within the limitations of the approach, the significant result obtained provides support for the hypothesis that untrained speakers preparing to communicate on several propositions will consistently use one mode more often than others. A greater number of subjects than expected on the basis of chance did select statements reflecting the same mode of reasoning under each of three propositions.

With the indication that more untrained speakers than expected by chance do emphasize a single mode of reasoning, the study's second question became relevant. What is the relationship between the tendency to emphasize a single mode and attitudes toward the propositions in which the mode is chosen.

The effect of attitudes toward the proposition. The major reason for measuring attitudes in the study was, again, to examine the relationship between choice of reasoning modes and attitudes toward the propositions on which modes were chosen. Specifically, the experimenter wished to know if attitudes helped to account for the choices shown by those subjects who selected the same mode of reasoning under each proposition, the "Category I" subjects.

Two analyses of the attitude measurement data were intended: (1) the effect of position, which in these measurements means the statement selected by the subject as his "most favored statement" from among the nine statements he had available to him on each measurement; and (2) involvement, or the intensity of feeling a subject had toward each of the three propositions.²⁸

The first analysis concerned the effect of position. The first step was to determine how many of the subjects who had consistently chosen the same mode would have been expected to choose a given position on each proposition. Eighteen subjects were available for the analysis, since six of the twenty four found in the mode choice data had failed to correctly complete all attitude measurements.

The expected number of Category I subjects was computed by (1) counting the number of all subjects who took each given position; (2) computing the number of Category I subjects as a

²⁸As previously pointed out (note 24), the "latitude of rejection" serves as the measure of involvement.

percentage of all subjects; and (3) applying the percentage of Category I subjects to the total of all subjects who took each position under each proposition. For example, under the first proposition twenty-three subjects of all subjects in the study chose the "E" position; four of the twenty three were expected to be Category I subjects, since the eighteen total Category I subjects constituted 17% of all subjects and, therefore, 17% or four of the twenty three. Based on the above method of determining the expected numbers of Category I subjects which would be found at each attitude position under each proposition, Table 1 shows both the expected and the actual totals of Category I subjects who took each position.

The second step in the analysis was to find out if there were significant discrepancies between the expected and actual numbers of Category I subjects at the various positions. The small number of cases in some of the positions precluded discrepancy tests position by position; accordingly, the nine positions were grouped into three sections: positions A, B, and C; D, E, and F; and positions G, H, and I. Figure 2 shows the results of the tests for significant discrepancies using the above groupings. Three Chi Square statistics were employed, one for each group of positions. The Chi Squares tested the question, "Were more Category I subjects than expected by chance alone actually found in a particular position grouping?"

The conclusion drawn from Figure 2 was that attitude position did not appear to offer an explanation for the behavior of subjects who chose statements reflecting the same mode of

reasoning across all three propositions. Discrepancies between expected and actual numbers were not large enough to permit a conclusion that more Category I subjects were likely to be found in one attitude position grouping than in the other two groupings.

The second analysis of attitudes toward propositions and their relationship to subjects' choice of a single reasoning mode concerned involvement. For this analysis involvement scores were divided into two levels, high involvement and low involvement. High involvement was defined as a subjects rejection of five or more of the positions (statements) available to him, and low involvement as rejection of four or less of the nine positions.²⁹

The small number of cases available for the analysis precluded tests for the significance of discrepancies between the expected numbers of high and low involvement for Category I subjects and the actual number of each level of involvement. Table 2 shows the distribution of scores for all subjects and for Category I subjects.

Due to the statistical problem created by insufficient cases for the expected cells, no conclusion can be drawn about the effect of involvement on choice of reasoning mode. As the data in Table 2 show the result is partly due to much greater numbers of low involvement scores and partly due to a low proportion of Category I subjects with high involvement scores.

²⁹See Sherif, Sherif, and Nebergall, p. 57. The 1-4, 5-8 division of involvement scores is their suggestion.

TABLE 1

OWN POSITIONS^a OF MODE CATEGORY I SUBJECTS--ACTUAL AND EXPECTED^b

Own Position	Number of Subjects At Each Position			Category I Subjects In Each Position Group <u>Propositions</u>					
	<u>Propositions</u>			1		2		3	
	(1)	(2)	(3)	Ex	Ac	Ex	Ac	Ex	Ac
A	1	7	22	0	0	1	0	3	1
B	4	8	13	0	1	1	0	2	2
C	0	7	28	0	0	1	1	4	3
D	12	15	11	2	1	3	4	2	2
E	20	20	12	3	3	3	3	2	2
F	24	22	7	4	6	3	3	1	3
G	21	13	6	3	3	2	3	1	4
H	20	15	12	3	3	3	3	2	1
I	11	4	2	2	1	0	1	0	0
	113	113	113	17	18	17	18	17	18

^aCustomary terminology for "most favored statement." ^bRounded for ease in presentation by the customary rounding rule.

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FIGURE 2

TESTS FOR THE EFFECT OF ATTITUDE POSITION ON CONSISTENT
SELECTION OF A SINGLE REASONING MODE--POSITIONS COMBINED
INTO THREE GROUPS

Position Groups	Propositions	Ex. No.	Ac. No.	χ^2
A, B, C	1	0	1	3.33 ^a
	2	3	1	
	3	9	6	
D, E, F	1	9	10	1.02 ^a
	2	9	10	
	3	5	7	
G, H, I	1	8	7	2.26 ^a
	2	5	7	
	3	3	5	

^aNot significant.

TABLE 2

DISTRIBUTION OF INVOLVEMENT SCORES
ALL SUBJECTS AND CATEGORY I SUBJECTS

<u>Involvement</u>	<u>Propositions</u>					
	(1)		(2)		(3)	
	<u>All</u>	<u>Cat. I</u>	<u>All</u>	<u>Cat. I</u>	<u>All</u>	<u>Cat. I</u>
High	19	2	24	7	20	4
Low	94	16	89	11	93	14

Summary

This chapter described the procedures used and the results obtained in the study. Analysis of the results was divided in two parts: (1) the main hypothesis, related to data on choice of reasoning mode; and (2) the relationship of attitude toward a series of propositions and choice of the same reasoning mode on each proposition. The conclusions were:

1. The hypothesis that untrained speakers preparing to communicate on several propositions would consistently choose the same mode of reasoning on all propositions was confirmed, to the extent that more subjects in the study than expected by chance did consistently choose a single mode.

