

— 22 —

[illegible]

2003

1000

1944, 1945.

FILE 3000-

[illegible]

1953

1955

10, 11, 12

1992

1. *Chlorophyll a* and *Chlorophyll b* contents were determined by the method of Arar and Cook (1987).

1990

.....

Journal of Management Education 30(6)

11

1133, 1134

Journal of Management Education

Journal of Management Studies

ABSTRACT

A STUDY OF THE GENERALITY OF DIMENSIONS OF SOURCE EVALUATION

by Albert D. Talbott

This study investigates the generality of the dimensions of source evaluation developed by Berlo, Lemert, and Mertz (1966) across people and for different kinds of sources. Berlo et al. adapted the semantic differential developed by Osgood, Suci, and Tannenbaum (1957) for evaluation of communication sources. The concepts used are sources or potential sources of messages. The bi-polar adjective scales used are ones deemed relevant to evaluating information sources. The criteria for scale selection grew out of the work of Hovland, Janis, and Kelly (1953). Respondents are asked to use the scales to evaluate the sources in the usual semantic differential fashion. The results are then factor analyzed with each factor representing a dimension of source credibility or source evaluation. Primarily three factors have emerged from their work: safety, qualification, and dynamism.

Berlo et al., in doing the factor analysis of the adjective scales, summed across both subjects and sources. This summing implies using all source ratings on a particular scale for each subject as individual observations in computing the correlations

and each
will be
The factor
derived from
interaction
analysis, and
contribute
findings.

In the
of sources
that. One
similar to
set is that
subjects' and
obtained from
For this study
to rate each
the factor
2 for each
evaluation.
between the
to dogmatic
between the
factors is

Results

among scales. The number of observations for each correlation would be the number of subjects times the number of sources. The factor structure under such conditions could have been derived from variance attributable to subjects, sources, or an interaction of both. The present study still uses factor analysis, but in such a way that the sources of variance which contribute to the factor structure are not so completely confounded.

In this study, subjects are asked to evaluate two sets of sources on the bi-polar adjective scales developed by Berlo et al. One set of sources is judged to have beliefs and ideas similar to the subjects' own beliefs and ideas and the other set is judged to have beliefs and ideas different from the subjects' own. The two sets of source evaluation data thus obtained from each subject are factor analyzed individually. For this study, 99 subjects used 34 semantic differential scales to rate 48 communication sources (2 groups of 24 each). In all, 198 factor analyses (34 variable, 24 observation) were computed (2 for each subject). The individual dimensions of source evaluation thus obtained are examined both for differences between the two kinds of sources and for their relationship to dogmatism. Also, the degree of correspondence is examined between the individual three factor solutions and the three factors isolated by Berlo et al.

Rokeach, in delineating the defining characteristics

number of

the way the

organized.

primary to

systems of

the closer

minimum.

the belief-

times and

part of the

associated

directly p

time, the

1.

11.

0.

evaluation

series of

responses

between open and closed systems, focuses on the differences in the way the belief systems of the two types are structured or organized. Closed systems (high dogmatics) exhibit a greater tendency than do open systems (low dogmatics) for the subsystems of the disbelief system to decrease in differentiation the closer each is to the disbelief end of the belief-disbelief continuum. If information sources can be viewed as elements of the belief-disbelief systems, then the evaluations of these sources should be organized in a way that is similar to that part of the belief-disbelief systems with which the sources are associated. The two main hypotheses for this study were derived directly from Rokeach's belief system theory. Stated in general form, the hypotheses are:

- I. The number and/or differentiation of the dimensions of source evaluation will be greater for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.
- II. The difference between the number and/or differentiation of the dimensions of source evaluation for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems than for open systems.

Comparisons between the individual dimensions of source evaluation and the dimensions of source evaluation isolated by Berlo et al. are made. The following two informal general hypotheses are offered to facilitate these comparisons:

III.

IV.

Operational

the dimensi

and II incl

criterion,

three and 2

for by the

related sci

the two, th

hypotheses

effects in

hypothesis

analysis.

Open

when the t

Barrio et al

cluded a se

assigned to

tests as we

included in

- III. The nature or kind of dimensions of source evaluation used for the sources associated with the belief end of the belief-disbelief continuum will differ from those used for sources associated with the disbelief end.
- IV. Closed systems will differ from open systems in the nature or kind of dimensions of source evaluation used.

Operationalizations of "the number and/or differentiation of the dimensions of source evaluation" used to test Hypotheses I and II included number of factors rotated using the Kiel-Wrigley criterion, proportion of variance accounted for by the one, two, three and four factor solutions, proportion of variance accounted for by the largest factor in the two, three and four factor rotated solutions, and a simple structure index computed for the two, three and four factor rotated solutions. Both hypotheses for each operationalization were tested by different effects in the same mixed analysis of variance design. Hypothesis I was generally supported by the results of the analysis. Hypothesis II was not supported.

Operationalizations of the degree of correspondence between the individual three factor rotated solutions and the Berlo et al. results used to test Hypotheses III and IV included a series of dichotomous characteristics. These were designed to make the comparisons both on a factor to factor basis as well as on an overall basis. The statistical analysis included three nonparametric tests all using the chi-square

significant

results of

con-

dimensions

of the ear

unmistakable

and dynamic

for the cell

generally

lowest 12 x

are required

that is the

series of

final, final

factor of

References

Smith, C. E.
Smith, C. E.
Report
Smith, C. E.
Smith, C. E.
Smith, C. E.
Smith, C. E.
Smith, C. E.

Smith, C. E.
and E.

Smith, C. E.
Smith, C. E.
Smith, C. E.

Smith, C. E.
Smith, C. E.

distribution. Hypothesis III was generally supported by the results of the analysis. Hypothesis IV was not supported.

Conclusions regarding the generality of the Berlo et al. dimensions of source evaluation are as follows: 1) the generality of the safety dimensions is highest and is acceptable for most conceivable purposes; 2) the generality of the qualification and dynamism dimensions approaches that of the safety dimensions for the belief sources only; 3) for these two dimensions, generality is lower for disbelief sources; 4) generality is lowest if representatives of all three Berlo et al. factors are required among the individual factors; and 5) conclusion four is true for both kinds of sources, except that for disbelief sources, it is even less likely that all three Berlo et al. dimensions will be represented in the individual three factor solutions.

References:

- Berlo, D. K., Lemert, J. B., and Mertz, R. J., Dimensions for Evaluation the Acceptability of Message Sources. Report of research supported under Contract "OCD-PS-6471, Office of Civil Defense, Department of Defense, as part of Michigan State University's continuing research program on the public acceptance of civil defense messages, 1966.
- Hovland, C. I., Janis, I. J., and Kelly, H. H., Communication and Persuasion, New Haven: Yale University Press, 1953.
- Osgood, C. E., Suci, G. J., and Tannenbaum, P. H. The Measurement of Meaning, Urbana: University of Illinois Press, 1957.
- Rokeach, M. J., The Open and Closed Mind. New York: Basic Books, 1960.

Ac

Communica

State Uni

ments for

Reference

Accepted by the faculty of the Department of
Communication, College of Communication Arts, Michigan
State University, in partial fulfillment of the require-
ments for the Doctor of Philosophy degree.

Erwin P. Bettinghaus
Director of Thesis

Guidance Committee: Erwin P. Bettinghaus Chairman
H. K. M. M. M.
William A. Fawcett
Terrence M. Allen

A STUDY OF THE GENERALITY OF
DIMENSIONS OF SOURCE EVALUATION

By

Albert David Talbott

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Communication

1968

11/15/68
11/15/68
Copyright by

Albert David Talbott

1968

In
of practice
chairman
Bernard
guidance
chairman
support
the special
Mrs. Anita
Mrs. Betty
all names
of Comm
special
the work
the ext
College
whose
Dr. W
chairman
Coun
a group
finish
program

ACKNOWLEDGMENTS

In particular, I would like to acknowledge my debt of gratitude to the following people: Dr. Erwin P. Bettinghaus, chairman of my dissertation committee; Drs. Hideya Kumata, Terrance M. Allen and William A. Faunce, the members of my guidance and dissertation committee; Dr. David K. Berlo, chairman of the Department of Communication, for his generous support of both me and the project; Jeffrey Katzer, for writing the specialized programs needed for the computer analysis; Mrs. Anita Immele, Miss Diane Estfan, Mrs. Teresa Shen, Mrs. Betty Darlington, Mrs. Jean Loh, and Donald Clements, all members of the staff of Research Services of the Department of Communication who got my data through the computer with a special thanks to Mrs. Immele, who supervised the whole process; the unknown members of the MSU Computer Center staff who made the extensive use of the computer possible; members of the College of Communication Arts Computer Allocation Committee whose generous computer time grants made the analysis possible; Dr. Malcolm S. MacLean, Jr., my former guidance committee chairman and present colleague, director of the School of Journalism at the University of Iowa, for ensuring that I had a supportive environment after I moved to Iowa in which I could finish writing this dissertation; Norman VanTubergen, chief programmer for the Mass Communication Research Bureau of the

Panel of

of the

Panel of

text; Miss

Mrs. Schir

and handi

of a P.O.

and were

of this

could be

David, an

School of Journalism at the University of Iowa, for help in winding up the computer analysis after my move to Iowa; Mrs. Carol Oukrop, School of Journalism, for her much needed help in editing the text; Miss Cindy DeCounter, for typing the preliminary manuscripts; Mrs. Shirley Sherman, for the final typing of the manuscript and handling that myraid of details that are required in winding up a Ph.D. program; and finally to the large number of scholars who were kind enough to give me time to discuss various aspects of this research, too numerous to name. Last but not least, I would like to dedicate this endeavor to my wife, Rose, my son, David, and to the memory of my late mother, Mrs. Maude E. Talbott.

