AN EXPLORATORY STUDY OF THE EFFECTS OF TRAINING IN ARGUMENTATION ON STUDENT OPINION CHANGE

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ABSTRACT

AN EXPLORATORY STUDY OF THE
EFFECTS OF TRAINING IN ARGUMENTATION
ON STUDENT OPINION CHANGE

by Marsha Trew

The purpose of the research was to determine if training in argumentation could affect the bases for student evaluation of communication aimed at changing their opinions. Two intact groups were compared via non-parametric analysis of variance procedure. Group 1 (experimental) consisted of students enrolled in a course in argumentation at Michigan State University during fall term, 1968. Group 2 (control) consisted of students enrolled in a course in business letter writing at the same institution for the same period of time.

Both groups responded to opinion change measures under varied treatments at two time periods. Time 1 measures were collected at the beginning of the fall term and Time 2 measures were collected at the end of the term. The treatments consisted of varying message topics, message adequacy (in terms of reasoning, evidence, analysis and organization), and the credibility of the sources delivering the messages.

It was hypothesized (H_1) that at T_1 both groups would respond more favorably to high source credibility conditions. At T_2 it was hypothesized that the control group would continue to base their opinion change primarily on the credibility of the source (H_2). However, H_3 stipulated that the experimental group would be capable of expanding its bases of evaluation to include message adequacy. These three hypotheses were tested on four topics.

H_1 was statistically supported on one of four topics. Trends on the other three topics were in the posited direction. An unexpected low message trend was noted.

H_2 was not supported statistically; the high source credibility trends were in the stipulated direction and the low message trend persisted.

H_3 was not supported. Significant high credibility and low message effects were found on one topic. The trends lend moderate support to the hypothesis.

Three issues were noted to partially explain the lack of statistically significant results. First, the opinion scales were found to be fairly unstable and internally not consistent. These were reflected in correlations. Second, a nine week course may not provide sufficient time to learn and use specific bases of judgment. Third, the research assumed that the acquisition and use of the principles associated with argumentation occurred simultaneously. A rationale for guided practice in analyzing and criticizing persuasive communication may be needed.

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By

Marsha Trew

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CHAPTER I

INTRODUCTION

We live in a period of history which may be called an age of advocacy. One can scarcely function in society without a continual barrage of persuasive communications. Newspapers, television, radios, and magazines carry numerous attempts to elicit certain behaviors from their clientele. Such attempts often take the form of advertisements or editorial commentary calling for choices among varying alternatives. For instance, Bob Richards (an Olympic champion) has advertised on television for Wheaties breakfast food for several years. In the 1964 and 1968 presidential elections, several well known motion picture stars endorsed the candidates. Every day, one is faced with selecting from certain products promoted by store clerks and famous movie stars, or from different beliefs and attitudes advocated by one's associates. Though significant to the individual, these decisions are not as critical as choices made in the voting booth. During the 1968 election, hundreds of local, state, and national candidates for public office vied for the voters' decisions; choices that were ideally based on critical analyses of the candidates and the issues. Whatever the situation, some kind of decision is usually required.

In this age of advocacy, the listener should be equipped to make decisions rationally. Critical decision making is a necessity, for most of our choices are important to us; and our voting selections are crucial to the functioning of a representative democracy.

If man were born a rational being and naturally rendered objective decisions to persuasive communications, then the study of the logical requirements of proof for conclusions would probably be unnecessary. However, as Bettinghaus has suggested:

> Many of the effects of persuasive communication which we have studied seem to indicate that man does not behave rationally or logically when confronted with emotional appeals or other types of persuasive speeches. The evidence seems overwhelming that man is not born a rational organism. But perhaps ways of teaching rational decision making can be found (1968, pp. 286-287).

The present research is directed toward the problem of finding a way of teaching rational decision making. The objective of the present study is to see whether training in argumentation can affect student responses to certain experimental persuasive communications. The study attempts to determine whether part of the subjects' (Ss') bases for decision making can be altered by the adaptation of specific criteria associated with the study of argumentation.

Statement of the Problem

This exploratory study concerns students of argumentation. It compares the degree of opinion change among two intact groups of students enrolled at Michigan State University during the fall term

of 1968: (1) those persons who were enrolled in Communication 309, a course in argumentation, and (2) a group of students who were not enrolled in Communication 309.

This research explores student opinion change when varying levels of source credibility and message adequacy are combined.

Previous research (Clevenger and Andersen, 1963) has demonstrated that greater opinion change results from a high credible source than from a low credible source. Greenberg and Tannenbaum (1961) found that when a persuasive message was attributed to a high credible source, the Ss responded more favorably than to the same material without any source. Miller and Greenberg (1966) theorized that if a high credible source were identified prior to a message, the listeners would be receptive to the presentation; if a low credible source were attributed to a message, audience resistance to the presentation would occur. The results of their research support this position.

Hovland and Weiss (1951) obtained similar results. They constructed pro and con messages on four topics. In the experimental situation, each message could be attributed to a high or low credible source. They found significantly greater opinion change when identical messages were attributed to trustworthy sources than to untrustworthy sources. Hovland and Weiss theorized that the Ss initially resisted the messages presented by untrustworthy sources.

They also found that the presentations attributed to a high credible source were rated as being more 'fair' and more 'justified' in drawing their conclusions.

Thus, it is reasonable to assume that students can distinguish between high and low credible sources and respond more favorably to the former. Furthermore, at least two message dimensions may be partially attributed to the source: whether the message is 'fair' and whether the conclusions are 'justified.' If this position is valid, then students without any formalized structured criteria for judging the merits of sources and messages respond primarily in terms of the source.

On the other hand, students provided with a specific basis for judgment may respond differently. The nature of this alleged difference is explored by discussing particular criteria: the principles of argumentation.

Argumentation may be defined as the study of the principles involved in the analysis, synthesis, and criticism of controversy (Mills, 1964, p. 6)[1] which "functions to discover and formulate the requirements of proof for a proposition or a conclusion (Windes and Hastings, 1965, p. 24)."

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[1]This discussion relies on Mills for most of the supportive opinion. In addition to the merit of his text books in argumentation, the 1968 edition of Reason in Controversy was used in Communication 309. Since this was the projected referent for the experimental population, Mills (1968) is used as the central authority in this discussion.

Students of argumentation study such major topics as propositions, analysis, investigation, attack and defense, and presentation of argument (Mills, 1968). Sets of criteria are given for each topic. The criteria may be used by students to evaluate various forms of communication. If the students in fact use these criteria, they should be able to discriminate between the source and message and be able to evaluate in terms of each. Specifically, students may employ the criteria in judging whether messages are 'adequately' or 'inadequately' reasoned, evidenced, analyzed and organized. This study attempts to discover whether a specific course in argumentation, Communication 309, can alter the Ss' bases of judgment. This research particularly explores the possibility that the Ss' abilities to evaluate and to discriminate between 'adequate' and 'inadequate' messages may be affected.

Discussion of the Relationship Between Argumentation and Evaluative Ability

Argumentation may be described in terms of its relationship to communication theory, its areas of concern and in terms of the abilities it attempts to develop in students. Mills has defined argumentation as:

> a branch of communication theory which deals with the analysis, synthesis, and criticism of primarily reasoned discourse about controversial ideas. The principles of this subject are applied in order to discover the proof requirements of an assertion or to make a case for or against an assertion (1964, p. 6).

Argumentation emphasizes the rubrics of analysis. As Mills further states:

> Argumentation is concerned mainly with advocacy and, to a lesser degree, with inquiry. In this latter sense it teaches analysis for personal understanding, whether or not one advocates or perceives advocacy. Perhaps the foremost educational goal of this subject is the improvement in critical thinking ability so that persons will demand more of themselves and of others in the conduct of controversies. To this end are directed the explanations of the core concepts of argumentation: proof requirements of a thesis, propositions, analysis, investigation, evidence, reasoning, cases, attack and defense, cross-examination, and evaluation (1968, pp. 25-26).

Students of argumentation are supposed to develop an ability to evaluate communications advocated by others and by themselves. They evaluate the evidence employed:

> Whether we speak, listen, read, or write, we have a stake in the quality of the evidence used. This is why a critical thinker tests the evidence in any matter of interest to him, whether it be his own evidence, that of an opponent, or that of an advocate who seeks his belief. If we wish to behave as rationally as possible, we will demand that the evidence approximate the probable truth, a condition which implies the achievement of as much verifiability as possible (Mills, 1968, p. 152).

They evaluate the reasoning upon which conclusions are drawn:

> Proof is an inherent part of every step in advocacy. The subpoints or contentions prove the points in partition which in turn prove the proposition (Hastings in Mills, 1964, p. 125).

> Three reasons for studying structures of arguments are nearly self-evident: such a study helps one to identify reasons and conclusions, it aids in the classification of arguments, and it then enables one to apply the appropriate tests (Mills, 1968, pp. 176-177).

> Intelligence in discourse consists mainly in grasping the implications of one's beliefs, points, or arguments . . . The kinds, tests, and fallacies of argument are of central importance in this kind of critical analysis. Laying out each argument to determine where it begins, where it concludes, and how it got there is the first step (Mills, 1968, p. 309).

They evaluate the sources used to support assertions:

> Is he impartial in this matter, or does he have a stake in the outcome? . . . Mental qualification . . . intelligence, education . . . Does this person have the credentials (trustworthiness, experience, etc.) of an authority in that field? . . .conflict of interest or some other possible source of bias (Mills, 1968, pp. 156-160).

A goal of argumentation is to develop the abilities to evaluate communications:

> Perhaps the greatest claim that can be made for the kind of analytical-critical instrument we have been considering is its value in critical thinking, whether one is speaking, listening, writing, reading, or meditating. With such an instrument one can evaluate the writing and the speaking of others, either in single presentations or in debates, and one can test his own reasoning with a sort of internal dialogue or deliberation (Mills, 1968, p. 17).

Hovland and Janis have referred to evaluative abilities which seem to be analogous to the abilities included in the study of argumentation:

> the set of abilities that make for careful scrutiny of the truth and cogency of arguments and appeals and of the logic and which the main conclusions are drawn. Included in this category is the ability to discount fallacious arguments, to identify propagandistic devices, and to detect signs of bias or manipulative intentions on the part of communicators (1959, p. 258).

It would seem that after exposure to a course in argumentation a student should become more competent in critical evaluation and less susceptible to certain types of persuasive communications. Hovland and Janis theorized that:

> the ability to evaluate will interfere with the acceptance of persuasive communications whenever critical evaluation involves discounting prestige effects, emotional appeals, and other propagandistic devices (1959, p. 259).

In other words, "the higher the person's skill, the greater the chances that he will reject rather than accept many of the

communications to which he is exposed (p. 258)." Freely states that a knowledge of the principles of argumentation is "a defense against the persuasion of others," and "if we subject their appeals to critical analysis, we increase our opportunity of making rational decisions (1966, p. 7)." Students in argumentation should possess a set of evaluative abilities that are more developed than those of students not exposed to argumentation. Hovland and Janis suggested that:

> the abilities requisite for evaluating argumentation are the products of formal education and specialized training which provides guided practice in criticizing and appraising various types of discourse (p. 259).

A course in argumentation is a part of the formal education in the "principles and procedures that constitute the discipline of argumentation (Brockriede and Ehninger, 1963, p. 27)."

If the goal of developing evaluative abilities is achieved in a course in argumentation, then students in the course should be less susceptible to some persuasive communications than students not in it. Communication 309 was directed toward this goal.

> This course focuses on the critical analysis of argumentative discourse. The primary purpose of the course is to aid you to develop your ability to evaluate critically arguments of others. Thus this course is receiver oriented rather than source oriented. However, a secondary purpose of the course is to aid you to develop your ability to construct intellectually acceptable arguments in support of your beliefs, (McCroskey, Syllabus, Fall, 1968, p. 1).