2. Attitude position did not offer a significant explanation for the behavior of subjects who consistently selected the same mode of reasoning. Not enough cases were available to examine the effect of attitude involvement.

CHAPTER IV

DISCUSSION

The purpose of this chapter is to comment upon the results of the study. The apparent results were: (1) confirmation of the hypothesis that untrained speakers preparing to communicate on several propositions will consistently emphasize a single mode of reasoning; and (2) inadequate data for an examination of a possible relationship between attitudes toward the propositions used and choice of reasoning modes in preparing to speak on those propositions.

The confirmation of the hypothesis is useful only to the extent the procedures employed to obtain it were reasonable and valid. For possible replications or related studies the reasons for the inadequate attitude data should be understood. Accordingly, the chapter will treat both procedures in studying the relationship, if any, between attitudes and choice of reasoning modes.

Procedures

Given validity of the measuring technique, the data from the examination of reasoning mode choices is the least equivocal of all data in the study.

The data strongly support the hypothesis that untrained speakers preparing to communicate on several propositions will consistently emphasize one mode of reasoning. As Table 1 (p. 39) shows, twenty-four out of 132 subjects chose the same mode of reasoning across all three propositions. The null hypothesis was that chance alone would control the number of subjects who would choose the same reasoning mode for all propositions. The expected frequencies for mode choice were based on chance frequencies. The statistical result derived in Figure 1 (p. 35) demonstrates that the 24/132 result would have been expected to occur by chance alone in only two of 100 repetitions of the situation. The frequencies observed in the sample differed significantly from the theoretical or expected population frequencies. A non-chance factor or factors appeared to be operating in the subjects' selection of reasoning modes.

Two possibilities of sampling error enter into consideration of the results of the mode choice data. First, the population for the study consists of all English-speaking or reading undergraduate college students who are or who will take courses in Fundamentals of Speech. The sample, however, was drawn only from undergraduate students enrolled in Fundamentals of Speech at Stephen F. Austin State College. The sample is not a random sample of the population. Generalization of the results at this point is limited to the sample.

The second possibility of sampling error is probably the more serious. To strengthen the design the experimenter

took a random sample to originate the arguments which were used as a basis for the six statements under each proposition (Chapter II, pp. 21-22). This procedure was undertaken because it was felt that if some subjects were unfamiliar with the argument expressed by the statements they would discriminate among those statements on some other criterion than mode of reasoning. If subjects did choose among statements because of something other than mode of reasoning the statistical results lose much of their meaning.

Due to the small size of the population sample itself, it is doubtful that the further sample taken to originate arguments adequately represented the population sample on the factor of familiarity with arguments. The method of random selection in this instance offered little assurance that the distributions in population sample and the argument originating sample were alike in familiarity with arguments.

Aside from possible sampling error, other problems limit the study's conclusion about the hypothesis. For example, in the group used to originate arguments, less than half wrote down the arguments finally chosen for each of the three propositions. (see Appendix B). If the population sample had to be equally familiar with the arguments to assure a good test of the hypothesis the subjects in the group who originated arguments had to show that equal familiarity, but only half or less of the subjects in that group were familiar with (wrote down) the arguments finally used. If this group was representative of the population sample, the population sample was not equally familiar

with the arguments.

The notion or assumption that subjects needed to be equally familiar with the arguments has not been tested. The experimenter felt that subjects not familiar with an argument would pay little or no attention to modes of reasoning in discriminating among statements. The opposite may be true; faced with an unfamiliar argument and "compulsion" to choose amongst statements centered on that argument, a speaker might well rest his choice on mode of reasoning.

From these observations these conclusions must be drawn:

(1) the population sample in the study is a doubtful representative of the population, which consists of all college undergraduates who have taken, are taking, or will take their first college course in speech; (2) the group used to develop arguments may or may not have been representative of the population sample; (3) if the assumption of equal familiarity with arguments is crucial, and if the two samples were alike in familiarity, the support for the hypothesis must be limited, since equal familiarity conditions were not met; and (4) the assumption of the need for equal familiarity has not been tested.

These conclusions show difficulties in interpreting the study as a result of certain problems within the study. There are other problems. The study, as do most experimental studies, aimed to create a microcosm of a "real life" situation. The validity in great part thus depended upon the isomorphism between experiment and "reality." Several factors in the study's design mark off important differences between the study situation

and a real situation.

The study assumed that a subject's choosing of statements from those available on the measuring technique would correspond to the "normal" way of choosing. These subjects were students enrolled in Fundamentals of Speech. Faced with a speaking assignment in that course, the students would choose statements from their own knowledge and/or from the research materials they would seek out.

A speech is not composed of one statement alone. The experiment assumed that getting subjects to choose one statement from a set of six meant that other statements they might select for a "real" speech would "fall into line" with their experimental choice. In other words, the students would choose in the normal course of research for "other" assignments the kind of statements they chose in the assignment represented by the experiment. This assumption is also untested.

The modes of reasoning available for choice were limited to three. At least two other reasoning modes are commonly used, "reasoning by example," and "reasoning through literal analogy" (parallel case). Exclusion of other modes raises this question: if speakers "consistently employ the same reasoning mode," and if within the sample population there were subjects who consistently employ some other mode than those in the study, of what value is the data from these subjects? Not having available their "desired" mode, these subjects may have chosen perfunctorily or even at random. The effect on the data would be a distortion of unknown kind and quantity.

The study assumed, as did the pilot studies, that subjects "saw" that statements differed on mode of reasoning. The assumption was not tested, though it could have been. Subjects were thought to be consciously or "unconsciously" perceiving the reasoning mode differences. The purpose of the judging panel was to insure that subjects could "see" the mode differences.