CHAPTER

I

II

III

IV

RELIGION

TABLE OF CONTENTS

CHAPTER		<u>Page</u>
I	INTRODUCTION	1
II	STUDY DESIGN AND METHODOLOGY	25
III	RESULTS	73
IV	DISCUSSION AND CONCLUSIONS	131
	BIBLIOGRAPHY	150

Table

1

2

3

4

5

6

7

8

9

10

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1	Differential Differentiation Within Belief and Disbelief Systems for Open and Closed Systems	13
2	Mean and Range of Dogmatism Scores Associated with Three Dogmatism Groups . .	20
3	Simple Randomized Analysis of Variance Results for the Proportion of Variance Accounted for by the Largest Factor in the One (First Principal Axis Factor), Two, Three, and Four Factor Rotated Solutions .	20
4	The Number of Times each of the Evaluative Scales had its Highest Loading on the Largest Factor for the Three Dogmatism Groups . . .	23
5	Source Belief-Disbelief Rating Scale Positions Not Used When Not All Nine Were Marked . .	29
6	Frequency Distribution of Loadings on the First Principal Axis Factor	31
7	Factor Analysis of the Fifty-three Subjects' Ratings of the Sources (53 Variables, 123 Observations): Factor Loading for the Two Factor Varimax Rotated Solution and the First Principal Axis Factor	32
8	Correlations among Factor Scores for First Principal Axis (1st PA) Factor and the Two Factor Varimax Rotated Solution (2-FS). . .	38
9	Correlation Table among the Factor Scores for the First Principal Axis Factor Computed by Four Methods	42
10	Communication Courses Participating in Main Study	43

List of

Table

11

12

13

14

15

16

17

18

19

20

21

22

List of Tables -- continued

<u>Table</u>	<u>Title</u>	<u>Page</u>
11	Background Information	44
12	Correlations Between Source Belief-Disbelief Mean Ratings of the Regular School Year Students and the Summer Students	47
13	Quartile Crossed-Classification of the Mean Ratings Given the 80 Sources by Regular School Year and Summer Students	47
14	Frequency Distribution of Dogmatism Scores .	60
15	Mean Scores for Three Dogmatism Groups . . .	62
16	Study Design	63
17	Analysis of Variance Source of Variation Table	64
18	Fourfold Frequency Table for use in Testing the Differences Between the Factor Solutions for the Belief and Disbelief Sources in the Degree to which each Exhibit a Given Characteristic	71
19	Fourfold Frequency Table for use in Testing the Differences Between Two of the Three Dogmatism Groups on the Degree to which Individual Factor Solutions Exhibit a Given Characteristic	71
20	DEPENDENT VARIABLE: Number of Factors Rotated in the Factor Solution Meeting the Kiel- Wrigley Criterion Equal to Three	76
21	DEPENDENT VARIABLE: Proportion of Variance Accounted for by the First Principal Axis Factors (One Factor Solutions)	77
22	DEPENDENT VARIABLE: Proportion of Variance Accepted for by the Two Factor Solutions . .	78

Part of

Table

23

24

25

26

27

28

29

30

31

32

List of Tables--continued

<u>Table</u>	<u>Title</u>	<u>Page</u>
23	DEPENDENT VARIABLE: Proportion of Variance Accounted for by the Three Factor Solution	79
24	DEPENDENT VARIABLE: Proportion of Variance Accounted for by the Four Factor Solutions	80
25	DEPENDENT VARIABLE: Proportion of Variance Accounted for by Largest Factor in Two Factor Rotated Solutions.	83
26	DEPENDENT VARIABLE: Proportion of Variance Accounted for by the Largest Factor in the Three Factor Rotated Solutions	84
27	DEPENDENT VARIABLE: Proportion of Variance Accounted for by Largest Factor in the Four Factor Totated Solutions	86
28	DEPENDENT VARIABLE: Simple Structure Index for the Two Factor Rotated Solutions (Proportion of the Total Variance Accounted for by the Highest Loadings for Each Variable).	87
29	DEPENDENT VARIABLE: Simple Structure Index for the Three Factor Rotated Solutions (Proportion of the Total Variance Accounted for by the Highest Loadings for Each Variable	88
30	DEPENDENT VARIABLE: Simple Structure Index for the Four Factor Rotated Solutions (Proportion of the Total Variance Accounted for by the Highest Loadings for Each Variable)	89
31	Number of Factors in the Rotated Solutions in the Individual Factor Analyses Which Met the Kiel-Wrigley Criterion When Set at Three: Frequency Distribution	92
32	Mean Proportion of Variance Accounted for by Each Factor in the Three Factor Solutions of the Individual Factor Analyses and the Berlo Factor Analysis	95

100

100

100

100

100

100

100

100

List of Tables--continued

<u>Table</u>	<u>Title</u>	<u>Page</u>
33	Mean Index of Factorial Similarity Coefficient Between Each of the Factors in the Three Factor Rotated Solutions of the Individual Factor Analyses and the Three Factors (Safety, Qualification, and Dynamism) Isolated by Berlo	96
34	Mean Proportion of Variance Accounted for by Each of the Three Groups of Scales (Berlo's Three Factors of Safety, Qualification and Dynamism) on Each of the Factors in the Three Factor Rotated Solutions of the Individual Factor Analyses	100
35	Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of the Frequency and Percentage of the Number of Different Factors with Which the Three Berlo Factors had their Highest Indices of Factorial Similarity in the Individual Analyses	101
36	Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of Frequency and Percentage of Individual Solutions for Which All Three of the Berlo Factors were Judged to have Adequate Matches	105
37	Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of the Frequency and Percentage of each Kind of Individual Factors in Terms of Size (Large, Medium, or Small) Which have the Highest Index of Factorial Similarity with Berlo's Safety Factor	106
38	Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: The Proportion of Solutions for Which the Safety Factor has the Highest Index of Factorial Similarity with the Largest Factor in the Individual Solutions for the Belief Sources versus that for the Disbelief Sources	107

1st of

File

19

10

11

12

13

14

List of Tables--continued

<u>Table</u>	<u>Title</u>	<u>Page</u>
39	Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: the Proportion of Solutions for Which the Safety Factor has the Highest Index of Factorial Similarity with the Largest Factor in the Individual Solutions for both Belief and Disbelief Sources for the Low Dogmatism Groups versus that for the High Dogmatism Group . .	110
40	Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of the Frequency and Percentage of each Kind of Individual Factors in Terms of Size (Large, Medium, or Small) Which have the Highest Index of Factorial Similarity with Berlo's	111
41	Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of the Frequency and Percentage of each Kind of Individual Factors in Terms of Size (Large, Medium, or Small) Which have the Highest Index of Factorial Similarity with Berlo's	112
42	Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: The Proportion of Solutions for which the Dynamism Factor has the Highest Index of Factorial Similarity with the Smallest Factor in the Individual Solutions for the Belief Sources versus that for the Disbelief Sources. . . .	113
43	Classification of the Factors in the Three Factor Individual Solutions According to the Factor Types found by Berlo <u>et al.</u> (Safety, Qualification, and Dynamism)	115
44	Classification of Pattern of the Factors in the Three Factor Individual Solutions According to the Factor Types found by Berlo <u>et al.</u> (Safety--S, Qualification--Q, Dynamism--D, Other--OTH.)	116

100

101

102

103

104

105

106

107

108

109

110

List of Tables--continued

<u>Table</u>	<u>Title</u>	<u>Page</u>
45	Number of Factors in the Three Factor Rotated Solutions of the Individual Analyses Which Could be Classified as One of the Three Factors Found by Berlo <u>et al.</u>	117
46	Extent to Which the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified with the Largest as the Safety Factor, the Middle as the Qualification Factor, and the Smallest as the Dynamism Factor	118
47	Extent to Which One of the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Safety Factor	121
48	Extent to Which the Largest Factor in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Safety Factor	122
49	Extent to Which One of the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Qualification Factor	123
50	Extent to Which the Middle Sized Factor in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Qualification Factor	124
51	Extent to Which One of the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Dynamism Factor	125
52	Extent to Which the Smallest Factor in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Dynamism Factor	126
53	Extent to Which One of the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Characterized as a Merging of the Qualification and Dynamism Factors . . .	129

List of Tables--continued

<u>Table</u>	<u>Title</u>	<u>Page</u>
54	Summary of Findings Related to Hypotheses I and II	132
55	Summary of Findings Related to Hypotheses III and IV	136

Figure 1

LIST OF FIGURES

	<u>Page</u>
Figure 1. Schematic of the data generated by the source evaluation questionnaire cast in the form of a three dimensional matrix or cube.	52

3.