The course objectives were to make students more critical receivers

of communication and to evaluate critically the arguments of others (McCroskey, Interview, January, 1969). The instructor indicated that the target of the lectures was to train the class to evaluate messages as receivers. For example, the first lecture was intended to explain that in Communication 309, argumentation was training in persuasion from the receiver's point of view. Another lecture explained the concepts "burden of proof" and "presumption" from the receivers' point of view.

This approach to argumentation appears to be consistent with the goals and approach discussed in this study. Since the syllabus (see Appendix C) seems consistent with most text books in argumentation, Communication 309 may be assumed to be in the main stream of argumentation courses taught at other colleges and universities.[2]

HYPOTHESES

Three hypotheses are posited in this study. The first involves students without prior training in argumentation in college. Since the Ss have not been exposed to the formal training of argumentation and its discriminating sets of criteria for the evaluation of persuasive communications, the Ss should be more favorably impressed with the credibility of the source than the adequacy of the message.

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[2]Since such a status for Communication 309 is an assumption, it will be reflected in the design and statistical procedures used in this study by the use of non-parametric statistical analyses.

Hence, among the control and experimental groups, a high credible source (H) with an adequate (H) or inadequate (L) message should evoke more opinion change than a low credible source (L) with an adequate (H) or inadequate (L) message. That is, one would expect a gross discrimination between high and low sources rather than a finer one including the message and its evidence, reasoning, analysis and organization. For the control and experimental groups, this study posits that:

H_1: Prior to a course in argumentation, the degree of opinion change will be greater in the condition of high source credibility regardless of the adequacy of the message:

H,H or H,L > L,H or L,L

This stipulates that either conditions H,H or H,L will elicit a greater amount of opinion change than either L,H or L,L.

At the end of the experimental period, the control group should demonstrate no change from the data taken at the beginning of the period; they will not have had any training in argumentation or debate. Thus, for the control group at the end of the entire experimental period a second hypothesis is asserted:

H_2: The degree of opinion change will be greater in the condition of high source credibility regardless of the adequacy of the message:

H,H or H,L > L,H or L,L

The third hypothesis involves the experimental group after a course in argumentation. Since the Ss have received the formal training in argumentation, one would expect a finer degree of dis-

crimination not only between the sources but also between messages adequately and inadequately reasoned, evidenced, analyzed and organized. One might expect that once the Ss have evaluated the source and message independently, the adequate message, even though accompanied by a low source, would elicit greater opinion change than an inadequate message accompanied by a high source. In other words, the students should not be persuaded by an inadequate message just because of the qualifications of the speaker. Such an hypothesis is that, among the experimental group:

H_3: After a course in argumentation, the degree of opinion change will be greater in the condition of H,H than L,H; L,H will be greater than H,L; H,L will be greater than L,L:

$$H,H > L,H > H,L > L,L$$

Significance of the Study

If a course in argumentation develops the students' evaluative abilities and gives them expanded criteria for evaluating persuasive communications, a more rational basis for critical decision making will have been achieved. If the attainment of such abilities can be empirically supported, then social utility may be claimed for the study of argumentation.

If the study of the logical requirements of proof for a conclusion affects students' responses to certain persuasive communications, then an interesting and significant finding in social science research will be supported. When human behavior can be altered by the study of a certain set of principles, then perhaps we will have found

that rational decision making can be taught: a concern expressed by Bettinghaus earlier in this Chapter.

Structure of the Study

The remainder of this report will be divided as follows:

CHAPTER II (PROCEDURES)

CHAPTER III (RESULTS)

CHAPTER IV (INTERPRETATIONS AND CONCLUSIONS)

CHAPTER II

PROCEDURES

Introduction

The purpose of this chapter is to explain the logistics of the study and the materials used to gather and analyze the data. It describes the subjects, discusses the formation of the instruments, explains the method of data collection, and indicates what statistical procedures were used in the design of the research.

Subjects

Two groups of Michigan State University students participated in the present study during fall term, 1968. The control group subjects were enrolled in Business Law and Office Administration (BOA) 326, entitled Business Letter Writing. The experimental group subjects were enrolled in Communication (COM) 309, entitled Principles of Argumentation.

Ss' questionnaire responses indicated that five control group Ss and four experimental group Ss had previous experience in argumentation or debate in college. These nine Ss were excluded from the data analyses.

At the beginning of the experimental period (T_1), 71 control group Ss and 54 experimental group Ss were included in the research.

At the end of the experimental period (T_2), 68 control group Ss and 53 experimental group Ss participated in the study. Some Ss were absent during T_1 but present during T_2 and vice versa. To be included in the data analyses, a S must have completed the pre- and post-tests at T_1 and/or T_2.

Instruments

To test the hypotheses stated in Chapter I, three instruments were required: 'adequate' and 'inadequate' messages, high and low source credibility introductions for the messages, and opinion scales related to the messages.

'Adequate' and 'inadequate' messages were constructed for each of four topics. The four topics concerned cancer research, civil defense, Paul von Hindenburg, and the parity price support system in agriculture. The conclusions drawn for both 'adequate' and 'inadequate' messages on each topic were the same. Hence, both an 'adequate' and 'inadequate' message advocated more time and money for cancer research; an 'adequate' and 'inadequate' message supported an expanded civil defense program; another two speeches described Hindenburg in negative terms; and two messages spoke in favor of eliminating the parity price support system.

Three of the eight messages were adapted from Jenks' doctoral dissertation (1965); in part, his study replicated the persuasibility research done by Janis and Field (1959). Jenks used the same ten speeches on five topics that were used by Janis and Field. The three

topics used in the present study concerned civil defense, cancer research, and Paul von Hindenburg. Messages were constructed so that each of the three topics had both an 'adequate' and 'inadequate' presentation. The fourth topic and an abbreviated message were taken from Andersen's doctoral dissertation (1961). Again, another message was constructed so that this fourth topic had both an 'adequate' and 'inadequate' message. The choice of the topics and nature of the various adaptations of the messages taken from other sources are explained in Appendix A (Pre-test Material).

A panel of judges was asked to evaluate the eight messages to determine if the messages were 'adequately' or 'inadequately' reasoned, evidenced, analyzed and organized. It should be noted that eight messages were constructed or selected with these four criteria serving as a framework. These particular criteria were used because of their stated relevance to the evaluation of argumentative discourse. For instance, see Mills (1968) Chapters 5, 7, 8 and 13. Freeley (1966) Chapters 4, 6, 7 and 8, and Ehninger and Brockriede (1963) Chapters 8, 9, 10 and 14. Analysis, reasoning, evidence and organization are also included on the American Forensic Associations' Debate Ballot, Form C (Freeley, 1966, p. 317). This ballot is used to evaluate intercollegiate debating by persons who function as experts in applied argumentation, i.e. the debate coaches and judges. These same criteria are also often used in the classroom to evaluate student performance.

Six former debate coaches and judges were selected as panel members on the assumption that debate coaches and judges are experts in applied argumentation. At the time, the six persons were pursuing doctoral degrees in communication at Michigan State University.[3]

The panel was asked to assume the position of an unbiased critic-judge of argumentation and rate the speeches from 1 (low) to 5 (high) on evidence, reasoning, analysis, and organization. The results indiated that the four 'adequate' messages were rated higher on all four traits than the four 'inadequate' messages. Tables 1, 2, 3 and 4 summarize the rating results. These tables also list the combined rater reliability and the mean reliability for one rater for each of four traits. These estimations of the reliability of ratings were derived from Ebel's formulae (Guilford, 1954, p. 395).

The panel was also asked to sort the eight messages into two categories: high or low adequacy. Table 5 summarizes the sorting results. This sorting procedure was used as a check to see whether the eight messages could be classified as 'adequate' or 'inadequate.' Since six judges were asked to sort eight messages, a total of 48 judgments were made. Of these 48, five judgments disagreed with the intended classification of the messages. Of these five, three dis-

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[3]The panel included John Winterton, Sam Mehrley, Karen Seelhoff, Bette Blackburn, Wayland Cummings and Jack Baseheart.

crepancies occurred on the same message. This speech, the 'adequate' message on cancer research, was altered; some information was rearranged, another source was added, and the summary was edited. In informal discussions with some members of the panel, this revised message was perceived 'adequate.' The judges also indicated that the three sorting discrepancies possibly occurred since the speech was the first message to be evaluated in the packet of eight. They suggested that they might have been more critical with the first speech.

Table 1. Mean Ratings on Evidence and Rater Reliability

	Message:	
Topic:*	Adequate	Inadequate
1	3.50	1.67
2	4.33	1.17
3	4.50	1.00
4	4.00	1.33

Combined Rater Reliability: .975
Mean Reliability for One Rater: .868

*Topic 1 is Cancer Research; Topic 2 is Hindenburg; Topic 3 is Civil Defense; Topic 4 is Price Parity.

Table 2. Mean Ratings on Reasoning and Rater Reliability

Topic:	Message: Adequate	Inadequate
1	3.00	1.83
2	4.00	1.50
3	4.33	1.83
4	3.50	1.67

Combined Rater Reliability: .902
Mean Reliability for One Rater: .606

Table 3. Mean Ratings on Organization and Rater Reliability

Topic:	Message: Adequate	Inadequate
1	2.83	2.50
2	4.33	2.33
3	4.67	2.67
4	3.67	2.33

Combined Rater Reliability: .879
Mean Reliability for One Rater: .547

Table 4. Mean Ratings on Analysis and Rater Reliability

Topic:	Message: Adequate	Inadequate
1	2.67	1.83
2	3.67	1.67
3	4.17	2.00
4	3.67	1.83

Combined Rater Reliability: .954
Mean Reliability for One Rater: .778

Table 5. Sorting Results on the Eight Messages

	Number of Judges Sorting the Message as: High	Low
Topic 1		
Adequate	3	3*
Inadequate	1	5
Topic 2		
Adequate	6	0
Inadequate	0	6
Topic 3		
Adequate	5	1
Inadequate	0	6
Topic 4		
Adequate	6	0
Inadequate	0	6

*Since the original judges were again questioned after the message was altered and agreed that the message was high, it was assumed that the ratio became 6 high to 0 low for the revised message.

Introductions were written for the eight messages to that source credibility could be varied. Mills' (1968) criteria were used in the development of the introductions. To determine whether the introductions would be perceived as high or low by the research population, a group of students was asked to read the introductions and rate them as either high, medium or low in source credibility. The evaluators were students enrolled in COM 101, entitled Principles of Public Speaking. During the first two days of class, they were asked to read each of eight introductions and evaluate each person's acceptability as a source. They were asked to consider this issue in relation to Mills' criteria for sources: whether the person is impartial about his topic, his mental qualifications (e.g. education), whether he has had an opportunity to observe what he is commenting upon, whether he is an expert in the field, whether he has a possible source of bias, and whether he has the credentials (e.g. experience, trustworthiness) (pp. 156-160). The results for the first of three pre-tests are listed in Table 6.

Table 6. Students' Ratings of the Eight Introductions

	Ratings: High	Medium	Low	No Response
Topic:				
1				
High	36	3	0	
Low	0	1	38	
2				
High	19	17	2	1
Low	2	19	18	
3				
High	27	11	1	
Low	2	1	36	
4				
High	36	3	0	
Low	1	4	33	1

Since three of the introductions were not clearly rated as high or low, they were rewritten and given to another group of students in COM 101. The results of this second pre-test are listed in Table 7.

Table 7. Students' Ratings of Three Introductions

	Ratings: High	Medium	Low
Topic:			
2			
High	19	5	0
Low	1	2	21
3			
High	13	10	1

Since one introduction was still in doubt, it was listed with another introduction and given to a third group of students in COM 101. Since a high, medium and low rating scale was used and since three introductions were listed, it was speculated that the students might have suspected they were being given an introduction for each category. Threfore, this third pre-test was administered without any alteration to the dubious introduction. The results are listed in Table 8.