The point must be made, however, that modes of reasoning are primarily a product of rhetorical theory. Observations can be made by both trained and untrained people about the grammatical differences among sentences which embody different modes of reasoning, according to accomplished rhetoricians. But the perception of differences by "professionals" does not prove that experimental subjects untrained in rhetorical theory will also perceive those differences in the same way. The data for the study shows only that a significant number of subjects did consistently choose statements employing a given mode of reasoning; the data do not prove that the differences caused the consistent choices.

From a statistical standpoint, the design would have been much more powerful with respect to the hypothesis if more than three propositions had been employed. The experimenter limited the propositions to three for two reasons: (1) in the pilot studies three propositions appeared to provide sufficient data to evaluate both the design and the results of those studies; and (2) the experimenter felt that using more than three propositions might introduce a "task rejection" factor

that would offset the advantages gained (subjects refusing to discriminate as acutely as desired, because of the apparent size of the task).

No guidelines were available to dictate the number of propositions. If the number of propositions could have been increased to gain statistical power without encountering task rejection, then that advantage was lost for the study.

In viewing the sampling error possibilities and the problems affecting validity, can it be concluded that the statistical confirmation of the hypothesis is good grounds to accept and perhaps study the hypothesis further? Is the "factor or factors other than chance" in large part the factor of reasoning mode expressed by the statements in the technique?

The questions cannot be precisely answered. Until a further study is carried out, controlling the problems found in this study, unqualified acceptance of the hypothesis is unwarranted. A tentative acceptance of the confirmation could rest on these grounds: from the earlier pilot studies through this study the statistical trend was in the direction predicted by the hypothesis; when certain design weaknesses were corrected and the number of subjects increased a high level of statistical significance was achieved.

The Analysis of Attitudes

The intent of the analysis of attitudes in the study was to determine if there was a relationship between attitudes toward propositions and the selection of reasoning modes. Two

kinds of analysis were included in the design: (1) the effect of position, which in this measurement method meant the statement selected by the subject as his "most favored statement" from among the nine statements available to him under each proposition; and (2) involvement, or the intensity of feeling a subject had toward his position on each of the three propositions.

Statistical requirements permitted an examination of position, but precluded an analysis of involvement. The attitude data were so distributed that involvement measurements could not be combined so as to meet the requirements of the statistical method.

The analyses of "position" did not reveal a significant relationship between subject's attitudes and choice of a single reasoning mode. Position was broken down into three groupings, since the small number of cases in some of the nine positions precluded position by position analysis. The nine positions on the measuring instrument were grouped into three sections. The Chi Squares used were testing the question, "Were more of the Category I subjects than expected by chance alone actually found in any of the position groupings?"

The nonsignificant results offer at least two alternatives for comment: (1) there is no relationship between a subject's attitude and his consistent choice of a single reasoning mode; or (2) there is a relationship, but the study failed to show it due to error in design.

The experimenter finds it difficult to conclude that no

relationship exists between attitudes and consistent choice of a single reasoning mode. Attitude has been found to be a consistent factor in the mediation of verbal behavior.

Several examples of reasoning mode choice cited in Chapter I strongly suggest that attitudes are connected with consistent use of the same reasoning mode. Edwards, for example, saw his God as the final authority. To Theodore Parker happenings in the world were the product of a "causal chain" originally set in motion by a now transcendent God. In his sermons Parker therefore sought to explain the world in terms of cause and effect.

The evidence from previous studies of attitudes and verbal behavior and the speaker examples cited in the study do not warrant the rejection of the idea that attitudes are related to choice of a single reasoning mode. Two problems in the study's design for analyzing attitudes and mode choice support retention of the idea that attitudes are connected to mode choice: (1) although sufficient for the statistical technique, the sample of attitude positions was much too small to draw good conclusions about the relationship of attitude position and limitation of reasoning modes; and (2) attitudes may not have been aroused in the study.

The latter problem is the more crucial. Several studies have shown the difficulty of interpreting results about attitudes and verbal behavior when no specific effort to arouse

attitudes has been made. Welden,^{51,30} for example, showed that previous investigators were mistaken in concluding that attitudes did not affect retention of public speaking. Welden demonstrated that when the appropriate attitudes are aroused in the experimental situation a connection can be shown between attitudes and retention.

This study made no specific effort to arouse attitudes on and around the three propositions used. The population was composed of undergraduate college students; the propositions concerned, for this population, relatively abstract matters of national policy. The experimenter doubts that the subjects had intense attitudes on the propositions.

Because of these three factors, previous literature on the connection of attitudes and verbal behavior, the small size of the sample in the study's attempt to look for a relationship in this case, and the probability that attitudes did not really come into play, full acceptance of the statistical results is not warranted. The results did not show a positive or negative relationship.

Summary. The purpose of this chapter was to comment upon the results of the study. The results were: confirmation of the hypothesis; (2) inadequate data for examining attitude involvement and choice of reasoning mode; (3) statistical

³⁰Terry Welden, "The Effect on Attitudes and Retention of Message Order in Controversial Material," Dissertation Abstracts, 1962, 22: 4442.

results which did not clearly show a positive or a negative relationship between a subject's attitudes and his limitation of reasoning modes.

The statistical rejection of a relationship between attitudes toward the propositions and consistent choice of a single reasoning mode was questioned because of the small sample size and the probability that attitudes were not really aroused in the study.

CHAPTER V

SUMMARY AND QUESTIONS FOR FURTHER STUDY

Summary

This study attempted to discover whether or not untrained speakers prefer to consistently use a single mode of reasoning. Two observations led to the study: (1) rhetorical theory from antiquity forward, although extensively treating reasoning modes, has not dealt with preference by speakers for certain modes of reasoning; and (2) several rhetorical studies of leading speakers have shown that they did prefer one or no more than two of the various modes of reasoning.

Does the preference for a single mode of reasoning found in the historical studies of several trained speakers extend to relatively untrained speakers? That question was the basic question for this study. Study of the question was felt to be important for at least two reasons: (1) a small but distinguishable addition to rhetorical theory; and (2) additional and perhaps useful information for argumentation teachers.

To study the question an experimental design was developed, using as a population undergraduate college students in their first college course in speech. The design sought

confirmation or rejection of the hypothesis that:

Untrained speakers preparing to communicate on several propositions will display a non-random biased selection of reasoning modes, tending to limit themselves to a single mode of reasoning in each communication.