22

—

.

LIST OF APPENDICES

<u>APPENDIX</u>	<u>Title</u>	<u>Page</u>
A	Pretest Questionnaire Used	154
B	Mean ratings of the person descriptions (sources) on the scale ranging from persons whose beliefs and ideas are very different from my own (9 position) to persons whose beliefs and ideas are very much like my own (1 position) for both the pretest (Spring 1967) and the Main Study (Summer 1967)	170
C	Factor scores for the principal axis factor and the two factor rotated solution for the person factor analysis of the belief-disbelief ratings of the 123 person descriptions (sources) obtained for the pretest	183
D	List of the sources selected to be evaluated in the main study using the Berlo et al. source credibility semantic differential scales. Descriptions 1-24 are defined as the sources associated with the belief end of the belief- disbelief continuum. Descriptions 25-48 are defined as the sources associated with the dis- belief end of the belief-disbelief continuum	191
E	Factor loading matrix for the three factor solution for the re-factor analysis of the Berlo et al. Lansing area data deleting the scale "objective- subjective."	195
F	Questionnaires administered during Summer, 1967 for the Main Study used to obtain the source sample validation data, the background information, and the dogmatism scale data .	197
G	The Source Evaluation Questionnaire used during the Main Study: includes the instructions with a sample page used to obtain the semantic differential evaluation of the sample of source descriptions.	210
H	Overall factor analyses of the source evaluation data	217
I	Additional comments on the generality of the Berlo dimensions across subjects	224

years had

ideas to

source of

source of

the social

studied

quality

position

relevant

development

policy, and

source

size of

terminology

CHAPTER I

INTRODUCTION

Considerable research evidence amassed over the past forty years has shown that a person's acceptance of information and ideas is partly based on "who said it." What is it about the source of a message that can make him more effective than another source communicating essentially the same message? This variable, "the source's role in communication effectiveness," has been studied under various names: ethos, prestige, status, personality, charisma, image, character, and more recently, source credibility. Readers interested in reviews or summaries of relevant research can consult Berlo, 1967; Anderson and Clevenger, 1963; Klapper, 1960; Cohen, 1964; Hovland, Janis and Kelly, 1953.

The primary concern here is with the operationalization of source credibility. Anderson and Clevenger (1963) summarized some of the ways in which source credibility (ethos in their terminology) has been measured. They comment:

In a few instances the development of a measure of ethos has been the main goal of a research project, but more often the measurement of prestige, credibility, or some other ethical component has been ancillary to the study of such presumed results of ethos as preferences, attitude change, and information gain. The methods of measurement in both types of investigations are the same: (1) rankings,

8
2
2
1

different

the opera

McCracken

essays in

using to

different

isolate

effort

and Men

sources

in soul

Howla

credit

of the

the se

the se
the se
the se
the se

(2) sociograms, (3) "prestige indexes" obtained from attitude change data, (4) linear rating scales, (5) Thurstone-type attitude scales, and (6) devices similar to Likert scaling techniques, including the semantic differential.

To Likert scaling techniques, including the semantic differential. Two more recent research efforts have focused on the operationalization of the concept of source credibility. McCroskey (1966) conducted a series of studies aimed at measuring "ethos" in oral or speech communication situations using both standard Likert type scale items and semantic differential bi-polar scales. Factor analysis was used to isolate "dimensions of ethos." Preceding the McCroskey effort was the work of Berlo and his associates (Berlo, Lemert, and Mertz, 1966; Lemert, 1963).^{*} Their work has two primary sources or roots. As a theoretic explication of the concept of source credibility, they drew on the work of Hovland (Hovland, Janis, and Kelly, 1953). To operationalize source credibility along these theoretic lines, they drew on the work of Osgood (Osgood, Suci, and Tannenbaum, 1957) in the use of the semantic differential in measurement of meaning.

^{*}Throughout the remainder of the text as a means of simplifying reference to the work of Berlo and his associates, it will be referred to by using only the name of the principal author, Berlo.

10
treatment
basis to
management
development
operation
none in
operation
to complete
Series 10
Boulder

Berlo Source Evaluation Studies

Berlo and his colleagues note that besides a brief treatment by Hovland et al., little or no effort has been made to place the notions of credibility within some theoretic framework for either conceptual or operational development. Without such effort, particularly operationalization, they (Berlo et al., 1966, p. 1) note it "precludes consideration of the variable as a dependent outcome of communication, and makes it difficult to compare and correlate the results of different studies." Berlo (Berlo, et al., 1966, p. 2) summarized the ideas of Hovland et al. in the following way:

Although they did not devote a great deal of attention to the question, Hovland, Janis and Kelly did attempt to explicate the concept, both theoretically and operationally. In their review of credibility research, they suggest a two-dimensional conception; perceived expertness and perceived trustworthiness. In some of their studies, they also utilized a single item rating scale for each dimension; however, these ratings were omitted in most experiments. Even when used, their function was simply as a check on the validity of the a priori high or low credibility values assumed as attributes of sources such as Oppenheimer, Fortune, Pravda, etc.

In their theoretic discussion of perceived expertness and trustworthiness, Hovland et al. make a distinction between credibility and other source-related variables such as affection, admiration, power, fear, and awe--but suggest the relevance to credibility variables like intelligence and sincerity. With respect to the function of trustworthiness and expertise, they conclude that credibility varies positively

inserting

suggests

evaluated

meaning

semantic

direction

direction

are seen

data to

scale y

"linear"

the se

have s

concept

enable

under

in th

ed/ed

may

ways

with persuasion, although "from the results, it is not possible to disentangle the effects of the two main components of credibility--trustworthiness and expertise--but it appears that both are important variables."

Berlo notes a lack of empirical research designed to investigate how receivers evaluate information sources. He suggests that there is a similarity between the source evaluation problem and the general measurement of connotative meaning as developed by Osgood et al. (1957) employing the semantic differential. Typically, they assemble a set of adjective pairs judged to be opposites. Each pair of bi-polar adjectives bounds a seven-point rating scale. Respondents are asked to rate a number of concepts on each scale. The data thus obtained are submitted to factor analysis of the scale relationships with the resulting factors termed "dimensions of connotative meaning" for the concepts. Thus, the semantic differential is used to tap the "meaning" people have for concepts. Osgood et al. suggest that people evaluate concepts by applying underlying judgmental dimensions which enable them to differentiate among concepts. Each of these underlying judgmental dimensions is associated with a factor in the factor analysis of semantic differential bi-polar adjective scales. These judgmental dimensions define what they call semantic space. They suggest that one of the basic ways in which people could differ cognitively would be in the

number and kind of judgmental dimensions (collectively semantic space) they use to evaluate concepts. Osgood et al. have isolated three major dimensions that they feel are highly general and are used by most people. These are the evaluation, potency, and activity dimensions.

Berlo extrapolates the Osgood approach to the study of the "dimensions for evaluating the acceptability of message sources." The concepts become sources or potential sources of messages. The bi-polar adjective scales used are ones deemed relevant to evaluating information sources. The criteria for scale selection grew out of the Hovland work. Respondents are asked to use the scales to evaluate the sources in the usual semantic differential fashion. The results are then factor analyzed with each factor isolated representing a dimension of source credibility or source evaluation. Primarily three factors have emerged from their work: safety, qualification, and dynamism.

One goal implicit in the work of both Osgood et al. and Berlo is the development of measuring instruments which have a high degree of generality across a wide variety of contexts, concepts or sources, and people. Both groups of researchers suggest that the problem of generality needs to be further explored. This is implicit in Osgood's and Darnell's suggestions of concept-scale interaction (Osgood,

1984

1985

1986

1987

1988

1989

1990

1991

1992

1993

1994

1995

1996

1997

1998

1999

2000

2001

2002

2003

2004

2005

1962; Darnell, 1966). In typical use and construction of instruments based on either Osgood's or Berlo's work, there is implied a high degree of generality. In this project it is proposed to investigate some aspects of the problem of the generality of the dimensions of source credibility.

Rokeach's Belief System Theory and Source Evaluation

Rokeach (1960) makes a distinction between content and structure of belief systems. The belief systems of two people may have widely differing content, but may have highly similar kinds of organizations or structures. He lists at least three structural characteristics on which belief systems may vary. These include organization along a central-peripheral dimension, organization along a time-perspective dimension, and organization along a belief-disbelief dimension. The latter dimension has been singled out for focus in this study.