Table 8. Students' Ratings of Two Introductions

Topic:	Ratings: High	Medium	Low
2 Low	0	3	15
3 High	13	4	1

This concludes the discussion of the formation of the independent variables.

Four 3-item opinion scales were used to measure the dependent variable. Since three topics and adapted forms of three messages were obtained from Jenks' doctoral dissertation, nine of the twelve items were a part of a larger scale on five topics that Jenks used in this replication of Janis' and Field's persuasibility study. Jenks used the same pro and con messages on each of five topics that Janis

and Field used. Jenks modified some of the fifteen scales to measure the responses on the pro messages and the same fifteen scales to measure the con messages' responses. His thirty item scale yielded a split-half correlation of .51 (p. 67). A factor analysis led Jenks to state:

> In general it can then be assumed that the persuasibility scale seems to be operating on specific, topic-bound predispositions and if a general persuasibility factor is operating it is not a very potent factor in this instance (p. 81).

This finding suggested that summing item responses across topics was inappropriate since the scales appeared to be topic-bound rather than representing one general factor.

Three other items were used on the topic of parity price supports. These were adapted to Andersen's topic and abbreviated message. To make the items resemble the other nine items, some of Jenks' item options were used.

The four 3-item scales were used to measure the pre-treatment opinions on the topics. After the treatments were administered, the Ss responded to the same four 3-item scales. Change scores were used as the dependent variable to control for pre-treatment opinion differences among Ss.

Appendix A contains the pre-testing material on the messages and introductions. Appendix B includes the four 3-item scales and the oral instructions to the Ss.

From the eight speeches and eight introductions about four topics, four treatments were constructed. A treatement consisted of

four speeches and their introductions about four topics. It may be recalled that Hovland and Weiss (1951) used a similar format. In the present study, any given speech could be either adequate or inadequate (H or L) and any given introduction could be either high or low source credibility (H or L). Hovland and Weiss also used eight messages and eight sources on four topics. A major departure in this study was the use of varying message adequacy as an independent variable rather than using pro and con messages for control purposes as Hovland and Weiss did. In the present research, two topics spoke in favor of an issue and two advocated a negative position. This yielded a pro and con unit when all four treatments (H,H, H,L, L,H and L,L) are considered together. The treatments used in this research are illustrated in Figure 1.

Treatment Source/Message	Topic 1	2	3	4
1	H,H	H,L	L,H	L,L
2	H.L	H,H	L,L	L,H
3	L,H	L,L	H,H	H,L
4	L,L	L,H	H,L	H,H

Figure 1. Source and Message Combinations in the Treatments

Each speech with its introduction was recorded on a tape recorder. Live speakers were not used because live performances usually vary from situation to situation; and several people would have been

necessary to produce the 16 messages and 16 introductions simultaneously. Tape recordings eliminated these two disadvantages. The voices used were those of male graduate students who had not taught classes at Michigan State University. These persons were used to obtain voices that the research population would not recognize. This assumed minimum contact between these particular graduate students and the general undergraduate population.

The treatments administered at T_1 did not vary the order of the topics, i.e. topic 1 came first on all four tapes. However, this oversight was noted and the order of topic presentation was varied at T_2; for example, topic 1 was first on one tape, second on another, third on another tape, and fourth on the last tape.

Data Collection Procedures

The experimental period began at the beginning of fall term, 1968, (T_1), and terminated at the end of the fall term, 1968, (T_2). Data were collected during T_1 and T_2 from the control group and the experimental group. The same data collection procedures were used during T_1 and T_2 for both experimental and control groups.

During the first and second days of class, both groups completed the questionnaire and the four 3-item opinion scales. Data were collected during this two-day period to obtain responses from those students who were absent during the first class period. During the third class period, October 3, 1968, both groups were divided into four subgroups. The assignment to subgroups was random. Each of the four subgroups (within the control group and the experimental group) was randomly assigned to one of four treatments.

Four graduate students in communication were asked to administer the experiment. They were asked to read or deliver extemporaneously the oral instructions to the Ss, play each of the messages and instruct the Ss to fill out the corresponding 3-item scales after the Ss heard each treatment (H,H, H,L, etc.).

The logistical procedure for collecting the data for T_1 is represented in Figure 2.

Treatment Source/Message	Topic 1	2	3	4
1	H,H	H,L	L,H	L,L
2	H,L	H,H	L,L	L,H
3	L,H	L,L	H,H	H,L
4	L,L	L,H	H,L	H,H

Figure 2. Source and Message Combinations for T_1

During T_2 the data collection procedures were the same as T_1. However, to obtain measures free from topic contamination, the treatments were reversed. This meant that no S heard any introduction or any message more than once. The logistical procedure for data collection at T_2 is illustrated in Figure 3.

Treatment Source/Message	Topic 1	2	3	4
1	L,L	L,H	H,L	H,H
2	L,H	L,L	H,H	H,L
3	H,L	H,H	L,L	L,H
4	H,H	H,L	L,H	L,L

Figure 3. Source and Message Combinations for T_2

Statistical Design

Since each treatment group had a different combination of the variables (message adequacy and source credibility) for any given topic, the differences generated by a treatment could be assumed to be independent rather than correlated measures.

Separate analyses were done on each of the four topics. The rationale used in the present study rests on the following three reasons. First, the scales appeared to be topic-bound (Jenks, 1965, p. 81). Hence, summing across at least four apparent factors seemed inappropriate. Second, a S's total possible score could vary from topic to topic; some scale items had five options and other items had seven options. For example, the total possible score on the three Civil Defense items is 19, however, the total possible score on the three Hindenburg items is 21. Third, Bartlett's test for homogeneity of variance on the dependent variable on each of the four topics

indicated that two of the four topic analyses yielded heterogeneous variances. Thus, the within group variance of a combined analysis would be unnecessarily inflated.

Since topical analyses of the data were necessary (one for each of the four topics) this study should be considered as a series of replications. It should be noted that the research of Hovland and Weiss (1951) and Greenberg and Tannenbaum (1961) is considered a series of replications.

Given that A represents the factor control or experimental group, that B represents high or low source credibility, that C represents high or low message, then the design for any topic can be illustrated in Figure 4.

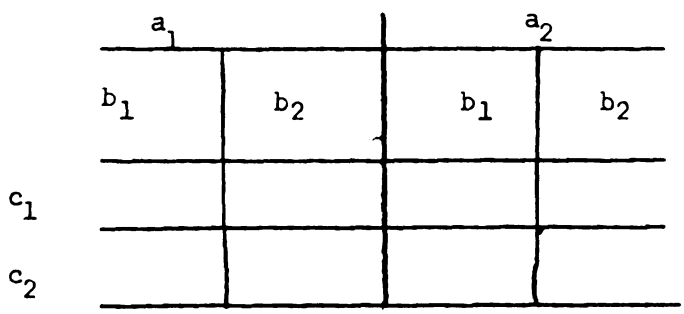

Figure 4. Design used at T_1 and as a Preliminary Analysis at T_2

The design represented in Figure 4 was used at T_1 as well as preliminary analysis at T_2. The rationale and the procedures involved in this action are discussed in the following segment.

Two different theoretical hypotheses apply to the research population: H_2 posits a high credibility effect for the control group and H_3 asserts a rank ordering of the treatment conditions for the experimental group based on the applicability of message adequacy to opinion change. To confirm H_2 via the results of a three-way analysis of variance, a credibility main effect should occur; to confirm H_3, a first or second-order interaction should result. In other words, a relationship among the four cells in the control group is hypothesized; the relationship among the four cells in the experimental group is stipulated. However, the relationship among these two sets of four cells is not posited beyond a detectable difference due to some effect of the group variable. While it seems reasonable to test the two hypotheses at T_2 separately, the differences between the control and experimental groups would not be compared statistically. In order to bridge this gap between the hypotheses and the design, the analyses of data will proceed according to the following plan.

Before the theoretical hypotheses at T_2 can be supported, some significant differences due to the group variable needs to be realized. Ideally, this difference should reveal itself in a second-order interaction. If an ABC interaction does occur, then some difference exists between the two groups with respect to experimental manipulations. To test hypotheses two and three, a significant interaction needs to appear, and then the two groups can be analyzed separately. Different two-way analyses could be done on each topic in each group

where the preliminary results indicate a group difference. Thus, four three-way designs provide a basis to determine whether any differences could be attributed to the group variable. When such differences occur, the group can be split in order to specifically test the second and third hypotheses.

Where interactions do not occur, 2 x 2 analyses of variance could reflect trends in the data. Therefore, all of the T_2 data will be analyzed in terms of: (1) a preliminary three-way analysis of variance with the group factor a main effect, and (2) separate two-way analyses of variance of data from both the experimental and control groups.

The normally applied parametric analysis of variance will not be used to analyze the data because the cell sizes were small and because the data could not meet two parametric assumptions. First, the measuring instrument appeared to yield ordinal rather than interval data. Second, the homogeneity of variance assumption was violated. While a parametric analysis of variance is fairly insensitive to departures from the homogeneity assumption, Kerlinger (1966) suggested that, "there is one case that is particularly difficult to resolve, however: when variances are heterogeneous and the sample sizes of experimental groups differ (p. 259)." The most appropriate solution seems to be a distribution-free test of analysis of variance. Such a solution was used in this study by analyzing the data in terms of the non-parametric analysis of variance developed by Wilson (1956).

Summary

This chapter described the Ss who participated in the research, discussed the formation of the instruments used, explained the data collection procedures for T_1 and T_2, and discussed the design of the study.

CHAPTER III

RESULTS

Introduction

The purpose of this chapter is to report the results of the various analyses employed in the study in light of the assumptions and hypotheses discussed in Chapters I and II. The statistical manipulations include tests on the pre-treatment opinion scores at T_1 and T_2, and non-parametric analyses of variance on the opinion scores at T_1 and T_2.

Analyses of Pre-Treatment Opinion Measures

Two statistical tests of pre-treatment opinion measures were made. First, the pre-treatment opinion socres of the control and experimental groups were compared on each of four topics at T_1. These four analyses provided a basis for determining whether or not there were any significant differences between the control and experimental pre-treatment opinion socres on any of the four topics. Since the design of the study required the use of two intact groups, it was important to determine if pre-treatment opinions between the two groups differed. Since subsequent statistical tests assumed comparable groups and since the use of two intact groups prohitibed the usual procedure of random S assignment to groups, the tests served as a check of this

assumption. Failure to achieve statistically significant results would indicate that comparable groups had been achieved.

Second, the pre-treatment opinion scores of both control and experimental groups were compared at T_1 and T_2. These tests were necessary to determine if any intervening variables influenced the Ss' opinion socres between data collection sessions. Such intervening variables could have included some form of national, state or local attention to any of the four topics; such exposure could have influenced the Ss' opinion scores. These tests also served to detect any lingering effects from the first treatment.

Two-way non-parametric analyses of variance were used to test the pre-treatment opinion scores. Given that factor A represents the control and experimental groups and that factor B represents T_1 and T_2, Table 9 lists the results of four two-way analyses on all four topics.

Table 9. Analyses of Variance of the Control and Experimental Groups' Pre-treatment Opinion Socres on Four Topics at T_1 and T_2

Topic	Variable	df	χ^2	Level of Significance	Significant
1					
	A	1	2.3457	.1256	-
	B	1	3.0736	.0796	-
	AB	1	.2106	.6463	-
2					
	A	1	.3971	.5286	-
	B	1	1.8034	.1793	-
	AB	1	.5368	.4638	-
3					
	A	1	1.4636	.2263	-
	B	1	.5866	.4437	-
	AB	1	.0000	1.0000	-
4					
	A	1	.0171	.8959	-
	B	1	1.5030	.2202	-
	AB	1	.4161	.5189	-

The results indicate that on all four topics, the control and experimental groups did not significantly differ at T_1 or at T_2 on the pre-treatment opinion scores. The analyses also indicate that no intervening variable systematically influenced the Ss' responses to the four topics between data collection sessions.