In the event that the hypothesis was confirmed, information was desired about causation. "Attitudes" have been shown to be a potent force in the organization and content of verbal behavior. Accordingly, the study included a method of assessing attitudes toward the propositions used in the study. The intent was to examine the relationship between attitudes toward a series of propositions and the tendency to prefer, if any, the same mode of reasoning in communicating on those propositions.

Two pilot studies were carried out. The pilot studies had two purposes: (1) to secure preliminary information on the hypothesis; and (2) to develop an adequate design for a good test of the hypothesis.

After analysis of the pilot studies, the design of the study was conceived as follows: (1) the experimenter selected three controversial topic areas, drawn from current important national and international problems; (2) the experimenter phrased three policy propositions from the three topic areas; (3) a small naive segment of the study's population was asked to think of and write down arguments for and against each proposition; (4) the experimenter took the most popular (most suggested) argument suggested by the subjects for each proposition and phrased six statements for each argument; (5) each set of

six statements were so written that a pair, one pro and one con, were to represent each of three modes of reasoning, reasoning from cause to effect, reasoning from figurative analogy, and reasoning by appeal to authority; (6) a panel of experts was employed to check the experimenter's judgement as to whether each statement was what it purported to be-- either pro or con and representing a given mode of reasoning; (7) after experimenter and panel agreement on statement content, the statements were combined into booklet form; (8) an attitude scale for each proposition was developed, using a slightly modified form of the "latitudes of acceptance and rejection" approach to the assessment of attitudes; (9) 132 subjects filled out the booklet, being told to select from each six under each proposition "that statement they would be most likely to use when they made a speech on that proposition;" (10) 140 subjects completed the attitude scales on each proposition; (11) results were analyzed.

The null hypothesis was that chance alone would determine how many subjects would select statements employing the same mode of reasoning under each of the three propositions. The null hypothesis was rejected. Twenty-four of the 132 valid responses showed the same reasoning mode selected under each proposition. The statistical method used, Chi Square, showed the result to be significant at the .025 level. Apparently, some factor or factors other than chance was operating in subject selection of reasoning modes.

Rejection of the null hypothesis permitted acceptance

of the experimental hypothesis; a significant number of untrained speakers will consistently select the same mode of reasoning when a choice is available.

In the analysis of attitudes as a possible causative factor, two attitude concepts were employed, position and involvement. The number of subjects proved too small and improperly distributed to comment on involvement. An analysis of position was possible, and that analysis showed that subjects who consistently chose the same reasoning mode were not different in their positions than other subjects. The experimenter questioned these results on several grounds.

The two main conclusions in the study were: (1) a significant number of untrained speakers will tend to choose the same reasoning mode in preparing to communicate on several propositions; and (2) the question of a relationship between attitudes toward propositions and the choice of a single reasoning mode on those propositions was not adequately explored in this study.

Questions for Further Study

This study did not produce a good analysis of the effect of attitudes on consistent choice of a reasoning mode. A further study could enlarge the sample size, and give a much clearer picture of the relationship, if one exists.

Through the pilot studies and the present study, the propositions used were limited to three, and the number of statements under each proposition limited to six. A question to explore is whether or not an expansion in the number of both

propositions and statements would yield the results found in this study. Raising the number of statements would also allow including more than three modes of reasoning.

A number of studies in both speech and psychology have been concerned with the personality characteristics of people who exhibit certain behavior patterns. Are there distinctive personality characteristics in people who prefer a single mode of reasoning? In people who prefer causal reasoning? Appeal to authority? Analogy?

Through the pilot studies and the present study, there was constantly a "deviate" judge on the panel used to validate the statements for the measurement of mode choosing. The experimenter attributed the deviation to lack of professional knowledge of modes of reasoning. Was that attribution correct, or was some other factor operating?

In the study thirteen of the twenty-four subjects who satisfied the hypothesis chose reasoning by analogy. Does this mean that among untrained speakers who prefer a single reasoning mode, more will prefer analogy than any other mode? Would a similar or larger replication using different propositions and different statements continue the larger preference for analogy?

By several standards analogy is a more ambiguous mode of reasoning than other modes. Did the thirteen subjects who chose analogy three times and the large number of other subjects who chose analogy twice do so because of the perceived ambiguity in analogy? Did as many subjects as did choose

analogy do so in order to escape taking a more "positive" commitment on the study propositions?

In the study the experimenter sought to make sure that all subjects were equally "familiar" with the three basic arguments employed. The experimenter felt that lack of familiarity might somehow distort the "normal" patterns of reasoning mode choice. But, as noted in Chapter IV, the opposite may be true. Is reasoning mode choice confined even more strongly to a single mode when the argument is not familiar? Is it possible that the study got significant results not because the hypothesis pattern is true, but because many subjects were unfamiliar with the arguments?

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APPENDIX A

Test Form--First Pilot Study

TOPIC #1: THE UNITED STATES SHOULD USE DIRECT MILITARY FORCE TO UNSEAT FIDEL CASTRO.

- a. The use of military force in Cuba might anger many neutralist Latin American countries.
- b. According to Teague Johnson, "A U.S.-backed war in Cuba would be a tragedy of the first order."
- c. T. S. Godwin asserts, "Only by direct action can we remove a Soviet-backed Fidel Castro."
- d. It's time to rid ourselves of that proverbial single rotten apple.
- e. Direct U.S. action in Cuba will prevent other Latin-American countries from going communist.
- f. The strong animal attacks the weak; the rational human persuades the weaker.

TOPIC #2: FEDERAL INCOME TAXES SHOULD BE SUBSTANTIALLY REDUCED.

- a. A reduction in taxes without a reduction in spending would be like the family which always spends more than it takes in.
- b. A balanced budget is like a balanced meal--good for you.
- c. A reduction in income taxes without a reduction in Federal spending will lead to inflation.
- d. A reduction in Federal income taxes will result in increased personal purchasing power.
- e. To Wendell Simmons, "With all our national problems, a cut in income taxes is unthinkable at this time."
- f. C. Albert Kernhauser has pointed out that, "Our greatest economic need is to put more money in the hands of more people."