Rokeach assumes "that all of a person's beliefs are organized into two interdependent parts; a belief system and a disbelief system." Further, the disbelief system is thought to be composed of a number of sub-systems which can be arranged along a continuum of similarity to the person's belief system. This dimension is assumed to have certain properties on which people may vary. Among these

as the

of the

The gene

different

close to

dated,

The belief

Property

System

Station

Refers

Greater

to the

very o

The b

radio

which

work

ord

the

in t

as p

are the degree of differentiation of parts and the degree of isolation or lack of communication within and among parts. The general hypothesis suggested by Rokeach regarding differentiation of parts is: disbelief sub-systems relatively close to the belief system will be relatively highly differentiated, while those farther away will be poorly differentiated. The belief system is the most highly differentiated of all.

Differentiation of parts is one of the defining properties or characteristics of open and closed systems. A system is closed to the extent that the degree of differentiation of the belief system is greater than the degree of differentiation of the disbelief system. Open systems have greater differentiation within the disbelief system relative to the belief system than do closed. Open and closed systems vary on the degree of isolation within and between parts of the belief and disbelief systems. Open systems have communication within and among parts; closed systems have isolation within and among parts.

It is possible to relate these aspects of Rokeach's work to the problem of generality of semantic space or credibility dimensions. Degree of differentiation within the belief system or disbelief sub-systems can be interpreted in the case of semantic space and/or credibility dimensions as referring to the number or kinds of judgmental dimensions

and will

success

different

the disc

flaring

series o

reference

toward t

as a bet

this ca

people

concept

general

semantic

learning

more

space

into

work

define

space

used which enable one to differentiate between concepts or sources. When Rokeach talks about differences in degree of differentiation within the belief system when contrasted to the disbelief sub-systems, this could be interpreted as placing some limitations on the generality of these dimensions across concepts or sources. Further, Rokeach talks about differences in amount of differentiation as one proceeds toward the disbelief end of the belief-disbelief continuum as a defining characteristic of open and closed systems. This can be interpreted as suggesting differences among people in the way they might use bi-polar scales to describe concepts or sources. This suggests limitations on the generality of these dimensions across people.

Critique of the Wozniak Study

Wozniak (1963) attempted to relate differences in semantic space to Rokeach's theory of open-closed systems. Wozniak predicted that persons with open systems would employ more judgmental dimensions than would persons with closed systems. He had 241 college students evaluate 19 concepts with 40 semantic differential scales selected from Osgood's work (the Thesaurus study). The 19 concepts could conceivably be elements of both the belief and disbelief systems for most people. They included "my mother,"

10, "10

"100,"

"1000,"

"10000,"

"100000,"

"1000000,"

"10000000,"

"100000000,"

"1000000000,"

"10000000000,"

"100000000000,"

"1000000000000,"

"10000000000000,"

"100000000000000,"

"1000000000000000,"

"10000000000000000,"

"100000000000000000,"

"1000000000000000000,"

"10000000000000000000,"

"100000000000000000000,"

"1000000000000000000000,"

"10000000000000000000000,"

"100000000000000000000000,"

"1000000000000000000000000,"

"me," "John F. Kennedy," "Nikita Khrushchev," "engine," "snow," "boulder," "modern art," "sin," "leadership," "socialism," "symphony," "birth," "death," "war with Russia," "hospital," "prison," "United States," and "Communist China." The dogmatism scale was administered also. Three groups were defined: (1) Open--the 79 lowest scores, (2) Closed--the 81 highest scorers, and (3) Medium--the remaining 81 middle scorers. He did three Osgood type factor analyses of the 40 semantic differential scales, one for each of the three dogmatism groups. Based on the Kiel-Wrigley (1960) criterion (see Chapter II for explanation of criterion), the number of factors rotated for each of the three dogmatism groups varied; six for closed, five for open, and four for medium.

Open systems in the Wozniak study could not be differentiated from closed systems in the predicted way. If anything, the suggestion is in the reverse direction: closed systems have greater complexity than open systems due to the larger number of factors extracted. When compared by the index of factorial similarity, the factor structure matrices of both the open and closed groups were quite similar to each other but both were different from the medium group. The medium group's factor structure resembled closely Osgood's typical results with evaluative, activity, and potency factors and a fourth factor labeled tautness.

for the

armed

under the

regulation

of the

First, of

training

continuity

structure

along with

subject

relations

number

of course

employee

direct

various

action

and a

values

of the

point

system

system

system

to do

For the open and closed groups, the evaluative dimension showed up but the activity and potency did not. The three other factors which did emerge for these groups were labeled dynamism, predictability, and sensory-ennui.

There are two major difficulties with the Wozniak study. First, by doing factor analyses of scales for groups and summing across both subjects and concepts, he missed determining what sources of variance contributed to the factor structure. Summing across both subjects and concepts implies using all concept ratings on a particular scale for each subject as individual observations in computing the correlations. Then the number of observations would be the number of subjects times the number of concepts for purposes of correlation computation. These same procedures were employed in the work of both Osgood and Berlo. The factor structure under such conditions could have been derived from variance attributable to subjects, concepts, or an interaction of both. Rokeach's belief system theory deals with how a person internally organizes or structures the beliefs, values, attitudes, ideas, etc., attached to various aspects of his environment. The important aspect from a theoretic point of view is how the individual structures his own system internally and not some sort of composite structure averaged across both concepts and subjects which is tied to deviations from measures of group central tendency.

21

in line

system 80

to reflect

number 0

individual

the server

the control

mixing

discharge

factor 4

1

each side

measures

factor 1

variance

later to

degree

system

to extend

closed

the 80

scene

scene

scene

In this study, factor analysis will again be used, but along different lines. If people differ in belief-disbelief system structure or cognitive structure, these differences should be reflected in the ways they use semantic differential scales to order concepts or sources. Factor analysis of a single individual's semantic differential data matrix should reflect the several different ways he uses the scales to evaluate the concepts (or sources). Each predominant, different ordering of the concepts (or sources) would be reflected in a separate factor. Comparisons among number and kind of factors thus obtained from each person could then be made.

In this kind of analysis, the structure derived for each subject would be tied to deviations from his own measures of central tendency and not from the group's. The factor structure for a person would be due only to the variance among concepts (or sources) for that individual.

The second difficulty with the Wozniak study is related to his interpretation of Rokeach's theory. The differing degrees of differentiation of parts in open and closed systems led him to predict a greater number of factors to explain the variance for the open group than for the closed group. In other words, when he puts all concepts in the factor analysis regardless of whether they were from either the belief or disbelief system, he assumes that the theory predicts open and closed systems differ per se

in the

in the

different

directly

in the

in the

different

in the

in the

closed

relative

relative

in the

theory

relative

in the

in the

in the

in the

in the

in the

in the

in the

in the

in the degree of differentiation of parts.

However, it seems reasonable to make a somewhat different interpretation of what the theory predicts, consistent with that previously outlined (Rokeach, 1960). In all belief-disbelief systems, there is the tendency for the sub-systems of the disbelief system to decrease in differentiation the closer each is located to the disbelief end. This tendency will be termed here as "de-differentiation" of the belief-disbelief continuum. One way that open and closed systems differ is in the degree of de-differentiation relative to the belief system which occurs within the disbelief system. Diagrammatically, the present interpretation is outlined in Table 1. The differences generated by the theory are of an interactional nature. The method of examining the differences in differentiation used by Wozniak, in effect, examines it only as a simple effect of openness or closedness of the entire belief-disbelief system. It should be examined as an interaction effect. Although there is a suggestion of a main effect, it would be small and probably not statistically significant. A more appropriate way to test this proposition would be to separate the concepts representing elements of the belief system from the concepts representing elements of the disbelief system. Then two matrices for each individual would be separately factor

Page 1

0
2
0
3

Analysis

The 1915

Analysis

The 1915

for 1915

Analysis

1915

1915

1915

1915

1915

1915

Table 1. Differential Differentiation Within Belief and Disbelief Systems for Open and Closed Systems

	<u>Belief-Disbelief Dimension</u>	
	<u>Belief System</u>	<u>Disbelief System</u>
Open Systems	Relatively High Differentiation	Medium Differentiation
Closed Systems	Relatively High Differentiation	Relatively Low Differentiation

analyzed. The prediction would be that for open subjects, the difference between the number of factors required to explain the belief matrix and the number required to explain the disbelief matrix would be less than the similar difference for closed subjects (using the Kiel-Wrigley criterion to stop rotating factors).

Brief Review of Related Research

The traditional uses of factor analysis in psychology were designed to allow the investigator to isolate fundamental mental abilities, psychological dimensions, and personality dimensions. The technique emerged from a search for an all-encompassing single common factor, Spearman's G, to multiple factor explanations of psychological and personality dimensions (Guilford, 1954; Thurstone, 1957; Harmon, 1960;

Cattell, 1952; Horst, 1955; Thomson, 1951). The factor analyses were of tests. It was assumed that the factors derived from clusters of tests were representative of psychological dimensions which cut across people on which each person could be located. Osgood's use of the factor analytic model grew out of this tradition.