Analyses of Data Relating to Hypothesis One

This section gives the results of four non-parametric analyses of variance in terms of the first hypothesis. Where the analysis confirms

the theoretical hypothesis, the cell means are used to illustrate the results.[4] When the hypothesis is not confirmed, the cell means are observed to obtain any trends in the data.

Four three-way non-parametric analyses of variance were done to test the null hypothesis of H_1. The null hypothesis for the control and experimental groups was:

> H_o: There is no significant difference in the degree of opinion change between the condition of high source credibility and low source credibility regardless of the adequacy of the message:
>
> H,H or H,L = L,H or L,L

The results of the analyses are listed in Table 10 for each topic. In each instance, factor A represents control or experimental group, factor B represents high or low source credibility, and factor C represents high or low message. The null hypothesis could be rejected if the B main effect were significant.

Significant results. It will be noted that the null hypothesis can be rejected for topic four only. The data for topic four listed in Table 10 indicate a credibility effect at the .0138 level of significance. To illustrate this hypothesized effect, the means were

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[4]It was noted in Chapter II that the dependent variable constituted ordinal data. Though means are appropriate for interval data, the means are used rather than the medians; the medians frequently give little information. For instance, the four medians for the control group on topic three are all zero. The medians for the control group on topic two are three zeros and one two; this presents three ties when the four treatments are ranked. Hence, for illustrative purposes, the medians are not very informative. To gain more information, the means are used as illustrative material only and never as a part of any statistical tests. The means are used to rank the treatment conditions only.

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calculated for each treatment: H,H, H,L, L,H, and L,L. These means are listed in Table 11.

Table 10. Analyses of Variance of Four Topics at T_1

Topic	Variable	df	χ^2	Level of Significance	Significant
1					
	A	1	.5445	.4606	-
	B	1	.1688	.6812	-
	C	1	.3659	.5452	-
	AB	1	.0176	.8944	-
	AC	1	.5341	.4649	-
	BC	1	1.1486	.2838	-
	ABC	1	2.3845	.1225	-
2					
	A	1	.3779	.5387	-
	B	1	2.2859	.1306	-
	C	1	.3437	.5577	-
	AB	1	.2456	.6202	-
	AC	1	.8811	.3479	-
	BC	1	.5626	.4532	-
	ABC	1	2.1362	.439	-
3					
	A	1	.1740	.6766	-
	B	1	.3592	.5490	-
	C	1	2.7573	.0968	-
	AB	1	.1972	.6570	-
	AC	1	.2013	.6537	-
	BC	1	.5327	.4655	-
	ABC	1	1.2369	.2661	-
4					
	A	1	.5412	.4619	-
	B	1	6.0650	.0138	*
	C	1	.1173	.7320	-
	AB	1	3.6580	.0558	-
	AC	1	.0176	.8945	-
	BC	1	1.1249	.2889	-
	ABC	1	4.8372	.0279	*

Table 11. Cell Means of the Change Scores at T_1 for the Control and Experimental Groups on Topic Four

Treatment	Control Group	Experimental Group
H,H	.8000	.6667
H,L	1.2105	2.1333
L,H	.8889	.0000
L,L	-.1579	-.4286

The hypothesized effect for topic four is clearly illustrated by the cell means in the experimental group: H,L and H,H are both larger than L,H and L,L. In the control group, H,L is greater than L,H and L,L.

Trends. Since the null hypothesis was not rejected on the other three topics, the means were observed to look for trends in the data. The cell means for topics one, two and three are listed in Table 12. Though most of the differences are slight, in four instances of six, H,H or H,L was ranked first. Specifically, the control group ranked H,L first twice; the experimental group ranked H,L first one time and H,H first once. These rankings of treatment cells according to their respective means give some support to the first hypothesis, that, a high source with a high or low message is greater than a low source with a high or low message. Another trend in the data seems to be toward a low message effect. Again, in four of six cases, a low message is ranked first regardless of the source. This trend was not

hypothesized; hence, discussion of it will be deferred to Chapter IV (Interpretations and Conclusions).

Table 12. Cell Means of the Change Scores at T_1 for the Control and Experimental Groups on Three Topics

Topic	Treatment	Control Group	Experimental Group
1			
	H,H	.6316	.8000
	H,L	1.0000	1.2500
	L,H	.5263	1.5714
	L,L	.8889	.4615
2			
	H,H	-.1111	3.4615
	H,L	1.8947	1.5715
	L,H	.4667	.1667
	L,L	.9474	.5333
3			
	H,H	-.3684	-.4286
	H,L	.4444	.8461
	L,H	-.5263	-.7333
	L,L	.4667	.7500

Thus, the first hypothesis is supported for topic four but not on the other three topics. Though statistically not significant, there appears to be a trend toward a high credibility effect in topics one, two and three.

It will be noted that Table 10 indicates an ABC interaction for topic four. Since this was not hypothesized and is uninterpretable in terms of the first hypothesis, discussion of this finding will be deferred to Chapter IV.

Preliminary Analyses of Data Relating to Hypotheses Two and Three

Before proceeding to the actual testing of the two remaining hypotheses, the preliminary analyses explained in Chapter II were done to see if any differences existed among the groups with respect to the source and message manipulations. Table 13 lists the results of four three-way non-parametric analyses of variance. Factor A represents control or experimental group, factor B represents high or low source credibility and factor C represents high or low message adequacy.

Significant results. Table 13 indicates that two topics obtained significant results. There were significant ABC and AC interactions on topic two; these indicated a difference in the group responses to the source and message dimensions. Topic three indicated a significant second-order interaction. Thus, on the bases of the previous discussion, the control and experimental groups could be split and two-way analyses of variance could be done. Table 13 also indicates that topic two gained significant B and C main effects. Since both sets of four cells (one set of four cells attributed to the control and the other to the experimental group) were included in the three-way analysis and since a different hypothesis applied to each group, it was virtually impossible to ascertain whether one group or both groups contributed to these results. This thereby precluded any conclusion about H_2. In other words, since both groups could have contributed to these main effects

and since a B main effect was hypothesized for only one group, this three-way analysis of variance did not provide a direct test of H_2. Thus, these main effects are noted but their value as a basis for a conclusion about the hypotheses is dubious.

Table 13. Analyses of Variance on Four Topics at T_2

Topic	Variable	df	χ^2	Level of Significance	Significant
1					
	A	1	.0825	.7739	-
	B	1	.6947	.4046	-
	C	1	.5674	.4513	-
	AB	1	.8730	.3501	-
	AC	1	.0000	1.0000	-
	BC	1	.1814	.6702	-
	ABC	1	2.5045	.1135	-
2					
	A	1	1.0421	.3073	-
	B	1	3.9865	.0459	*
	C	1	3.8459	.0499	*
	AB	1	3.1438	.0762	-
	AC	1	4.3041	.0380	*
	BC	1	1.6541	.1984	-
	ABC	1	9.4897	.0021	*
3					
	A	1	.3649	.5458	-
	B	1	3.0213	.0822	-
	C	1	.1378	.7104	-
	AB	1	.5591	.4546	-
	AC	1	1.6384	.2005	-
	BC	1	1.9181	.1661	-
	ABC	1	4.4800	.0343	*
4					
	A	1	.0903	.7637	-
	B	1	.2357	.6237	-
	C	1	2.4304	.1190	-
	AB	1	.0575	.8104	-
	AC	1	.1833	.6685	-
	BC	1	1.9735	.1601	-
	ABC	1	3.4183	.0645	-

Non-significant results. Table 13 indicates that topics one and four did not yield statistically significant results. However, the same two-way analyses were performed on the data in an effort to obtain any trends.

Analyses of Data Relating to Hypothesis Two

Four two-way non-parametric analyses of variance tested the second hypothesis. H_2 applies to the control group at T_2. For the control group, the null hypothesis was:

> H_o: There is no significant difference in the degree of opinion change between the condition of high source credibility and low source credibility regardless of the adequacy of the message:
>
> H,H or H,L = L,H or L,L

Table 14 contains the results for each topic. Variable A represents source credibility and variable B represents message adequacy.

Non-significant results. The results of these four two-way analyses indicate that in no case can the null hypothesis be rejected. To reject the null hypothesis, a significant main effect on variable A needed to occur.

Table 14. Analyses of Variance on Four Topics at T_2 on the Control Group Change Scores

Topic	Variable	df	χ^2	Level of Significance	Significant
1					
	A	1	1.6168	.2035	-
	B	1	.3533	.5522	-
	AB	1	.0931	.7602	-
2					
	A	1	.344	.7139	-
	B	1	.0770	.7814	-
	AB	1	.1040	.7471	-
3					
	A	1	3.3597	.0668	-
	B	1	.4489	.5029	-
	AB	1	1.9701	.1604	-
4					
	A	1	.3650	.5456	-
	B	1	2.2608	.1327	-
	AB	1	.0298	.8630	-

Trends. Since H_2 was not confirmed, the means were calculated to find any trends in the data. These means are listed in Table 15.

Table 15. Cell Means of the Change Scores at T_2 for the Control Group on Four Topics.

	Topic			
Treatment	1	2	3	4
H,H	.3529	.2778	.6875	.3529
H,L	.7647	.8750	.0556	1.5882
L,H	.0000	.4118	-.1176	.0556
L,L	.1111	.0000	.5294	.6875

In all four cases, H,H or H,L was ranked first when the treatments are arranged according to their respective means. This indicates a slight trend toward a credibility effect. However, another trend is noted. Again, a low message with a high or low source is ranked first three of four times. This low message effect was not hypothesized and discussion will be deferred to Chapter IV.

This moderate credibility effect did not seem to change from T_1 to T_2. The control group ranked H,L first three times at T_1 and three times at T_2; they added H,H to a first ranking at T_2. The low message effect appearing at T_1 evidently continued through T_2. A low message received a first ranking at T_1 four times of four; at T_2 this happened three times. Further discussion of this finding will be deferred to Chapter IV.

Analyses of Data Relating to Hypothesis Three

Four two-way non-parametric analyses of variance tested the third hypothesis. H_3 applies to the experimental group at T_2. For the experimental group, the null hypothesis was:

> H_o: After a course in argumentation, there is no significant difference in the degree of opinion change in the conditions of H,H, H,L, L,H or L,L:
>
> $$H,H = L,H = H,L = L,L$$

The results of the statistical tests are listed in Table 16 for each topic. It should be noted that these analyses were warranted for topics two and three on the bases of the previous statistical manipulations reported earlier in this Chapter.

Table 16. Analyses of Variance on Four Topics at T_2 on the Experimental Group Change Scores

Topic	Variable	df	χ^2	Level of Significance	Significant
1					
	A	1	.1516	.6970	-
	B	1	.3514	.5533	-
	AB	1	1.2871	.2566	-
2					
	A	1	7.8044	.0052	*
	B	1	8.9851	.0027	*
	AB	1	1.9240	.1654	-
3					
	A	1	.4273	.5133	-
	B	1	1.4184	.2337	-
	AB	1	.1984	.6560	-
4					
	A	1	.0916	.7622	-
	B	1	.5051	.4773	-
	AB	1	2.8583	.0909	-

Non-significant results. The null hypothesis cannot be rejected for the four topics. Two significant main effects occurred on topic two. A credibility effect was significant at .0052 and a message main effect was significant at .0027. To illustrate these effects, the means were calculated and are listed in Table 17 for topic two.

Table 17. Cell Means of the Change Scores at T_2 for the Experimental Group on Topic Two

Treatment	Means
H,H	1.1428
H,L	.7857
L,H	-1.5714
L,L	.7272

The treatments H,H and H,L are greater than L,H and L,L. This illustrates a high credibility effect. Treatments H,L and L,L are greater than L,H; this seems to indicate that much of this low message effect derives from the relatively large negative response to L,H.

Trends. The means for the other three topics were calculated to observe any possible trends. These means are listed in Table 18.