TOPIC #3: COMMUNIST CHINA SHOULD BE ADMITTED TO THE UNITED NATIONS.

- a. Admission of Red China to the UN would permit that country to veto UN action against Communist aggression.
- b. Eric Snadman has stated that, "Red China is the world's largest nation; it doesn't make sense to keep them out."

- c. The closer they are the easier it is to keep an eye on them.
- d. According to Donald Allman, "The UN charter prohibits membership to aggressor nations, a good description of Red China."
- e. If Red China were admitted to the United Nations, that country would be compelled to sign the nuclear test treaty.
- f. No family should claim a murderer as one of its own.

Final Panel Action--First Pilot Study

Statement	Prejudged	1	2	3	4	5	6	7	8	Judges
I a	CC	1	1	1	1	1	1	1	1	
b	CAA	1	1	1	1	1	1	1	1	
c	PAA	1	1	1	1	1	1	1	1	
d	PA	1	5	1	1	1	1	1	0	
e	PC	1	1	1	1	1	1	1	1	
f	CA	1	1	1	1	1	1	1	1	
II a	CA	1	1	1	1	1	1	1	1	
b	PA	1	1	0	1	1	1	0	1	
c	CC	1	1	1	1	1	1	1	1	
d	PC	1	1	1	1	1	1	1	1	
e	CAA	1	1	1	1	1	1	1	1	
f	PAA	1	1	1	1	1	1	1	1	
III a	CC	1	1	1	1	1	1	1	1	
b	PAA	1	1	1	1	1	1	1	1	
c	PA	1	1	1	1	1	1	1	1	
d	CAA	1	1	1	1	1	1	1	1	
e	PC	1	1	1	1	1	1	1	1	
f	CA	1	1	1	5	1	1	0	1	

*The first symbol denotes con (C), or pro (P); the second symbols are cause to effect (C), appeal to authority (AA), and analogy (A).

**"1" denotes full agreement; "5" disagreement on mode of reasoning; and "0" disagreement on pro or con.

APPENDIX B

Argument Origination

"Red China should be admitted to the United Nations"

ARGUMENTS	TALLY
1. Additional Communist vote in UN	111111111111111111
2. Unstable country	11111
3. War mongers	111111111111
4. Finish off Nationalist China	11111111111111111111
5. Legalize Communist aggression	1
6. Would be insincere in UN	111111111111
7. Against U.S. interests	11111
8. Legal government of China	11111111
9. Help keep an eye on them	111111
10. Give world sanctions	111
11. Not legal government of China	111
12. Add to Red China's world power	111
13. Increase Red China stability	11
14. Impair U.S. prestige	1
15. In U.S. interests	1
16. Increase chances of world peace	11

"The United States should use direct military force to unseat Fidel Castro in Cuba"

1. Against U.S. traditions	111111111111
2. Indirect help only	1
3. Strengthen U.S.	111
4. No strategic need to do so	1111
5. Lose Latin-American friends	11111111111111111111
6. Prove U.S. determination	1111
7. Communism too close to us	11111
8. No political need for action	1
9. Rupture U.S.-Russian relations	11
10. Likelihood of starting world war	111111111111111111
11. Castro would be replaced by another Communist	11
12. Strategic need to do so	11111
13. Castro on decline anyway	111111

1.	Owe it only to ourselves	1
2.	Would limit long-range spending policy	11111111111111111111
3.	Too expensive to do so	1
4.	Make for better planning	11111111111111
5.	Requires too many economic controls	1
6.	No need for balance every year	111
7.	Cut down on debt	1111
8.	Cause depression	11111
9.	Help dollar stability	11111
10.	Debt size no cause for alarm	111
11.	Cause raise in taxes	111
12.	Impossible to do so	111
13.	Would decrease foreign aid	1111

APPENDIX C

Second Pilot Study Statements

TOPIC #1: COMMUNIST CHINA SHOULD BE ADMITTED TO THE UNITED NATIONS

- a. Ernest Henke asserts that, "If Red China joins the United Nations, the future of Nationalist China is in doubt."
- b. Admission of Red China to the UN might well purchase the safety of Nationalist China.
- c. According to Eugene Denum, "Red China could hardly invade Taiwan if she were a new member of the peace-oriented UN."
- d. A Red Chinese wolf clothed in the sheepskin of the United Nations may enlist the other sheep to overwhelm Nationalist China."
- e. Admission of Red China will bring about the downfall of Nationalist China.
- f. Perhaps music "doth have charms to soothe the savage beast;" perhaps the peace theme of the United Nations will have its effect on Red China.

TOPIC #2: THE UNITED STATES SHOULD USE DIRECT MILITARY FORCE TO UNSEAT FIDEL CASTRO

- a. Of what use is it to cut off one head when to do so may raise many heads against us?
- b. Direct U.S. action in Cuba will prevent other Latin-American countries from going communist.
- c. Gold is worth more than silver, and U.S. security is worth more than friendship.
- d. T. S. Godwin asserts, "The gains made by removing Castro are worth more than some of our Latin-American friendships."
- e. The use of military force in Cuba might anger many neutralist Latin-American countries.
- f. According to Teague Johnson, "A U.S.-backed war in Cuba would alienate most of Latin America from us."

TOPIC #3: THE BUDGET OF THE FEDERAL GOVERNMENT SHOULD BE BALANCED EACH AND EVERY YEAR

- a. Balancing the budget simply to be balancing it will keep us from spending when we need to.
- b. The family shouldn't spend when it doesn't have the money--why should the Federal government?
- c. As Jerome Black puts it, "Spending needs are one thing; an unbalanced budget is quite another."
- d. An unbalanced budget to keep Federal spending up will actually lead to less money for spending.
- e. The balanced budget and spending needs are on a see-saw and neither should upset the other.
- f. According to Jeffrey White, "Our spending needs affect people, and people ought not to take second place to a beautifully balanced budget."