Stephenson (1953) and McQuitty (1964, 1966) took a different approach in characterizing the psychological make-up of people in the way they used factor analytic and clustering models. They argue that it is not a single test score that is the most important in explaining psychological processes of individuals but that what is most important is the profile or pattern of scores that a person has on a number of "tests" or items. Their approach is to cluster people on the basis of the similarity of profile or pattern of response to a number of items. Stephenson continued to use the factor analytic model but used people as variables instead of tests as in the more traditional uses. McQuitty developed a whole new set of clustering devices collectively called pattern analytic methods. He prefers non-linear indices of association between persons to the linear correlational measures. If items are developed for use with these methods which represent elements of the belief-disbelief system and persons are asked for their degree of endorsement

of the

deletion

control

structure

systems

effect,

2

method a

data man

factor a

factor a

terminal

the use

regard

psychol

single

analysis

effect

factor

effect

effect

effect

effect

of them, people can be grouped by the similarity of their hierarchies of acceptance of these elements. These techniques can help to investigate certain kinds of structural and/or content characteristics of belief-disbelief systems related to source credibility (MacLean, Danbury, Talbott, 1963).

Kelly (1955) comes very close to using a clustering method as is proposed here. His repertory test generates a data matrix for each subject. He developed a non-metric factor analytic technique for explaining the matrix. The factors thus developed are considered by him to be representative of the psychological space of the individual. In the use of factor analysis as proposed here, one could retain Osgood's notion of semantic space (similar to Kelly's psychological space), but it would be the space of only a single individual and not some kind of group average.

Ware (1958), a colleague of Osgood's, did do factor analyses on an individual basis of a typical set of semantic differential scales (20) and concepts (31, e.g., sex, mother, baby, snow, etc.). He had hoped to find sex and IQ differences in several measures of diversity of factor structure he had developed. He found none. Osgood (1963) comments: "But one should never give up a good hypothesis without a fight, and I still think there ought to be a re-

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

lation between intelligence and completeness of utilization of the semantic space." One would not expect sex or IQ differences for all concepts. Ware used high school students and it is just possible that the sample of concepts he selected were ones which were generally ambiguous for this age group regardless of either sex or IQ.

Todd and Rappoport (1964), working in the area of person perception, suggest that factor analysis of data matrices derived from single persons may have utility in the examining the way people perceive other people. Hays (1958) developed a procedure similar to factor analysis in which groups perceived characteristics of persons which are mutually implicative. His procedure is like an oblique factor analysis for ordinal data. Todd and Rappoport contrasted the use of factor analysis with the Hays procedure as means of characterizing the way people perceive other persons on a very small number of persons in a highly exploratory fashion. They were sufficiently encouraged with this approach that they expected to use it in more theoretically based studies. McQuitty (1953) has also used factor analysis in a way similar to that proposed here in a study of personality integration. In it, McQuitty factor analyzed data matrices obtained from a single subject as a means of assessing aspects of personality integration.

Re-Analysis of Some of Wozniak Study Data

Some of Wozniak's data were re-analyzed along the lines suggested here (Talbott, 1964). To apply the notions directly, two groups of concepts would be needed. One group would be associated with the belief end of the belief-disbelief continuum and the other with the disbelief end. Wozniak used only 19 concepts. This is too few concepts to separate them into two such groupings. Also, Wozniak had no measure to sort out which end of the continuum to associate with each concept. Hence, individual factor analysis can not be used to investigate the differentiation differences between belief and disbelief sub-systems which Rokeach suggests are among the defining differences between open and closed individuals.

However, another hypothesis was suggested by Rokeach's belief system theory. The largest factor (in terms of variance accounted for) isolated by Osgood was typically the evaluative factor. It usually contained scales such as good-bad, kind-cruel, clean-dirty, and fair-unfair. Rokeach's theory states that the magnitude of rejection of the disbelief sub-systems along the disbelief continuum is relatively greater for closed system individuals than for open system individuals. The scales typically associated with the evaluative factor imply the notion of rejection. As a consequence, closed



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

individuals are apt to have more scales which have a significant evaluative component than are open individuals. This would suggest that the evaluative factor for closed systems would be larger than for open systems. Since the evaluative factor most typically is found to be the largest, the largest factor in the two, three, and four factor rotated solutions should be larger for closed systems than for open systems. The same prediction could be made for the one factor solution or the first principal axis factor.

The scheme in the re-analysis of the Wozniak data involved the separate factor analysis of the data matrices of 60 individuals from the Wozniak study: 1) the 20 individuals with the most open systems (the 20 lowest dogmatism scorers), 2) the 20 individuals with the most closed systems (the 20 highest dogmatism scorers), and 3) the 20 individuals nearest the median dogmatism score among all 241 subjects he used. Table 2 contains the dogmatism score average and range for each of the three groups. Scales were used for variables (40) and the concepts (19) for observations in computing the correlation matrix. Principal axis factors were extracted using unities as communalities followed by Varimax rotation.



11
12
13
14
15
16
17
18
19
20
21



It was predicted that the average amount of variance accounted for by the first principal axis factors in the individual factor analyses would be greater for closed system individuals than for open system individuals. In addition, the same basic prediction was made for the largest factor (most variance accounted for) in the two, three, and four factor Varimax rotations. The results are contained in Table 3.

The average amount of variance accounted for by the first principal axis factors in the individual factor analyses was reliably larger for closed system than for open system individuals. Also, support was found for the hypotheses regarding the largest factor in the two and three rotated factor solutions but not for the fourth. However, although not reliable at the .05 level, the differences displayed in the four factor solution were in the direction of the prediction.

In selecting the scales to be used, Wozniak selected those which were representative of the factors which Osgood et al. had isolated in their factor analytic studies. Five scales were chosen to represent the evaluative factor. The number of times these scales had their highest loadings on the largest (accounted for the most variance) factors for

Table 2. Mean
With

Open

Open

Medium

Closed

Note--Wozniak

Table 3. Sim
the Proportion
in the One (1)
Four Factor

Proportion of

First Principal
Factor

Largest Fac
Factor Vari

Largest Fac
Factor Vari

Largest Fac
Factor Vari

Table 2. Mean and Range of Dogmatism Scores Associated With Three Dogmatism Groups.

Group	Mean Dogmatism Score	Range
Open	115.75	91-128
Medium	156.05	155-157
Closed	191.95	183-202

Note--Wozniak used the 40-item Form E scale.

Table 3. Simple Randomized Analysis of Variance Results for the Proportion of Variance Accounted for by the Largest Factor in the One (First Principal Axis Factor), Two, Three and Four Factor Rotated Solutions

	Mean Proportion of Variance Accounted For:						
	Open		Medium		Closed		p
Proportion of Variance	<u>Mean</u>	<u>s.d.</u>	<u>Mean</u>	<u>s.d.</u>	<u>Mean</u>	<u>s.d.</u>	<u>value</u>
First Principal Axis Factor	.256	.058	.302	.063	.304	.056	.05
Largest Factor: Two Factor Varimax Rotation	.237	.056	.275	.065	.276	.056	.05
Largest Factor: Three Factor Varimax Rotation	.215	.047	.249	.055	.249	.044	.05
Largest Factor: Four Factor Varimax	.213	.055	.238	.067	.250	.062	.10

and of the to
the three fact
are tabulated
that the large
solution of th
and closed sys
to the evaluat
for the open
explanation of
and the large
larger for c

The p
differences
persons and
asked to ev
tion bi-po
of sources
distelief
The two se
subject an
source ev
difference

each of the twenty people in the three dogmatism groups on the three factor rotated solutions was counted. The results are tabulated in Table 4. This informal analysis suggests that the largest factors isolated in the three factor solution of the individual factor analyses for the medium and closed system individuals were more likely to be similar to the evaluative factor isolated by Osgood than they were for the open system individuals. This result supports the explanation given as to why the first principal axis factor and the largest factor in the rotated solutions should be larger for closed systems than for open systems.

Present Study

The present study investigates some of the possible differences in the dimensions of source evaluation across persons and for different kinds of sources. Subjects are asked to evaluate two sets of sources on the source evaluation bi-polar adjective scales developed by Berlo. One set of sources is associated with the belief end of the belief-disbelief continuum and the other set with the disbelief end. The two sets of source evaluation data obtained from each subject are factor analyzed individually. The dimensions of source evaluation thus obtained are examined both for differences between the two kinds of sources and for their

relationship to
defining chara
focuses on the
the two types of
(high dogmatic
systems (low d
system to descr
the disbelief
formation sour
disbelief sys
should be org
the belief-di
associated.
derived dire
Stated in ge

I. 7

II.

relationship to dogmatism. Rokeach, in delineating the defining characteristics between open and closed systems, focuses on the differences in the way the belief systems of the two types are structured or organized. Closed systems (high dogmatics) exhibit a greater tendency than do open systems (low dogmatics) for the sub-systems of the disbelief system to decrease in differentiation the closer each is to the disbelief end of the belief-disbelief continuum. If information sources can be viewed as elements of the belief-disbelief systems, then the evaluations of these sources should be organized in a way that is similar to that part of the belief-disbelief systems with which the sources are associated. The two main hypotheses for this study were derived directly from Rokeach's belief system theory.