Table 18. Cell Means of the Change Scores at T_2 for the Experimental Group on Three Topics

	Topic		
Treatment	1	3	4
H,H	1.0909	-.4286	1.5000
H,L	.1428	1.4286	.3636
L,H	.1428	-.4545	-.4286
L,L	.3571	.0000	1.2857

In two of three cases, H,H was ranked first. This appears to be the only consistent supportive trend in the data. The rankings appear to be mixed and in most cases uninterpretable in terms of the theoretical hypothesis. The rankings do not seem to have any distinct pattern on topics one, three and four. Where significant results were obtained on topic two, the main effects do not support the third hypothesis; there is a high credibility effect and a low message effect. It should be recalled that in order to confirm the hypothesis, a

significant interaction must have occurred which would allow a specific ordering of the treatments.

These moderate effects did not appear to change from T_1 to T_2. At the beginning of the experimental period, the experimental group ranked the treatments with a high credible source first three times of four; they ranked a treatment with a high credible source first four times at the end of the experimental period. At T_1, this group gave a first ranking to low message treatments twice; at T_2 this occurred once.

Summary

The first hypothesis was supported on topic two. Though the results from the other three topics were not statistically significant, the data show a trend in the posited direction.

The second hypothesis was not statistically supported. However, the data express a moderate trend toward the hypothesized direction.

The third hypothesis was not confirmed. The data suggest trends that are not in the posited direction. Discussions of this phenomenon and other results are deferred to Chapter IV.

CHAPTER IV

INTERPRETATIONS AND CONCLUSIONS

Introduction

In a research effort such as the one reported in this study, the researcher has at least two alternatives available when results do not directly support the stated theoretical rationale. These include rejection of the hypotheses or looking to the research itself for explanation. Before such a decision is reached, a review of this research should be conducted. An attempt will be made to report the possible contributing factors to the absence of statistically significant results and to the unexpected phenomenon mentioned in Chapter III.

Discussion of Results Contrary to the Hypotheses

Perhaps the most likely reason for the lack of statistical support for the hypotheses originated in the scale items. Guilford (1954) suggests at least two kinds of reliability in considering scale items: internal consistency and stability (pp. 373-374). Internal consistency refers to the extent to which scale items tap the same trait or factor. Stability indicates the extent to which scale items consistently classify Ss at two different points in time. The data

generated from the present study were analyzed to suggest the scale items' internal consistency and stability. It should be noted that these concerns could not be determined prior to the experiment since nine items had been used as a part of a larger scale and since three items were used for the first time.

Data from both groups prior to the experimental manipulations at T_1 were used in a check for internal consistency. Ideally, the three scale items relevant to each of four topics would each yield four topical factors, e.g. the three items relating to civil defense would tap the same trait, the three items relevant to cancer research would tap a factor concerning that particular topic, etc. The analyses for each set of four 3-item scales involved an item by total minus item correlation. This means that each item in a set is correlated with the total score of the three items. The value of that particular item is then subtracted. This is done because the item's correlation with the total score would tend to inflate the sum since the item itself is a part of the total. If each set of three items generates relatively high correlations, it is assumed that the items in a set generally tap the same dimension along with a certain amount of error. The results of this analysis for each set of 3-item scales are listed in Table 19.

Table 19. Item by Total minus Item Correlations of each Set of Three-Scale Items on the Pre-treatment Opinion Scores at T_1 for the Research Groups

	Item Sets for Topic:			
	1	2	3	4
Item Correlations for:				
Control Group	.0605	.4711	.0755	.6813
	.3991	.5681	.3454	.5508
	.4640	.6831	.4129	.7290
Experimental Group	.0930	.1467	.3088	.3406
	.2015	.4243	.3958	.4610
	.3760	.5895	.3058	.3864

The data indicate that the dependent variable generated by the scale items was not internally consistent. Thus, rather than tapping a primary trait, the sets of items appear to be tapping a significant number of secondary factors as well. This stimulates one criticism of the scale items. Another stems from a second kind of reliability: the stability of the items.

The data used were the pre-treatment opinion scores from T_1 and T_2. Since the two-way non-parametric analysis of variance comparing the T_1 scores with the T_2 scores was not significant (see Table 9), T_1 and T_2 were considered to yield test, re-test data. Table 20 indicates the extent to which the Ss' responses at T_1 correlate with the T_2 responses. This indicates the extent to which the scales measure the same factors at different points in time.

Table 20. Correlations of Items Responded to a T_1 with T_2

Topic			
1	2	3	4
.6837	.3979	.4247	.5824
.7569	.3853	.2998	.4116
.6011	.4197	.6837	.7218

These correlations reveal the relative instability of the items. This implies that most of the items tap different factors at the two different times.

These two criticisms of the scale items could explain in part the absence of statistically significant results obtained in this study. Furthermore, the question whether the messages were capable of eliciting statistically significant results would have a bearing on the lack of the posited results. However, since three of the speeches are known to have achieved such effects when they were used as a part of a larger battery of messages (Jenks, 1965), this alternative is dubious.

In addition to the scales, another plausible explanation for the results contrary to the hypothesized effects derives from the possibility of differences between the intended and perceived experimental manipulations. The treatments H,H, H,L, L,H, L,L were operationally defined in terms of the communicators' source credibility derived from the introductions and in terms of the message. McCroskey (1968) distinguishes between initial, derived and terminal ethos. Initial ethos

"is the speaker's ethos just before he begins to speak;" derived ethos is "produced during the act of communicating;" and, terminal ethos "is the product of the interaction of initial and derived ethos (pp. 58-59)." In the present study, ethos was assumed to be determined only by the introductions used, i.e. initial ethos. Perhaps, some form of scales measuring terminal ethos should have been used as a check on the experimental manipulations. This might have indicated whether the intended credibility was consistent with terminal ethos.

This line of thought, though interesting, is speculative. McCroskey said that, "Unfortunately, experimental studies specifically concerned with derived ethos have been few in number and generally not will conceived (p. 66)." As such, this may or may not constitute a serious reason for the absence of statistically significant results in the present study.

Another speculative reason for the outcome of this research may be the amount of time spent in the classroom. During fall term, 1968, 19 class periods were allotted to the Tuesday-Thursday sections of classes. Though time may or may not be an important variable in the effect of a course in argumentation, it is also worth noting. Learning a certain amount of material in that length of time may be one problem; inculcating a different set of criteria and then using it in that amount of time may be quite a different problem. Perhaps, providing a basis of judgment or stimulating interest is necessary but not sufficient. In fact, a rationale directed toward not just classroom

instruction but also to guided, systematic practice may be needed. However, since this area has also been virtually ignored by the behavioral scientists and by the speech educators with an empirical bent, this idea must remain cloaked in speculation.

Discussion of Unexpected Phenomena

Three unexpected phenomena occurred as the results of this research. First, a second-order interaction was noted at T_1 on topic four. It will be recalled that given the three variable factorial design, factor A represents control or experimental group, factor B represents high or low source credibility, and factor C represents high or low message adequacy. The interaction may be observed in comparisons of four cells. In an attempt to locate contributors to this result, four Mann-Whitney U analyses were made between the following cells: (1) $a_1b_1c_1$ with $a_2b_2c_2$, (2) $a_1b_1c_2$ with $a_2b_2c_1$, (3) $a_1b_2c_1$ with $a_2b_1c_2$, and (4) $a_2b_1c_1$ with $a_1b_2c_2$. One test was statistically significant: cell $a_1b_1c_2$ with $a_2b_2c_1$. This suggests that a substantial amount of the interaction may be attributed to the difference between these two cells. However, the interaction is still difficult to explain. The cell mean for $a_1b_1c_2$ is 1.2105, and the mean for cell $a_2b_2c_1$ is .0000. Thus, given a high credible source and a low adequate message in the control group, and a low credible source and a high message for the experimental group, the control group responded more favorably. Since the hypothesis at T_1 stipulated a credibility

effect regardless of message, this interaction is in the asserted direction. Since topic four did not elicit significant results at T_2 thereby precluding any consistent reaction, this effect is most plausibly considered an artifact of the research.

Two other unexpected results occurred. Unlike the previous finding, however, they lend themselves to a degree of interpretation. First, a low message trend was observed in both groups at T_1. This was not hypothesized. One explanation could be that the low adequate messages were more "persuasive" than the adequate messages. The first clue for such an explanation comes from some members of the pre-test panel; two critic-judges mentioned that some of the messages (referring to the low speeches) were "rather persuasive." No action was taken on this issue prior to the experiment; if the treatment in argumentation worked as anticipated, then the experimental group theoretically would discriminate between the high and low messages and favor reasoning, analysis, evidence and organization. It was stipulated that the experimental group would have inculcated various criteria for evaluating persuasive messages. Mills (1968) indicated a similar idea:

> One who has studied the principles of argumentation for some weeks can be presumed to have some interest and competence in evaluating, criticizing, or judging advocatory discourse (p. 307).

Inherent in the evaluation and criticism of forms of advocacy are opinions about the particular subject matter, i.e. some type of opinion response. It was this sort of competence and subsequent response to various forms of advocacy that this research was aimed. However, given

that the treatment in argumentation had not yet occurred, a moderate such effect in both groups should not be too surprising. Referring to the use of emotional appeals in persuasion, Bettinghaus stated, "It does so successfully only when receivers have no other basis of judgment (p. 286)." Therefore, since a specific "basis of judgment" was projected, whatever persuasive effect contained in the messages was deemed unimportant.

Second, a low message trend was observed in the control group at T_2 and also in the experimental group, significant on topic two. The reason for the former has been discussed in the preceding paragraph: the low messages may have been more persuasive than the high messages. The explanation of the latter requires careful consideration. The discussion in the previous section was directed toward that objective.

Conclusions

The rationale of this study rests on the assumption that the acquisition of criteria occurs simulatneously with the critical application of these criteria. However, this latter process may be subsequent to the former. The data from this study cannot attempt to check this relationship. Yet the bearing of this relationship on the data cannot be overlooked. Part of this question necessarily involves differences in the individual students' abilities to grasp and then apply a formal structured basis of judgment. It should be recalled that Hovland

and Janis not only stated that "the abilities requisite for evaluating argumentation are the products of formal education" but also from "specialized training which provides guided practice in criticizing and appraising various types of discourse (p. 259)." Thus, it is clear that the results of this study should not be used to support a general allegation against argumentation courses. Previous discussion in this Chapter indicated that the results should be noted with caution due to the reasons mentioned. It should also be noted that this study concerned one specific course at a particular time and place. The research, as such, was intended as exploratory in nature. And, as most exploratory research, it has raised more questions than it has attempted to answer. Furthermore, the importance of the tacit assumption upon which this study rests should not be taken lightly. However, in keeping with the exploratory nature of this study and before rejecting the rationale for training in argumentation, the following suggestions for further study are advanced.

Suggestions for Further Study

A different set of scale items should be developed. One way to conduct such an effort would be to have debate coaches and judges read the messages, then list the issues in each one. Scale items could be constructed on the basis of the issues. Then numerous pre-tests might yield a set of scales both stable and unidimensional and perhaps more sensitive to the training aspects of argumentation.

The messages should be pre-tested not only by debate coaches and judges but also by knowledgeable teachers of persuasion. A measure for the degree of persuasiveness in the messages should be obtained. Ideally, the eight messages should receive very close ratings, thus, making them equally persuasive. The messages might also be tested for saliency to the Ss. Perhaps if topics more important to the research population were used, stronger responses would result.

The messages and scales should be pre-tested on a set of students to see whether they are capable of eliciting statistically significant results.

The possibility of the sources and messages confounding each other should be considered. Perhaps finer measures of the introductions ought to be developed to obtain 'low' introductions but not so low that the source and message would seem incongruent, i.e. unbelieveable.

Not only should the messages and scales be pre-tested to see whether they yield significant results, but another scale should be added. This scale would be directed at finding out whether the intended source credibility manipulations were consistent with the terminal perceived ethos.