Final Panel Action--Second Pilot Study

Statement	Prejudged	1	2	3	4	5	6	7	Judges
I a	CAA	1	1	1	1	1	1	1	
b	PC	1	1	1	1	1	1	1	
c	PAA	1	1	1	1	1	1	1	
d	CA	1	1	1	1	1	1	1	
e	CC	1	1	1	1	1	1	1	
f	PA	1	1	1	1	1	1	1	
II a	CA	1	1	1	1	1	1	1	
b	PC	1	1	1	1	1	1	1	
c	PA	1	1	1	1	1	1	1	
d	PAA	1	1	1	1	1	1	1	
e	CC	1	1	1	1	1	1	1	
f	CAA	1	1	1	1	1	1	1	
III a	CC	1	1	1	1	1	1	1	
b	PA	1	5	0	1	1	1	1	
c	PAA	1	1	1	1	1	1	1	
d	PC	1	1	1	1	1	1	1	
e	CA	0	1	1	5	0	1	1	
f	CAA	1	1	1	1	1	1	1	

*Symbols here are the same used to summarize panel action in Appendix A.

APPENDIX D

Response Patterns--Second Pilot Study

SUBJECT NUMBER	PATTERNS		
	1	2	3
1	CC	CC	PC
2	PA	CC	PA
3	CC	PC	CA
4	CC	CC	CA
5	PC	CC	PA
6	CA	CC	CC
7	PAA	CA	CA
8	PA	CA	PA
9	PA	PA	CA
10	CA	PA	CAA
11	CA	PA	CAA
12	PA	PC	PA
13	CA	PA	CAA
14	CA	CA	CAA
15	CC	CA	PA
16	CA	PA	CC
17	CAA	CAA	CAA
18	CA	CA	CAA
19	CC	CC	CC
20	PC	CA	PC
21	CAA	PA	CA
22	CA	PC	CA
23	PC	PC	CAA
24	CA	CAA	PA
25	PA	CC	CAA
26	CC	CC	PAA
27	CA	CA	CAA
28	CA	PC	CAA
29	CC	CC	PC
30	PC	CA	PA
31	PC	CC	CA
32	CA	CC	CA
33	CAA	PA	PA
34	CC	PC	PC
35	PAA	CAA	CC
36	PA	PC	CAA
37	PC	CC	CC
38	PC	PA	PAA

39
40

PAA
PC

69

PC
PA

PA
PAA

*First symbol represents pro (P) or con (C); the second represent reasoning by cause to effect (C), by appeal to authority (AA), and analogy (A).

APPENDIX E

The Attitude Tests

Studies of Citizens' Opinions on Public Issues

This is part of a scientific study aimed toward better understanding of the stands various groups of people take on public issues. It is not undertaken with a view of meddling in your private opinions. If you have any doubts or reservations on this score, please feel perfectly free not to put your name.

Name _____ Man _____ Woman _____

Age _____ Occupation _____

If a student, please also provide the following information:

School _____ Major _____

Classification _____

Below are some statements expressing various opinions on the admission of Red China to the United Nations.

1. Please read all of the statements carefully first before marking any marks on this page.
2. Now that you have carefully read all the statements, underline one statement that comes closest to your stand on this matter.

-
- A. The admission of Red China to the United Nations is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by the admission of Red China to the United Nations.
 - C. It seems that United States' interests would be best served if Red China were admitted to the United Nations.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if Red China is admitted to the United Nations.
 - E. From the point of view of United States' interests, it is hard to decide whether it is preferable to admit Red China to the United Nations.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if Red China is not admitted to the United Nations.
 - G. It seems that United States interests would be best served if Red China is not admitted to the United Nations.
 - H. On the whole, United States' interests will be served best if Red China is not admitted to the United Nations.
 - I. Not admitting Red China to the United Nations is absolutely essential from all angles in United States' interests.

Please go on to the next page.

The statements presented below are the same as on the preceding page.

1. Please read all the statements once more before making any marks on the page.
2. There may be other statement or statements which you find not objectionable from your point of view. Put a circle around the letter in front of such a statement or statements which are not objectionable to you.

-
- A. The admission of Red China to the United Nations is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by the admission of Red China to the United Nations.
 - C. It seems that United States' interests would be best served if Red China were admitted to the United Nations.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if Red China is admitted to the United Nations.
 - E. From the point of view of United States' interests, it is hard to decide whether it is preferable to admit Red China to the United Nations.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if Red China is not admitted to the United Nations.
 - G. It seems that United States interests would be best served if Red China is not admitted to the United Nations.
 - H. On the whole, United States' interests will be served best if Red China is not admitted to the United Nations.
 - I. Not admitting Red China to the United Nations is absolutely essential from all angles in United States' interests.

Please go on to the next page.

The statements presented below are the same as those on the two preceding pages.

1. Please read all the statements again before making any marks on this page.
2. Now that you have read the statements again, cross out the one statement which is most objectionable from your point of view.

-
- A. The admission of Red China to the United Nations is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by the admission of Red China to the United Nations.
 - C. It seems that United States' interests would ~~be~~ be best served if Red China were admitted to the United Nations.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if Red China is admitted to the United Nations.
 - E. From the point of view of United States' interests, it is hard to decide whether it is preferable to admit Red China to the United Nations.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if Red China is not admitted to the United Nations.
 - G. It seems that United States' interests would be best served if Red China is not admitted to the United Nations.
 - H. On the whole, United States' interests would be served best if Red China is not admitted to the United Nations.
 - I. Not admitting Red China to the United Nations is absolutely essential from all angles in United States' interests.

Please go on to the next page.

The statements presented below are the same as those on the three preceding pages.

1. Please look over the statements again before making any marks on this page.
2. There may be other statement or statements which you find objectionable from your point of view. Cross out the letter in front of such a statement or statements which are objectionable to you.

-
- A. The admission of Red China to the United Nations is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by the admission of Red China to the United Nations.
 - C. It seems that United States' interests would be best served if Red China were admitted to the United Nations.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if Red China is admitted to the United Nations.
 - E. From the point of view of United States' interests, it is hard to decide whether it is preferable to admit Red China to the United Nations.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if Red China is not admitted to the United Nations.
 - G. It seems that United States' interests would be best served if Red China is not admitted to the United Nations.
 - H. On the whole, United States' interests will be served best if Red China is not admitted to the United Nations.
 - I. Not admitting Red China to the United Nations is absolutely essential from all angles in United States' interests.