Stated in general form, the hypotheses are:

- I. The number and/or differentiation of the dimensions of source evaluation will be greater for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.
- II. The difference between the number and/or differentiation of the dimensions of source evaluation for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems than for open systems.

File 4. The
Had
the

Good-

Heave

Kind-

Clear

Fair

Aver
time
had
on t

Table 4. The Number of Times each of the Evaluative Scales Had its Highest Loading on the Largest Factor for the Three Dogmatism Groups

	<u>Closed</u>	<u>Medium</u>	<u>Open</u>
Good-bad	17	17	11
Heavenly-hellish	18	16	9
Kind-cruel	19	19	14
Clean-dirty	17	16	14
Fair-unfair	19	17	15
Average number of times the five scales had highest loadings on the largest factor	18.0	17.0	12.6

Comparison
evaluation and
Ratio are made
processes are c

III. r

e

n

IV.

It is
of the limit
the dimension
evaluation a

Comparisons between the individual dimensions of source evaluation and the dimensions of source evaluation isolated by Berlo are made. The following two informal general hypotheses are offered to facilitate these comparisons:

- III. The nature or kind of dimensions of source evaluation used for the sources associated with the belief end of the belief-disbelief continuum will differ from those used for sources associated with the disbelief end.
- IV. Closed systems will differ from open systems in the nature or kind of dimensions of source evaluation used.

It is hoped that this study will indicate what some of the limits may be on the generality of the construct of the dimensions of credibility or dimensions of source evaluation as explicated by Berlo and his colleagues.

Briefly:

Execution of t

1) Se
st
wh
ea

2) E:
se
di
(.

3) F
(
C
e
v
t

4)

5)

6)

The data p
first phas
sources to

CHAPTER II

STUDY DESIGN AND METHODOLOGY

Introduction

Briefly summarized, the major tasks involved in the execution of this study were as follows:

- 1) Selection of a set of 48 sources which can be split into two groups on the basis of with which end of the belief-disbelief continuum each is associated.
- 2) Evaluation by a group of subjects of the 48 sources using the source credibility semantic differential scales (34) used by Berlo et al. (1966) in his public sample.
- 3) Formation of two data matrices for each subject (24 sources-- rows, 34 scales--columns) with one containing the sources associated with the belief end and the other containing sources associated with the disbelief end of the continuum; and then, factor analysis of each separately.
- 4) Construction of the indices which purport to measure the dependent variables.
- 5) Classification of the subjects in terms of dogmatism.
- 6) Statistical analysis of the relationship among the dependent variables and the two independent variables.

The data for this study were gathered in two phases. The first phase or pretest study consisted of selecting the 48 sources to be used in construction of the main instrument.

This was done
the sections of
communication
for the second
listed during
from five con
the main stu
sources sele
administerin
ground info
the second
evaluations

Brief
assembled.
persons.
represente
acquaintan
of governm
law enforc
were selec
from the u

This was done Spring term, 1967, using college students from two sections of an introductory course in the Department of Communication at Michigan State University. The data gathering for the second phase or main study consisted of two parts conducted during Summer term, 1967, using student volunteers from five communication courses at MSU. The first part of the main study represented a validation of the sample of sources selected in the pretest using different students, administering the dogmatism scale and obtaining some background information on each student. The data gathering for the second part consisted of obtaining the semantic differential evaluations of the selected sources.

Pretest: Selection of Sources

Brief descriptions of 123 possible sources were assembled. Care was taken to include a wide variety of persons. Some of the categories of sources deliberately represented included family, personal friends and acquaintances, political figures, religious leaders, heads of government, newsmen, social protesters, military figures, law enforcement officials, communists, and others. Sources were selected to represent various degrees of remoteness from the usual college student's range of experience. Also,

was taken

the descripti

while others

appropriate, a

Fifty-

Spring, 1967,

Communication

evaluate the

9-point scale

9 - ha
no

8 - v

7 - h
f

6 - c

5 - c
c
a

4 -

3 -

2 -

1 -

For a list

way response

questionnaire

care was taken to represent a variety of cultures. Some of the descriptions included the name of the person described, while others did not. For some, a specific name was not appropriate, e.g., my best friend, my mother, etc.

Fifty-three (53) students from two sections of the Spring, 1967, class, Communication 100, Department of Communication, Michigan State University, volunteered to evaluate the 123 descriptions of persons on the following 9-point scale:

- 9 - has beliefs and ideas extremely different from my own
- 8 - very much different
- 7 - has beliefs and ideas quite a bit different from my own
- 6 - only slightly different
- 5 - can't decide or has about the same amount of beliefs and ideas which are like my own as are different from my own
- 4 - only slightly like
- 3 - has beliefs and ideas quite a bit like my own
- 2 - very much like
- 1 - has beliefs and ideas extremely like my own.

For a list of the items (descriptions of persons), and the way respondents were asked to evaluate them, see the questionnaire in Appendix A.

The means and standard deviations for each of the 123 items averaged across the 53 subjects will be found in Appendix B, ordered from those having beliefs and ideas judged "most different from my own" to "those most like my own." There was considerable variation in the means. There would be no particular difficulty encountered if one wished to order the person descriptions by the mean rating on the scale.

Individual scale marking tendencies were examined also. Twenty-seven of the fifty-three subjects used all nine marking positions of the scale. Twenty-one more used eight marking positions. About ninety percent of the subjects used either all or all but one of the nine positions on the scale. Only four of the fifty-three subjects used seven of the nine positions and only one subject used as few as six positions. No one used fewer than six positions. Table 5 shows which marking positions on the scale were not used when not all nine positions were utilized. From examination of the table, it is apparent that scale position 1 or "has beliefs and ideas extremely like my own" was by far the least often used. This analysis shows that almost all of the subjects used all or nearly all of the possible range of the rating scale.

Table 5. Source
Not

One scale po
not used

Two scale p
not used

Three scale
not used

Table 5. Source Belief-Disbelief Rating Scale Positions
Not Used When Not All Nine Were Marked

	<u>Scale Positions Not Used</u>	<u>No. of cases Involved</u>	<u>Percent of Total Cases</u>
One scale position not used	1	19	73.08
	2	1	3.85
	6	1	3.85
- - - - -			
Two scale positions not used	1 and 3	1	3.85
	1 and 4	1	3.85
	1 and 9	2	7.69
- - - - -			
Three scale positions not used	1, 6 and 7	1	3.85
Total cases		26	

To get
subjects agree
persons, a 51
correlating a
descriptions
then submitte
titles in the
The analysis
Approximately
accounted for
on the first
This suggests
most of the
description

The
unambiguous
on the basis
rotated so
criterion
is one su
variance
clusters
for three
loadings

To get further information on the degree to which subjects agreed in the way they assigned scale ranks to the persons, a 53X53 matrix of correlations was formed by correlating each subject's set of ratings on the 123 descriptions with every other subject's. This matrix was then submitted to a principal axis factor analysis with unities in the diagonals, followed by a Varimax rotation. The analysis yields essentially a one-factor solution. Approximately forty-six per cent of the variance was accounted for by the first principal axis factor. Loadings on the first principal axis factor are summarized in Table 6. This suggests that there was considerable agreement among most of the subjects on the ratings assigned the 123 person descriptions.