Once this set of experimental manipulations is constructed, it should be run on academic debaters with varying degrees of experience and proficiency. If the amount of time spent learning the principles is a significant variable in light of the aims of this research, and if practice is a necessary ingredient in inculcating a predetermined basis of judgment, a series of studies should be done. Academic debate, as a research area, has long been ignored by the behavioral scientists.

Until these issues are resolved, the case for or against the effects of training in argumentation on student opinion change should remain highly debatable among communication researchers.

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APPENDIX A

PRE-TEST MATERIAL

Discussion

This appendix contains the pre-test material for the messages and introductions. It also contains the messages and introductions which were used to construct the treatment combinations.

The packet of instructions and eight messages distributed to the panel of critic-judges is represented on pages 64-72. Number one was revised on the basis of the panel's results. The revised form of number one is on page 73. Some material was rearranged, the summary was edited and another source was added. Messages one, three and four were borrowed from Jenks (1965). They originated in the Janis and Field persuasibility study (1959). Message number three in Jenks' study, asserted a threat by Russia. At the time of the study, three years later, it seemed more probable that Red China posed a greater threat. Thus, 'Red China' was substituted for 'Russia.' With the exception of three words, message four remains unadapted. Number six is a shorter version of a much longer speech used by Andersen (1961).

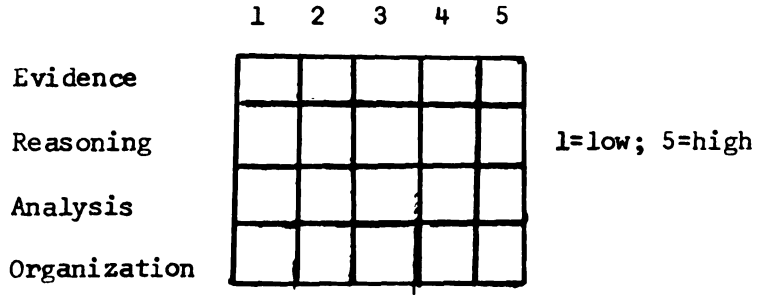
The messages and topics were selected with two objectives in mind. First, the topics had to be general in interest. For this reason, the two other topics used by Jenks (the Jack O'Keefe television show and classical music) were not used.

Second, the use of more than one but not more than four topics allowed replications and provided a means to structure the treatments so that each subgroup of Ss would hear all four treatment combinations. At least four topics were required to have each subgroup exposed to H,H, H,L, L,H and L,L.

The packet of instructions and eight introductions distributed to the first group of students for pre-test purposes is reproduced on pages 74-77. It should be recalled from Chapter II that two additional pre-tests were necessary. With the same page of instructions, page 78 lists the three introductions that required a second pre-test and page 79 lists the two introductions included in the third and last pre-test. Thus, the eight introductions used in the study are: numbers 1, 2, 5, 6 and 7 from the first set, and numbers 1, 2 and 3 from the second set. The third pre-test did not require alterations to the introductions (see Chapter II).

Part I:

This is a set of eight speeches. Assume that you are in the classroom hearing these messages, and that you are an unbiased critic-judge. Regardless of how you feel about any given topic, rate the speeches, considering the following criteria:



Part II:

Sort the eight messages into two categories, again as an objective critic-judge. The two categories are "high" and "low" adequacy. If, in your judgment, a message is adequately organized, analyzed, reasoned, and evidenced, then place it in the "high" stack. If it is not adequately organized, analyzed, reasoned and evidenced, then place it in the "low" stack. The speeches are numbered; please record your decisions below.

Number	"High"	"Low"
1	____	____
2	____	____
3	____	____
4	____	____
5	____	____
6	____	____
7	____	____
8	____	____

One

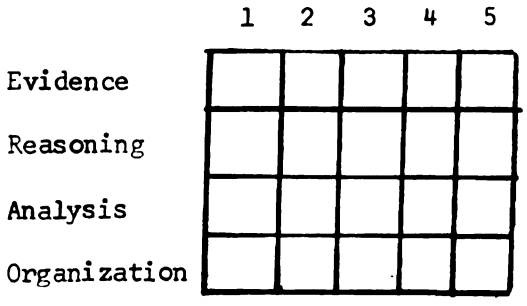
Because of recent advances, the American Cancer Society has announced that the chances of finding a cure for cancer in the next one or two years are increasingly good. Many of the Society's researchers feel that a cure for cancer can be achieved soon - but only if we concentrate money and a large number of doctors and research specialists on this problem.

First, cancer takes thousands of lives each year, yet the present allocation of funds and researchers is inadequate. In a recent report from the Department of Health Education and Welfare, the Department suggested that few people realize that at the present time only about 5% of medical research is being carried on in a research for a cure for cancer. Many cancer specialists, including Dr. Gene Hoffman, Director of Research at the Mayo Clinic, are sure that it will take only two or three years to find the cure if medical research centers in this country spend more time and money and assign more men to work on this problem. Dr. Hoffman suggests that 40 or 50% of all medical research ought to be devoted to finding a cure for cancer. Certainly 5% of the medical research is inadequate.

Moreover, it is true that this will temporarily delay work on other illnesses such as tuberculosis and heart disease. But there are already many ways to help people who are suffering from these diseases. However, the only treatments we have for cancer at the present time are surgery or radium treatments. A wellknown researcher, Dr. Glen Connelly, recently stated that there are large numbers of cancer victims every year who cannot be cured by any available treatment.

So the most effective way to reduce the suffering and deaths is to spend enough money to have an adequate research program that will concentrate on finding a cure for cancer as soon as possible.

When we finally succeed in curing cancer, we will have wiped out one of the worst killers in the world. The American Cancer Society estimates that Cancer strikes at one out of every eight Americans. And yet only 5% of the people who are qualified to do medical research are trying to find new ways to cure this deadly disease. If we want to destroy cancer within one or two years, we should have close to 50% of our medical research specialists devote themselves to combating this disease.



Two

Did you know that a large part of your tax dollar pays rich farmers to sit around and not plant anything on much of their land? Well, that's right. Ever since the roaring twenties, the farmers have taken the U.S. government for billions of dollars in payment for doing little or nothing.

The whole problem is the system of parity price supports. Congress guarantees the farmer a certain price for his crops. This started as a law passed by Congress.

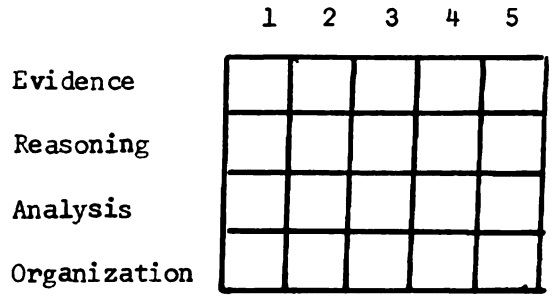
Ever since this system was established, it has been a certain disaster. In the 1950's, not only did the government pay the farmers for their crops, but they also bought in excess of what was needed. This resulted in thousands and thousands of tons of crops, rotting in storage bins. In the 1960's, the government decided this wasn't such a good idea, so it paid the farmers not to produce- to let their land lay idle. What is this but socialistic policy?

The farmers don't compete like the other segments of our economy because if they did, then the prices would go down and they would have to do like everyone else and that is get another job and work. The government doesn't pay anyone else who owns that much land to do nothing, and it doesn't guarantee a certain price for other products, just because the manufacturer wants more money for his products, or because he may overproduce he doesn't blackmail the government into paying him.

And then there's the poor farmer. The government is supposedly concerned with poor people, but this system of price supports doesn't even help the poor farmer, only the rich farmers. The reason is that the small farmer doesn't have much land so that he can't put acres and acres into idleness and get paid for it. And even when he does produce, he doesn't grow enough to get an adequate income from his crops.

The government is also supposedly concerned with halting inflation, but they also keep giving more and more to the farmers in higher guaranteed prices.

It is obviously time to object to this ridiculous system of parity price supports and make agriculture compete within its own market just like the rest of the economy. And if some of the farmers can't make it, then let them get a job like everyone else.



Three

There is a real danger facing us today. This is the possibility that China will wage atomic war on the United States. Everybody knows that China already is building up large stockpiles of atomic bombs.

There is no doubt about what these bombs can do. Just one bomb will destroy a city. Most people who live in a bombed city will be trapped, burned, and die in pain. The few people who are not killed immediately in an atomic bombing may die in a few weeks because of the invisible radiation in the air.

If a real A-bomb attack comes, the U.S. will have a great many difficulties in defending our population. It is well known that no completely effective shelters are now being built, and that millions of lives may be lost if the Chinese bomb our cities. Our radar network - which is not at all complete - cannot be sure of detecting airplanes which fly lower than 1,000 feet.

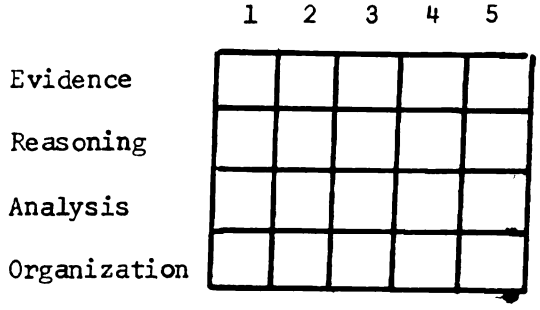
The civil defense system as it is now set up just doesn't have enough members to spot the planes that get through the radar network. There aren't even enough volunteers to function as emergency fire-fighters or rescue teams and to do the many other important things that need to be done to save lives.

There is one way that will really protect the U.S. from the danger of atomic war-fare. This calls for spending enough money to build and train an effective civil defense organization of 25,000,000 men and women.

These men and women would set up warning systems throghout the entire United States. They would build shelters in each city to which everyone can go in case of attack. This large team of civil defense workers could arrange to evacuate cities and towns that are threatened.

There is another important reason why we should build up our civil defense strength. If the Chinese realize that they can't catch us by surprise, they will be much less likely to attack us.

We won't really be prepared until we have 25 million men and women in our civil defense organization. By spending enough time and money to create a powerful civil defense team, we shall be investing in an insurance policy against disaster. It is a small price to pay for safety from atomic attack.



Four

Some Americans have been impressed by the ceremonies recently held in Germany to honor General von Hindenburg. These people just don't know what sort of man Hindenburg really was.

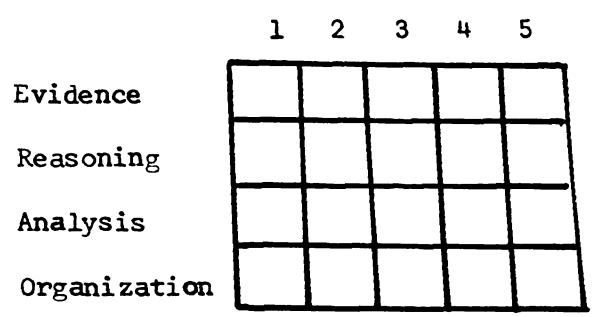
Instead of praise, I am convinced that Paul von Hindenburg should be given our strongest condemnation. His character was exactly what you would expect from his appearance. In his photographs he always appears as an arrogant, domineering, authoritarian German officer with closely shaved head, cold harsh eyes, and a typical German mustache. He was brought up to be a true German officer. He spent his life to the goose-step; the drill book was his bible.

I think it was mainly because of his ruthlessness that he was the general the Kaiser chose to be head of the German army in World War I. Some accounts of the war place the blame directly on Hindenburg for crimes and atrocities committed by the German army against civilians in Belgium and France.

Hindenburg, for all his bluster and cold-blooded brutality, was defeated in several important battles. In 1918 the Americans and their Allies defeated him for good and he was forced into retirement.

After the war was over, the old German families, who had always wanted a strong army man as a ruler, nominated him for President and helped him get elected with their money. Hindenburg was a stern ruler who loved power, and who took credit for many things which his assistants actually did. Perhaps his main accomplishment was that he built up the German army and navy, which helped Germany get ready to attack other nations.