Please go on to the next page.

Below are some statements expressing various opinions on the use of direct military force by the United States to unseat Fidel Castro.

1. Please read all of the statements carefully first before making any marks on this page.
2. Now that you have carefully read all the statements underline one statement that comes closest to your stand on this matter.

-
- A. Direct military force by the United States to unseat Fidel Castro is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by the use of direct military force by the United States to unseat Fidel Castro.
 - C. It seems that United States' interests would be best served if the United States used direct military force to unseat Fidel Castro.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if the United States uses direct military force to unseat Fidel Castro.
 - E. From the point of view of United States' interests, it is hard to decide whether it is preferable for the United States to use direct military force to unseat Fidel Castro.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if the United States does not use direct military force to unseat Fidel Castro.
 - G. It seems that United States' interests would be best served if the United States does not use direct military force to unseat Fidel Castro.
 - H. On the whole, United States' interests will be served best if the United States does not use direct military force to unseat Fidel Castro.
 - I. It is absolutely essential from all angles in United States' interests to not use direct military force by the United States to unseat Fidel Castro.

Please go on to next page.

The statements presented below are the same as on the preceding page.

1. Please read all the statements once more before making any marks on the page.
2. There may be other statement or statements which you find not objectionable from your point of view. Put a circle around the letter in front of such a statement or statements which are not objectionable to you.

-
- A. Direct military force by the United States to unseat Fidel Castro is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by the use of direct military force by the United States to unseat Fidel Castro.
 - C. It seems that United States' interests would be best served if the United States used direct military force to unseat Fidel Castro.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if the United States uses direct military force to unseat Fidel Castro.
 - E. From the point of view of United States' interests, it is hard to decide whether it is preferable for the United States to use direct military force to unseat Fidel Castro.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if the United States does not use direct military force to unseat Fidel Castro.
 - G. It seems that United States' interests would be best served if the United States does not use direct military force to unseat Fidel Castro.
 - H. On the whole, United States' interests will be served best if the United States does not use direct military force to unseat Fidel Castro.
 - I. It is absolutely essential from all angles in United States' interests to not use direct military force by the United States to unseat Fidel Castro.

Please go on to the next page.

The statements presented below are the same as those on the two preceding pages.

1. Please read all the statements again before making any marks on this page.
2. Now that you have read the statements again, cross out the one statement which is most objectionable from your point of view.

-
- A. Direct military force by the United States to unseat Fidel Castro is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by the use of direct military force by the United States to unseat Fidel Castro.
 - C. It seems that United States' interests would be best served if the United States used direct military force to unseat Fidel Castro.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if the United States uses direct military force to unseat Fidel Castro.
 - E. From the point of view of United States' interests, it is hard to decide whether it is preferable for the United States to use direct military force to unseat Fidel Castro.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if the United States does not use direct military force to unseat Fidel Castro.
 - G. It seems that United States' interests would be best served if the United States does not use direct military force to unseat Fidel Castro.
 - H. On the whole, United States' interests will be served best if the United States does not use direct military force to unseat Fidel Castro.
 - I. It is absolutely essential from all angles in United States' interests to not use direct military force by the United States to unseat Fidel Castro.

Please go on to the next page.

The statements presented below are the same as those on the three preceding pages.

1. Please look over the statements again before making any marks on this page.
2. There may be other statement or statements which you find objectionable from your point of view. Cross out the letter in front of such a statement or statements which are objectionable to you.

-
- A. Direct military force by the United States to unseat Fidel Castro is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by the use of direct military force by the United States to unseat Fidel Castro.
 - C. It seems that United States' interests would be best served if the United States used direct military force to unseat Fidel Castro.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if the United States uses direct military force to unseat Fidel Castro.
 - E. From the point of view of United States' interests, it is hard to decide whether it is preferable for the United States to use direct military force to unseat Fidel Castro.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if the United States does not use direct military force to unseat Fidel Castro.
 - G. It seems that United States' interests would be best served if the United States does not use direct military force to unseat Fidel Castro.
 - H. On the whole, United States' interests will be served best if the United States does not use direct military force to unseat Fidel Castro.
 - I. It is absolutely essential from all angles in United States' interests to not use direct military force by the United States to unseat Fidel Castro.

Please go on to the next page.

Below are some statements expressing various opinions on whether the federal budget should be balanced each and every year.

1. Please read all of the statements carefully first before making any marks on this page.
2. Now that you have carefully read all the statements, underline one statement that comes closest to your stand on this matter.

-
- A. Balancing the federal budget each and every year is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by balancing the federal budget each and every year.
 - C. It seems that United States' interests would be best served if the federal budget is balanced each and every year.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if the federal budget is balanced each and every year.
 - E. From the point of view of United States' interests, it is hard to decide if the federal budget should be balanced each and every year.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if the federal budget is not balanced each and every year.
 - G. It seems that United States' interests would be best served if the federal budget is not balanced each and every year.
 - H. On the whole, United States' interests will be served best if the federal budget is not balanced each and every year.
 - I. It is absolutely essential from all angles in United States' interests to not balance the federal budget each and every year.

Please go on to the next page.

The statements presented below are the same as on the preceding page.

1. Please read all the statements once more before making any marks on the page.
 2. There may be other statement or statements which you find not objectionable from your point of view. Put a circle around the letter in front of such a statement or statements which are not objectionable to you.
-
- A. Balancing the federal budget each and every year is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by balancing the federal budget each and every year.
 - C. It seems that United States' interests would be best served if the federal budget is balanced each and every year.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if the federal budget is balanced each and every year.
 - E. From the point of view of United States' interests, it is hard to decide if the federal budget should be balanced each and every year.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if the federal budget is not balanced each and every year.
 - G. It seems that United States' interests would be best served if the federal budget is not balanced each and every year.
 - H. On the whole, United States' interests will be served best if the federal budget is not balanced each and every year.
 - I. It is absolutely essential from all angles in United States' interests to not balance the federal budget each and every year.

Please go on to the next page.

The statements presented below are the same as those on the two preceding pages.

1. Please read all the statements again before making any marks on this page.
2. Now that you have read the statements again, cross out the one statement which is most objectionable from your point of view.