The Varimax rotations were examined to determine how unambiguously the 53 subjects could be classified into groups on the basis of rotated factor loadings. The two factor rotated solution yielded the best results in terms of this criterion (see Table 7). In the two factor solution, there is one substantial factor (accounting for 41% of the total variance and 76% of the common variance) which rather clearly clusters forty-one of the fifty-three subjects. The loading for three subjects are split between both factors (both loadings in the .40's or .50's). Only nine of the fifty-three

Table 6. Frequency Distribution of Loadings on the First Principal Axis Factor

<u>Magnitude of the loading</u>	<u>No. of Subjects</u>	<u>Per cent of all Subjects</u>	<u>Cumulative Percentage</u>
.80's	11	20.8	20.8
.70's	16	30.2	51.0
.60's	9	17.0	68.0
.50's	7	13.2	81.2
.40's	2	3.8	85.0
.30's	5	9.4	94.4
.20's	2	3.8	98.2
.10's	1	1.9	100.1

Table 7. Factor Analysis of the Fifty-three Subjects' Ratings of the Sources (0,3 Variables, 123 Observations): Factor Loadings for the Two Factor Varimax Rotated Solution and the First Principal Axis Factor

Table 7. Factor Analysis of the Fifty-three Subjects' Ratings of the Sources (53 Variables, 123 Observations): Factor Loadings for the Two Factor Varimax Rotated Solution and the First Principal Axis Factor

<u>Subject Number</u>	<u>Factor 1</u>	<u>Factor 2</u>	<u>Communality</u>	<u>Factor Assigned</u>	<u>First Principal Axis Factor</u>
1	0.7740	0.1423	0.6194	1	.7758
2	0.6697	0.1593	0.4738	1	.6836
3	0.5987	-0.1723	0.3882	1	.5031
4	0.5330	0.1555	0.3083	1	.5540
5	0.6157	0.2847	0.4602	1	.6760
6	0.7689	0.0075	0.5913	1	.7247
7	0.4487	0.5437	0.4970	Split	.6082
8	0.8598	0.0962	0.7486	1	.8405
9	0.8065	0.2175	0.6978	1	.8322
10	0.7296	0.0923	0.5409	1	.7169
11	0.7024	0.1933	0.5307	1	.7260
12	0.8489	0.0713	0.7258	1	.8218

Subject Number	Factor		Commonality	Factor Assigned	Factor for Total Pay	
	1	2			Factor	Pay
13	0.2607	0.7256	0.5944	2	.4941	
			0.6131	1	.7794	
						.8030

Table 7--continued

<u>Subject Number</u>	<u>Factor 1</u>	<u>Factor 2</u>	<u>Communality</u>	<u>Factor Assigned</u>	<u>First Principal Axis Factor</u>
13	0.2607	0.7256	0.5944	2	.4941
14	0.7576	0.1979	0.6131	1	.7794
15	0.8201	0.0956	0.6817	1	.8030
16	0.8306	0.1650	0.7172	1	.8368
17	0.5583	0.0451	0.3138	1	.5398
18	0.7869	0.2947	0.7060	1	.8402
19	0.6313	0.1681	0.4268	1	.6507
20	0.6326	0.1949	0.4381	1	.6610
21	0.6719	0.2394	0.5087	1	.7132
22	0.5445	0.2039	0.3380	1	.5814
23	0.4092	0.2857	0.2490	1	.4824
24	0.6229	0.2350	0.4432	1	.6657
25	0.7139	0.2937	0.5959	1	.7713
26	0.8843	0.1827	0.8154	1	.8933
27	0.0497	0.4954	0.2479	2	.2169

Table 7--continued

Subject Number	Factor 1	Factor 2	Communality	Factor Assigned	First Principal Axis Factor
28	0.1298	0.7733	0.6149	2	.3876
29	-0.1036	0.7021	0.5037	2	.1439
30	0.1211	0.7431	0.5669	2	.3691
31	0.7786	0.3033	0.6982	1	.8354
32	0.6196	0.3070	0.4781	1	.6873
33	0.5587	0.2155	0.3586	1	.5987
34	0.5209	0.4374	0.4627	Split	.6395
35	0.6863	0.1914	0.5077	1	.7103
36	0.7365	0.2875	0.6251	1	.7905
37	0.7140	0.1660	0.5374	1	.7276
38	0.1544	0.7119	0.5307	2	.3896
39	0.7688	0.1725	0.6208	1	.7812
40	0.8246	0.0556	0.6831	1	.7935
41	0.4752	0.2239	0.2759	1	.5232
42	0.2340	0.4582	0.2647	2	.3772
43	0.7877	-0.2787	0.6981	1	.6440

<u>County</u> <u>Number</u>	<u>Page</u> <u>Number</u>	<u>Page</u> <u>Number</u>	<u>Page</u> <u>Number</u>	<u>Page</u> <u>Number</u>	<u>Page</u> <u>Number</u>
44	0.7812	0.1453	0.6314	1	.7836
45	0.7241	0.4102	0.6926	1	.8210
				1	.8284

Table 7--continued

Subject Number	Factor 1	Factor 2	Communality	Factor Assigned	First Principal Axis Factor
44	0.7812	0.1453	0.6314	1	.7836
45	0.7241	0.4102	0.6926	1	.8210
46	0.8381	0.1381	0.7106	1	.8284
47	0.7970	0.2148	0.6813	1	.8223
48	0.7080	0.1780	0.5329	1	.7260
49	0.4165	0.5596	0.4866	Split	.5834
50	0.6489	0.3858	0.5699	1	.7419
51	-0.0068	0.7717	0.5956	2	.2587
52	0.7567	0.2114	0.6173	1	.7833
53	0.1348	0.6826	0.4840	2	.3611
Total Variance	41.2%	13.0%	54.2%		45.5%
Common Variance	76.0%	24.0%	100.0%		100.0%

subjects are

Factor

(first principal

The method of

and Talbott,

1) Ea

is

the

of

2) T

t

2

3)

4)

The factor

than the

rankings

the subje

should be

weights w

factor an

in fact f

subjects are associated clearly with the second factor.

Factor scores were computed for both the one factor (first principal axis factor) and the two factor solution. The method of computation was as follows (MacLean, Danbury, and Talbott, 1964; Creaser, 1955):

- 1) Each subject is assigned to a factor only if it can be done unambiguously (loading must be high on the factor with no secondary loadings of consequence on the other factor).
- 2) The loading of only the assigned subjects are transformed to factor weights by the following formula:

$$W_i = \frac{F_i}{(1 - F_i^2)}$$

Where: W_i is the weight of the i th variable; F_i is the loading of i th variable on the factor being estimated.

- 3) The factor scores for each factor then are computed by applying the factor weights to the standard scores of the raw data for only the subjects assigned to it.
- 4) The weighted factor scores for each factor then are converted to standard scores.

The factor scores for a given factor, then, are nothing more than the distribution of the weighted average standardized rankings given each of the 123 person descriptions by only the subjects unambiguously associated with the factor. It should be noted that this method does not use the factor weights which are directly derivable from the general factor analytic model. If the clusters of variables do in fact fall very close to the reference vectors constructed

by application of the factor analytic model, the factor scores obtained by this approximate method and the formally derived ones will be very nearly the same. If the clusters do fall some distance from the reference vectors, then the approximate method employed here will tend to produce correlated factor scores instead of orthogonal ones. This is because the approximate method uses only information about central tendencies of the group clustered and ignores completely its relationship to the other clusters. The formally derived factor weights take into account both kinds of information and hence the factor scores are uncorrelated or orthogonal. The primary interest here was to represent each group central tendency as closely as possible, hence the approximate method was selected.

As can be noted in Table 8, the first principal axis factor cannot be distinguished from Factor 1 (the largest) in the two factor rotated solution. Factor 2 is substantially correlated with each of them. Examination of the factor score differences between Factor 2 and each of the other two factors shows that there are only 22 items out of the 123 for which the difference between standard scores exceeds one standard deviation. There are no items for which such differences exceed two standard deviations. The standard scores for all three factors are reported in Appendix C.

Table 8. Co
Pr
Fa

1

2

3

Table 8. Correlations among Factor Scores for First Principal Axis (1st PA) Factor and the Two Factor Varimax Rotated Solution (2-FS)

1)	1st PA.	---		
2)	2-FS: 1	.998	---	
3)	2-FS: 2	.764	.725	---
		1	2	3

From examining

between Fact

easily concl

literal bent

Factor

left wing typ

are more like

The kinds of

beliefs less

factors are

director of

used as right

that would b

would be sma

it was deci

in terms of

beliefs cou

a single fa

This means

one rank or

taken into

pretest stu

Fact

axis factor

From examination of the small differences that do exist between Factor 2 and the other two factors, one could easily conclude that students of factor 2 were of a more liberal bent than those on the other factors.

Factor 2 students perceive social protesters and some left wing types of persons as having beliefs and ideas which are more like their own than do students on the other factors. The kinds of persons Factor 2 students perceive as having beliefs less like their own than students on the other factors are some prominent republicans, military leaders, director of the FBI, and other persons usually characterized as right of center politically. Since the refinements that would be introduced by going to a two factor solution would be small and the complexity of analysis very great, it was decided that the ratings of the person descriptions in terms of similarity of their beliefs with subjects' own beliefs could be essentially and adequately represented by a single factor solution (first principal axis factor). This means that in selecting the source descriptions, only one rank order in terms of belief similarity needs to be taken into account for the students participating in the pretest study.

Factor scores were computed for the first principal axis factor in three additional ways. First, the simple

means were computed across the 53 students for each of the 123 items using the raw data. Second, the simple means were computed across the 53 students on each item using the raw data transformed to standard scores. The third other method used the factor weights derived from the model. In this particular situation, factor scores computed by any one of the four methods were not interpretably different from each other (see Table 9). Since the simple means of the raw data were the easiest and least time-consuming to compute and interpret, it was decided to use them to select the two sets of sources, each to be associated with different ends of the belief-disbelief continuum. The means of the belief ratings of the 123 person descriptions were rank ordered (see Appendix B). The top twenty-four person descriptions (largest means) were defined as sources associated with the disbelief end of the belief-disbelief continuum. And conversely, the bottom twenty-four person descriptions were defined as the sources associated with the belief end of the belief-disbelief continuum. See Appendix D for a list of the source descriptions thus selected.