In 1933 Hindenburg appointed Adolf Hitler to a top government position as Chancellor. This enabled Hitler to win more and more power and to make himself the real head of the German government. I believe that Hindenburg will always be remembered as a harsh general and ruler and as the man who allowed Hitler to become dictator of Germany.



Five

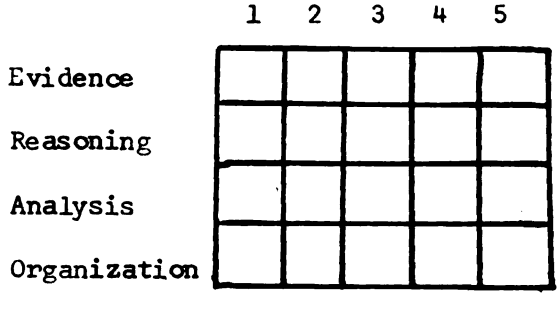
In Denver, a small child died. He suffered for months before the end came to give him rest from his misery. In Boston a man with six children died, leaving his family with only a small amount of insurance to take care of them. And, in Birmingham, a woman lay dying after several operations, and left her state without a Governor. What these victims had in common was cancer.

Every year, all over the world, thousands and thousands of men, women and children suffer and die from one of the most dread diseases - cancer.

The victims of cancer suffer more than people who have other diseases, and most of those who have cancer do not have the hope of recovery like people who have other diseases. Besides surgery and radium treatments, these poor people just don't have any hope. And then, how many times does surgery or radium work? The Governor of Alabama had many operations.

Yet, what is medical science and research doing for these people who are doomed to be inflicted with cancer? Very little. Americans donate millions of dollars every year to many kinds of charities such as the March of Dimes, the United Fund and Community Chest. But how many of you have given to the American Cancer Society? What is so pitiful about this is that with more money and doctors, a cure for this dread disease could be found within the next few months. Yet people keep giving money to other organizations which are doing research on diseases that already have at least partial solutions. For tuberculosis, patients go to a sanatorium for a while and usually recover. For heart disease, there are many kinds of drugs to regulate the heart, surgery to replace valves and now, millions of dollars have been spent for heart transplants for only a very few people. This just isn't fair.

The best insurance that any of us have from being inflicted with this dread disease, cancer, is to give generously to the American Cancer Society so that they, and other researchers may be able to find a cure within the next few months. Our only hope is for the research hospitals to spend more money and devote 50% of their time and effort for cancer research. Help those poor people who have no hope. Help prevent the endless suffering of the inflicted. Give generously and help with the drive to get 50% of the medical research devoted to finding a cure for cancer.



Six

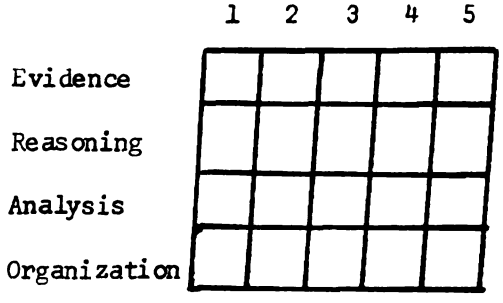
"We must explore new approaches to the problems of commercial farming," declared the Secretary of Agriculture in a recent report. The present program is one of parity price supports. Congress by law arbitrarily establishes a "fair" ratio of farm income to farm expenses which is labelled "partiy." Crop prices are guaranteed by law at some percentage of this parity thru government loans and purchases.

It is rather obvious price supports at whatever level haven't worked. The Department of Agriculture reported that under high price supports, farm income has failed to keep up with the staggering pace of rocketing farm expenses. Despite price supports, conservation acreages, and so on, production expenses increased 70% over the last fifteen years while farm income increased only 17%. This cost-price squeeze represents a considerable problem in new farm incomes.

Furthermore, despite their lack of success in raising farm income, these price support programs have been expensive. Hidden costs make the total difficult to estimate. But the recent Economic Report of the President's show that over the last three years, these programs have cost the taxpayers 8 billion dollars.

Moreover, as Under Secretary of Agriculture, John Schnittker said a few months ago, "today's programs have been designed specifically to provide price and income protection primarily to farmers on adequate-sized farms - but it is not clearly understood and widely accepted that most small farmers in the U.S. cannot attain good incomes and living standards from farming alone." In fact, economist McConnell reports that 44% of the farmers produce 91% of the total farm production. This means that the marginal 56% produce only 9% of the total farm production. These are the marginal farmers who present the real farm problem. They cannot survive this cost-price squeeze.

We should therefore do away with the expensive price support programs that do little to meet the marginal farmers' needs. The productive family can meet adjustments this action will cause. Credit facilities and vocational retraining should be made available so that the marginal farmer may be aided from poverty and into a productive segment of society. The solution is clear; remove the ineffective program of parity price supports.



Seven

Today we face a serious problem--the discouraging rate of progress that has been made in civil defense. Since the program began, the gains in civil defense have been modest at best, however, during the past two years, there seems to have been a significant decline in public interest and consequently in the number of volunteers.

There are four parts to the civil defense system: it is necessary to have an adequate national warning device, a communication system which is intended to keep the survivors informed, a monitoring and reporting network of radioactive fallout, and a damage assessment team.

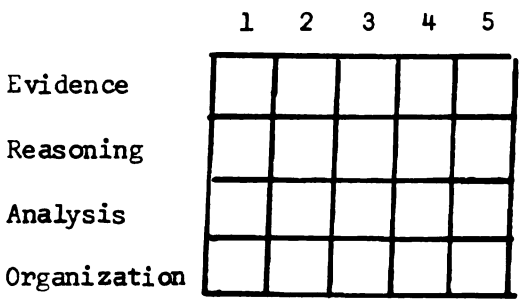
Three of these parts require a communication system - a radio network. Yet, in a 1967 report from the Office of Civil Defense, it was found that only 39 states have the Civil Defense Radio System. Certainly, the other 11 states need the coordinated national Civil Defense Radio System.

Furthermore, the system of shelters stocked with life supplies is inadequate. According to the Statistical Abstract, 1967, there are only 47.1 million spaces in shelters which are stocked with supplies to survive. And, these supplies for only 25% of our population would last for 14 days. This, of course, leaves 75% of the population without any shelters with supplies. If there were more funds available instead of the mere 141.1 million dollars, then adequate shelters could be prepared for the rest of the people. If there were more public interest, then there would be enough volunteers to maintain them.

But even if more of the public were to volunteer for service in fire-fighter teams, rescue teams, etc., not enough staff is being trained to supervise these efforts. The Office of Civil Defense Staff College trained only 2,842 last year. The Director of Civil Defense estimates that more than twice this many are needed each year for the next ten years to provide adequate supervision.

Another problem associated with the Civil Defense program is that the public is apathetic. Only 5.9 million persons have participated in the medical self-help training. This is only 1/40 of the population.

If the government provides more funds and if the public volunteers to fill the gap of 25,000,000, then the civil defense program will finally become the system that it was designed to be.



Eight

One of the more interesting personalities in modern German history was a man named Paul von Hindenburg. His is an intriguing story because he was a popular and powerful man even though the merit of his actions is questionable.

The highlights of his military career from 1903 to 1918 give an indication of his alledged feats. In 1903, he commanded the IV army at Magdeburg and received some credit as a leader. However, the Wheeler-Bennett account of this battle reveals that "due to his lack of leadership, Hindenburg allowed the corps to lose the battle." In 1914, the Russians were invading East Prussia; Hindenburg supposedly was responsible for the German victory over the Russians at Tannenburg. However, Dr. Louis Bronson's book on great battles indicates that when Hindenburg came to take the command, the man already in command had the strategy planned; then Hindenburg memrely approved the plans and then took the credit for the German victory. During World War I, Hindenburg received the credit for many other military victories. However, W. Goerlitz, a German historian at Frankfort University, gives a detailed account of how Hindenburg's aid, Ludendorff, was actually the military strategist and planned the victories and manuvers.

Since Hindenburg was totally involved as a military man, it is not difficult to understand his zeal, although at times it seems to have been his chief motivation. For instance, in 1918, the foreign minister Richard von Kuhlmann said that a military victory was neither possible nor wise to pursue. Determined to win at any cost, Hindenburg silenced von Kuhlmann by forcing his dismissal. He wanted to fight, and was mainly responsible for Germany's refusal of President Wilson's terms.

After the war, Hindenburg became the President of the country despite vocal dissent from the German intelligencia. Herr Voigt, a Hindenburg biographer, maintains that the election was not fair but fraudulent. Hindenburg had won again.

However, the one act for which Hindenburg was responsible was placing Adolf Hitler in power. In 1932, Hindenburg appointed Hitler as Chancellor. The story is well-known after that.

Even though Hindenburg's character, motivation, and methods are certainly dubious, he was always popular with most of the people and most of the established German families. It is indeed unfortunate that a man such as this, possessed so much power when Germany needed an intelligent, wise statesman.

	1	2	3	4	5
Evidence					
Reasoning					
Analysis					
Organization					

Revised Form
of One

Every year, cancer takes thousands of lives. The American Cancer Society states that cancer strikes one out of every eight Americans. Last month, the American Cancer Society announced that due to recent advances in research, the chances of finding a cure for cancer in the next one or two years are increasingly good. Many of the Society's researchers feel that a cure for most types of cancer can be achieved soon - but only if we concentrate money and a large number of doctors and research specialists on this problem.

The primary obstacle which inhibits this goal is the allocation of funds and researchers. Actually, the present allocation of money and research specialists is inadequate. In a recent publication from the Department of Health Education and Welfare, the Department reported that, at the present time only 5% of all medical research is being conducted in a search for a cure for cancer. Dr. Gene Hoffman, Director of Research at the Mayo Clinic, is convinced that it will take two or three years to find the cure if medical research centers in this country spend more time and money and assign more men to work on this problem. Dr. Hoffman suggested that 40 or 50% of medical research ought to be devoted to finding a cure for cancer. Certainly, a 5% effort is inadequate in light of the serious, often lethal effects of this disease.

It is true that such a reallocation of funds and specialists will temporarily delay work on other illnesses such as tuberculosis and heart disease. But there are already many ways to help patients who suffering from these disease. However, as Dr. James Dressler pointed out in a recent speech, the only treatments we have for cancer are surgery and radium treatment, and these are temporary and partially effective for the vast majority of victims.

Thus, the most effective way to reduce suffering and death is to spend enough money to have an adequate research program that will concentrate on finding a cure for cancer as soon as possible.

This is a set of introductions to a news program. Each introduction gives information about the person who will speak at some time on this news program. After reading each introduction, evaluate the persons' acceptability as a source. In your evaluation, consider these items: whether the person is impartial about his topic, his mental qualifications (e.g. education), if he has had an opportunity to observe what he is commenting upon, if he is an expert in the field, if he has a possible source of bias, and if he has the credentials (e.g. experience, trustworthiness).

After reading each introduction, mark the speaker's acceptability either as 'high,' 'medium,' or 'low' in the left hand margin. An example follows:

EXAMPLE

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Lyndon Johnson who will speak in favor of the current policy in Viet Nam. Mr. Johnson has a B.A. from a college in Texas. Before joining the U.S. Senate he taught school. He has been President for five years.

High ___

Medium ___

Low ___

This should take about ten minutes. Please begin.

Number One

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Kent Michaels, who urges the elimination of parity price supports in agriculture. Dr. Michaels received his Ph.D. in agricultural economics from Cornell. For the past five years he has worked as the Research Director in the Department of Agricultural Economics at the University of Wisconsin. He is the author of two books on the relationship between government policy and agriculture."