-
- A. Balancing the federal budget each and every year is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by balancing the federal budget each and every year.
 - C. It seems that United States' interests would be best served if the federal budget is balanced each and every year.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if the federal budget is balanced each and every year.
 - E. From the point of view of United States' interests, it is hard to decide if the federal budget should be balanced each and every year.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if the federal budget is not balanced each and every year.
 - G. It seems that United States' interests would be best served if the federal budget is not balanced each and every year.
 - H. On the whole, United States' interests would be served best if the federal budget is not balanced each and every year.
 - I. It is absolutely essential from all angles in United States' interests to not balance the federal budget each and every year.

Please go on to the next page.

The statements presented below are the same as those on the three preceding pages.

1. Please look over the statements again before making any marks on this page.
2. There may be other statement or statements which you find objectionable from your point of view. Cross out the letter in front of such a statement or statements which are objectionable to you.

-
- A. Balancing the federal budget each and every year is absolutely essential from all angles in United States' interests.
 - B. On the whole, United States' interests will be served best by balancing the federal budget each and every year.
 - C. It seems that United States' interests would be best served if the federal budget is balanced each and every year.
 - D. Although it is hard to decide, it is probable that United States' interests may be better served if the federal budget is balanced each and every year.
 - E. From the point of view of United States' interests, it is hard to decide if the federal budget should be balanced each and every year.
 - F. Although it is hard to decide, it is probable that United States' interests may be better served if the federal budget is not balanced each and every year.
 - G. It seems that United States' interests would be best served if the federal budget is not balanced each and every year.
 - H. On the whole, United States' interests will be served best if the federal budget is not balanced each and every year.
 - I. It is absolutely essential from all angles in United States' interests to not balance the federal budget each and every year.

APPENDIX F

Mode Choice Responses

<u>Subjects</u>	<u>Propositions</u>		
	1	2	3
1.	CA	CAA	CAA
2.	CAA	CC	CC
3.	CC	CA	CAA
4.	CA	CA	CAA
5.	PA	PC	PAA
6.	CA	CA	CA
7.	PA	PC	CA
8.	CA	PC	CA
9.	PAA	PA	PAA
10.	PA	CA	CAA
11.	PA	CC	CA
12.	CA	PA	CA
13.	PC	CA	CA
14.	CAA	PA	CA
15.	CAA	CAA	CAA
16.	CC	PA	CAA
17.	CA	CAA	PAA
18.	CC	CA	CA
19.	CAA	CA	CA
20.	CA	CA	CA
21.	PC	CAA	CAA
22.	PAA	PAA	PAA
23.	CA	CAA	CC
24.	PC	CA	CA
25.	PAA	PAA	PAA
26.	CA	CAA	CA
27.	PC	PA	PA
28.	PA	CAA	PA
29.	CAA	PC	PAA
30.	CAA	CA	PA
31.	CC	PAA	PAA
32.	CA	PAA	CA
33.	PA	PA	CA
34.	CA	CAA	PC
35.	CC	CC	PA
36.	PA	PAA	PAA
37.	CA	CA	PA
38.	CA	PC	CAA

39.	CAA	PAA	CA
40.	PA	CAA	PA
41.	CA	PC	PA
42.	CAA	PC	PAA
43.	PC	CC	CC
44.	PC	CA	PA
45.	CA	PAA	PA
46.	PA	PAA	PAA
47.	CAA	CAA	PA
48.	CAA	PA	CAA
49.	CC	CA	PAA
50.	CAA	CA	PAA
51.	PA	PA	PAA
52.	CC	PAA	PAA
53.	CAA	CAA	PAA
54.	PA	PC	CAA
55.	PC	PC	PC
56.	CAA	PAA	*CAA
57.	PA	CC	CA
58.	CAA	PC	CA
59.	PA	CAA	CA
60.	CC	PC	CA
61.	CC	CA	PAA
62.	PA	CC	CA
63.	CA	CAA	CA
64.	PC	PAA	PC
65.	PA	CA	PA
66.	CAA	PAA	CA
67.	CC	PC	CAA
68.	CC	CC	CA
69.	CA	PAA	CA
70.	CC	CA	PA
71.	CA	PAA	PA
72.	CA	CA	CA
73.	CAA	CA	PA
74.	CA	PA	PA
75.	PA	PAA	PC
76.	CA	PC	PC
77.	CC	PC	PC
78.	PA	CA	PA
79.	PC	CC	PAA
80.	CA	PA	PA
81.	CAA	PAA	PAA
82.	CA	CAA	CA
83.	PA	PC	PA
84.	CAA	CAA	CC
85.	PA	PA	PA
86.	PAA	CA	CA
87.	CAA	PAA	CAA
88.	CC	CA	CA
89.	PC	CC	CA
90.	CA	CAA	CAA
91.	PC	PC	CA
92.	CAA	CA	CAA
93.	CA	CA	CAA

94.	PC	CAA	CAA
95.	CAA	CA	CAA
96.	PAA	PA	PC
97.	CG	PC	PA
98.	PC	CA	PA
99.	CAA	CAA	CAA
100.	CAA	CG	CA
101.	CG	CAA	CA
102.	PAA	PC	CA
103.	CAA	PAA	PAA
104.	CG	PAA	PAA
105.	CAA	CAA	CA
106.	CG	CAA	CAA
107.	PC	CG	CAA
108.	CA	PAA	PA
109.	PC	CG	CG
110.	CA	PA	PA
111.	CAA	CA	PAA
112.	CA	PC	CG
113.	PAA	CA	PC
114.	PC	CA	PC
115.	PA	CA	CA
116.	PA	CAA	CA
117.	CAA	CA	CA
118.	PAA	CG	PC
119.	PAA	CG	CG
120.	PA	CAA	CA
121.	CA	PAA	PC
122.	PC	PC	PAA
123.	CA	PA	CA
124.	CA	PA	CAA
125.	PA	PA	PA
126.	CA	PAA	PA
127.	PC	PAA	PA
128.	CG	CAA	PAA
129.	PA	PC	PA
130.	PA	CAA	CAA
131.	CG	CAA	PA
132.	CA	CG	PC