High ___

Medium ___

Low ___

Number Two

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Herman Sparrow who speaks for more money and time for cancer research. Mr. Sparrow completed grammar school and then worked his way up to copyboy in an advertising firm. For the past six months, he has watched as his employers won and then lost an advertising project from the American Cancer Society. He plans to return to Oklahoma so that he can begin high school because his employers are likely to go out of business and he will no longer have a job."

High ___

Medium ___

Low ___

Number Three

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Leonard Steinburg, who describes Hindenburg as a cruel Prussian dictator. After fleeing from Belgium prior to the German invasion during WW I, he spent the next few years aiding the Zionist movement. In the late 1940's, he was one of the first settlers in Israel. He now lives in the U.S. and works as a clerk in a clothing store."

High ___

Medium ___

Low ___

Number Four

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Stan Adams, who urges that the U.S. expand its civil defense group of workers. Dr. Adams received his Ph.D. in political science from Harvard. He directed the research efforts for the Department of Defense on its civil defense projects from 1950 to 1966. For the past two years, he has been with Boston University as a Research Director for the Department of political science."

High ___
Medium ___
Low ___

Number Five

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Tommy Hicklesten, who urges that the U.S. add more people to its civil defense team. Mr. Hicklesten is the director of propagation for the Scientifologists, a group who believes that the atomic bomb is a creation of God to destroy our enemies. Believing that the world will end by August of 1969, Mr. Hicklesten is raising money to build bomb shelters."

High ___
Medium ___
Low ___

Number Six

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Eugene W. Haynes, who advocates more time and money for cancer research. Dr. Haynes received his degree from Harvard Medical School and then worked as a researcher at the Mayo Clinic. He has worked in cancer research for the past fifteen years and is currently the Research Director of Johns Hopkins Hospital. The author of several journal articles, he is currently on the executive council of the American Medical Association."

High ___
Medium ___
Low ___

Number Seven

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Robert Lansing, who describes Hindenburg as a Prussian tyrant who aided Hitler. Dr. Lansing received his Ph.D. from Stanford University in European history. In 1965, he was a Fulbright lecturer to Geison University in Germany. For the past eight years, he has held the position of Professor at Yale University. The author of several journal articles, he is also a consultant to the Encyclopedia Britannica."

High ___

Medium ___

Low ___

Number Eight

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight an article by Arnold Willow, who urges the elimination of parity price supports in agriculture. Mr. Willow completed the 8th grade in Kitsap, Missouri. His occupational interests include being a local director for the John Birch Society and a county organizer for the Minute Men. In 1964, Mr. Willow worked as a local campaign manager for Barry Goldwater. He is currently serving a sentence in prison for libel against the Farmers' Alliance."

High ___

Medium ___

Low ___

Number One

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight, an article by Robert Landon, who discusses the merit of a WW I German military personality, General von Hindenburg. Dr. Landon received his Ph.D. from Stanford University in European history. In 1965, he was a Fulbright lecturer to Geison University in Germany. For the past eight years, he has been Professor at Yale University and has recently been appointed as Dean of the College of Humanities. The author of several journal articles, Dr. Landon is currently writing a text book on European history."

High ___
Medium ___
Low ___

Number Two

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight, an article by David Adams, who urges that the U.S. expand its civil defense group of workers. Dr. Adams received his Ph.D. in political science from Harvard. He directed the research efforts in Civil Defense for the Department of Political Science at Princeton from 1950 to 1966. For the past two years, he has been with Boston University as a Research Director for the Department of Political Science. In the fall of 1968, he will be a distinguished visiting professor to Cornell and will teach a graduate seminar in civil defense."

High ___
Medium ___
Low ___

Number Three

"It is 5:45, time for news background, comments by persons on controversial issues. Tonight, an article by Leonard Polanski, who describes Hindenburg as a cruel, dictatorial tyrant. Mr. Polanski has worked for the department of sewage for the past fifteen years in Chicago. The son of a Rabbi, Mr. Polanski organized the local chapter of Mothers for a Moral America, and is currently on release on bail from a charge that he prints pamphlets advocating the violent overthrow of the government. Of Russian parentage, Mr. Polanski looks forward to becoming an active supporter of Communism."

High ___
Medium ___
Low ___

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High ___

Medium ___

Low ___

APPENDIX B

INSTRUCTIONS TO THE SUBJECTS AND SCALE ITEMS

DISCUSSION

This appendix contains the oral instructions to the Ss and the four 3-item scales.

The three 3-item scales were borrowed directly from Jenks (1965) with no alteration.

Jenks modified the first two items on cancer research. Janis and Field used a fill-in-the-blank option for these two items; Janks substituted item options. Item three was not modified.

The three items on Hindenburg were not modified for either Jenks' study or for the present one.

Jenks substituted item options for the fill-in-the-blank option used by Janis and Field on the first item concerning civil defense.

The three items on the parity price system of agriculture were constructed to appear like the other nine items.

Oral Instructions to the Ss:

"Now I am going to ask you to listen to some broadcasts. I would like you to answer some more questions about your opinion after you have heard the tapes.

I am asking you to listen to these tapes to show you what some other people are thinking about these matters. You are perfectly free to agree or disagree with these reports, of course. After you have heard each broadcast you will be asked whether you agree or disagree with it. Remember, I want to know what you think, so give me your own personal opinion.

The tapes you're going to hear have been taken from a college radio station. This station brings together opinions in the news today on a wide variety of issues.

There are many different opinions about these different subjects. The people who wrote the broadcasts you are about to hear have put down their own points of view. There are other people, of course, who think differently about these topics. For instance, my own personal views do not happen to agree with certain of these tapes, although there are some other articles with which I'm inclined to agree. So feel free to decide for yourself whether you agree or disagree with each of these broadcasts. Please listen to these tapes the same way you would listen to a radio and then answer the questions about your opinion."

How long do you think it will be before a really effective cure for cancer is found?

_____within a year

_____within 3 years

_____within 8 years

_____within 15 years

_____within 25 years

_____within 40 years

_____more than 40 years

At the present time, 5% of our medical research specialists are working on a cure for cancer. What per cent of medical research specialists do you think should be working on a cure for cancer?

_____less than 2%

_____about 5%

_____about 10%

_____about 20%

_____about 35%

_____about 50%

_____more than 50%

Do you think we should spend more, less, or the same amount of money on cancer research during the coming year as we did during the past year?

_____We should spend a lot more money than we do now.

_____We should spend a little more than we do now.

_____We should spend the same amount as we do now.

_____We should spend a little less than we do now.

_____We should spend a lot less than we do now.

Do you agree or disagree with the following statement about Paul von Hindenburg, the man who was Commander-in-Chief of the German Army during the First World War and who later became the President of the German Republic from 1925 to 1934:

"Paul von Hindenburg was an enemy of everything that American democracy stands for and he should be regarded as an evil and vicious German ruler."

_____I strongly agree with this statement.

_____I am inclined to agree, though not entirely.

_____I am completely undecided--can't make up my mind.

_____I am inclined to disagree, though not entirely.

_____I strongly disagree with this statement.

Some people have made the suggestion that cities throughout democratic Germany should hold memorial services to honor Paul von Hindenburg. Do you think this is a good or a bad idea?

_____Very good

_____Fairly good

_____Slightly good

_____Undecided

_____Slightly bad

_____Fairly bad

_____Very bad

Do you think that Paul von Hindenburg was humane and democratic or cruel and dictatorial? That is, was he a good or bad person?

_____Extremely good

_____Fairly good

_____Slightly good

_____Undecided

_____Slightly bad

_____Fairly bad

_____Extremely bad

During the past year, there have been several million men and women serving as volunteers in the United States Civil Defense Program. During the coming year, how many people do you think the United States should have as volunteers in civil defense work?

_____none

_____less than 3,000

_____between 3,000 and 100,000

_____between 100,000 and 1 million

_____between 10 and 25 million

_____more than 25 million

Do you think the United States ought to spend more money or less money than it spends at present on civil defense?

_____The program should receive top financial priority.

_____We ought to spend a great deal more.

_____We ought to spend a little more.

_____We ought to spend about the same amount as at present.

_____We ought to spend a little less.

_____We ought to spend a great deal less.

_____No federal funds should be used.

If it ever happens that American cities are attacked by atomic bombs, how much help do you think a large civil defense organization would be with respect to saving lives?

_____It would be of tremendous value-saving millions of lives.

_____It would be of great value.

_____It would be fairly valuable.

_____It would be slightly valuable.

_____It would be of very little value.

_____It would be of no value at all.

_____It might do more harm than good.

The parity price system is a pricing system in agriculture which guarantees crop prices at a certain level. Some people have suggested that the parity price system should be eliminated. Do you think this is a good or bad idea?

_____Very good

_____Fairly good

_____Slightly good

_____Undecided

_____Slightly bad

_____Fairly bad

_____Very bad

Do you agree or disagree with the following statement about the parity price system: "The parity price system is of no value to the poor, marginal farmer.."

_____I strongly agree with this statement.

_____I am inclined to agree, though not entirely.

_____I am completely undecided--can't make up my mind.

_____I am inclined to disagree, though not entirely.

_____I strongly disagree with this statement.

Do you think the United States ought to spend more money or less money than it spends at present on price supports?

_____The program should receive top financial priority.

_____We ought to spend a great deal more.

_____We ought to spend a little more.

_____We ought to spend about the same amount as at present.

_____We ought to spend a little less.

_____We ought to spend a great deal less.

_____No federal funds should be used.

APPENDIX C

COURSE SYLLABUS

Communication 309 — Fall, 1968
ARGUMENTATION — McCroskey

SYLLABUS

General Purpose

This course focuses on the critical analysis of argumentative discourse. The primary prupose of the course is to aid you to develop your ability to evaluate critically arguments of others. Thus this course is receiver oriented rather than source oriented. However, a secondary purpose of the course is to aid you to develop your ability to construct intellectually acceptable arguments in support of your beliefs.

Texts

Reason in Controversy, by Glen E. Mills and
Readings in Argumentation, by Jerry M. Anderson and Paul J. Dovre

Evaluation

There will be two examinations, a mid-term, and a final. Written assignments will be assigned as the term progresses. To receive a passing mark in the course all written work must be satisfactorily completed on time and a mark of "C" or higher must be achieved on at least one of the examinations.

Class Procedures

The class periods will be devoted to lecture, discussion of course material, and analysis of specimens of argumentative discourse.

Oral Performance

There will be no individual oral performances assigned as a part of this course. Students desiring experience in oral argumentation are encouraged to enroll in Communication 310 concurrently or during a later term.

Communication 309 - Schedule

Thursday, September 26	Introduction and Overview Read: Mills, Ch. 1 Anderson and Dovre, pp. 55-82
Tuesday, October 1 Thursday, October 3	Basic Definitions Read: Mills, Ch. 2-3 Anderson & Dovre, pp. 75-117
Tuesday, October 8	Presumption and Burden of Proof Read: Mills, Ch. 3 Anderson and Dovre, pp. 23-49
Thursday, October 10	Proposition Analysis Read: Mills, Ch. 4-5 Anderson & Dovre, pp. 123-181
Tuesday, October 15 Tuesday, October 22	Reasoning and Argument Read: Mills, Ch. 8-9 Anderson and Dovre, 235-294 McCroskey, An Introduction to Rhetorical Communication, Ch. 5.
Thursday, October 24	Evidence in Argument Read: Mills, Ch. 7 Anderson & Dovre, 185-231 McCroskey, "The Place of Evidence" (handout)
Thursday, October 29	Mid-term Exam
Thursday, October 31	Arguing for Change Read: Mills, Ch. 10
Tuesday, November 5	Arguing Against Change Read: no assignment
Thursday, November 7	Refutation Read: Mills, Ch. 11 Anderson & Dovre, pp. 295-311
Tuesday, November 12	Evaluating Argument Read: Mills, Ch. 13
Thursday, November 14 Tuesday, December 3	Analysis and Criticism of Specimens of Argument
Thursday, December 5	Review and Conclude
December 9-13	Final Exam as scheduled