Selection of Source Credibility Semantic Differential Scales

Since one of the main purposes of this study was to investigate the generality of the source credibility dimensions of the Berlo results, it was decided to use his semantic differential scales in order to facilitate comparisons. His results showed that one scale had a very low communality (objective-subjective). This scale was therefore dropped. Hence, thirty-four of Berlo's original thirty-five scales were selected for use in this study. The Berlo data were re-factor analyzed deleting the objective-subjective scale. The resulting factor matrix will be found in Appendix E. This minor refinement resulted in no changes in the previous interpretation of the factor analysis results.

Main Study: Participants

Participants for the main study were volunteers from five courses of the Department of Communication, Michigan State University, taught during the 1967 summer term. The names and enrollments of the five courses are in Table 10. Students were not required to participate, but were encouraged to do so by the instructors. Special credit was given to students who did participate in the project. The background information obtained from the volunteers from the five classes is contained in Table 11.

Table 9. Correlation Table among the Factor Scores for
the First Principal Axis Factor Computed by
Four Methods

1) derived factor weights	-----			
2) approximate factor weights	.99963	-----		
3) simple means of standardized data	.98735	.98429	-----	
4) simple means of raw data	.99113	.98897	.99932	----
	1	2	3	4

Table 10. Communication Courses Participating in Main Study

<u>Course</u>	<u>Summer Term</u>	<u>Enrollment</u>
Communication 100	First Five Week	39
Communication 100	Ten Week	54
Communication 300	First Five Week	28
Communication 300	Ten Week	19
Communication 470	First Five Week	12
TOTAL		152

1

Table

Page

337

Ho

32
30
29

Table 11. Background Information N = 133

Item	Response	Percentage
Sex	male	60.9%
	female	37.6
	no answer	1.5
Year in School	freshman	15.0%
	sophomore	12.0
	junior	22.6
	senior	42.9
	graduate	6.8
	no answer	0.8
Age	17	2.3%
	18	12.0
	19	9.0
	20	18.0
	21	18.0
	22	14.3
	23-24	8.3
	25-27	7.5
	28-30	4.5
	31-49	5.3
	no answer	0.8
Marital Status	married	24.8%
	single	73.7
	no answer	1.5
Estimated Parent's Total Income Last Year	under \$3,000	0.8%
	3,000 to 4,499	4.5
	4,500 to 5,999	5.3
	6,000 to 7,999	12.0
	8,000 to 9,999	15.0
	10,000 to 14,999	26.3
	15,000 to 19,999	12.0
	20,000 to 29,999	10.5
	30,000 and over	7.5
	no answer	6.0
How do you consider yourself politically?	conservative	26.3%
	neither	32.3
	liberal	37.6
Have you traveled in a foreign country outside the United States and Canada?	yes	32.3%
	no	65.4
	no answer	2.3

Main Study: Validation of Sample of Sources

The sample of sources was based on ratings from a different set of subjects than would be used for the main study. The pretest used student volunteers from the regular school year. The main study was to use students attending summer sessions. The sources selected from the one set of subjects should be validated for the second set. The forty sources rated with "beliefs and ideas most different from my own" and the forty sources rated as "most similar to my own" by the regular school year students were again rated by the summer school students using the same rating scale.

Tables 12 and 13 very readily show the high degree of similarity between the relative orders of the belief-disbelief mean ratings for the two groups or students. The orders of the means for two groups did not differ greatly, but what about the magnitude of the means themselves? Independent groups t-tests were run comparing the means for the two groups of students on each of the 80 source mean ratings. There were differences for only 8 of the 80 pairs of means. From such results, it seemed reasonable to use the sample of sources selected using the spring group for the summer group.

The background data reported earlier was collected at

the same time as the above validation data. Also administered at the same time was the dogmatism scale.

Appendix F contains the questionnaires used to obtain the validation data, the background information, and the dogmatism score.

Construction of Source Evaluation Instrument

The basic instrument for obtaining data for assessing the individual dimensions of source evaluation (credibility) basically consists of the semantic differential evaluation on a 9-point scale of the forty-eight sources (twenty-four associated with each end of the belief-disbelief continuum) using the thirty-four Berlo credibility adjective scales. The task required of a subject in responding to such an instrument would be substantial. Hence, certain procedures were followed with an aim toward both alleviating and distributing the fatigue effects involved in such a task.

The questionnaire was set up in typical semantic differential fashion, the source description at the top of the page (legal size) with the thirty-four scales double-spaced down the page. A different independent random order of scales was assigned to each of the forty-eight source descriptions. For each order, the polarity of the scales was independently randomized. Each questionnaire contained

Table 12. Correlations between Source Belief-disbelief
Mean Ratings of the Regular School Year
Students and the Summer Students

<u>Sample of Sources on which Correlation is Based</u>	<u>Rank Order Correlation of Means</u>	<u>Pearson P-M Correlation of Actual Means</u>
All 80 sources	.955	.983
40 sources having beliefs similar to my own	.774	.885
40 sources having beliefs different from my own	.870	.844
Selected sample of 48 sources	.945	.989
24 sources having beliefs similar to my own	.713	.861
24 sources having beliefs different from my own	.843	.771

Table 13. Quartile Crossed-Classification of the Mean
Ratings Given the 80 Sources by Regular School Year and
Summer Students (Number of Means = 80)

Regular School Year Students	Quartile	Summer Students			
		1 (similar)	2	3	4 (different)
	1 (similar)	18	2	0	0
	2	2	18	0	0
	3	0	0	19	1
	4 (different)	0	0	1	19

forty-eight pages of semantic differential scales with a different source description on each plus the instructions. The semantic differential portion of each questionnaire was assembled using a different independent random order. It was hoped that whatever serial effects of fatigue that might be present in completing the questionnaire would be randomly distributed across the scales, polarity of the scales, and the concepts. A computer program with a random number generator was used to generate the three independent randomizations needed in constructing the physical questionnaire. The questionnaires were to be coded as the scales appeared on each page from left to right (1-left, 9-right). The randomization program also output the parameters for another program, the purpose of which was to unscramble the random orders that would be involved in the coded raw data. For a sample page from the questionnaire along with the instructions, see Appendix G.

Subjects were instructed when they evaluated the person described with the scales to think of some communication situation in which the person could have something to say to them. The instructions further stated:

This could be a face-to-face conversation, a speech, something the person has written in a letter, newspaper, magazine, or other written document, news film on TV, or some other kind of

situation in which the person could communicate something to you. Also, the thing that the person would be communicating would be a reasonable thing for that person to be doing.

Obviously, the attempt here was to induce a set so that the subjects would use the scales to describe each person as a source in some kind of communication situation.

In order to decrease the probability that subjects would skip around in the questionnaire, and thereby defeat to some degree the purpose for which the randomizations were employed, subjects were specifically instructed to complete each page before going on to the next in serial order. Also, a complete list of the person descriptions was included in the questionnaire at the close of the instructions with specific instructions to look it over. Some skipping around would probably be prompted by wanting to know what kinds of persons are to be evaluated. Providing the list would help in this respect. Also, it was felt that subjects should have some idea of the range of the types of individuals before starting the task so that they could develop anchoring points for the ends points of the scales relative to the selected sources (person descriptions) very early in the evaluation process.

One other procedure was employed to reduce fatigue effects of the lengthy questionnaire. The questionnaire was

self administered in the residence of the participating student. The students were asked specifically not to complete the questionnaire in a single sitting. Rather, they were encouraged strongly in separate verbal instructions at distribution time to do them in several sittings, at least four, and more if possible. They were given two weeks in which to complete the task. Also, instructors in the participating classes gave student volunteers extra credit for participating in research projects.

Main Study: Source Evaluation Data

Approximately two weeks after the validation data for the selected sample of sources was obtained, the source evaluation questionnaire was distributed to student volunteers in the last 10 minutes of the participating classes. The completed questionnaires were to be turned in to the instructor. The turn-in date was set for approximately two weeks after distribution. It was decided that if a subject failed to respond to more than ten per cent of the sources or five pages, his questionnaire would not be included in the analysis. In all, 105 completed questionnaires were turned in from the five participating classes. Only two incomplete questionnaires had to be discarded. There were

only six additional questionnaires which had whole pages where the data were missing (3 with 1 page missing, 1 with two pages missing and 2 with 4 pages missing). Throughout the rest of the questionnaires, there was little problem of missing data for individual scales. There were no more than a dozen such instances. On the whole, the subjects seemed to have responded to the task in a serious and diligent manner. A missing response on usable questionnaires was coded as 5, the midpoint of the 9-point scale used. In addition, four more questionnaires had to be discarded because the dogmatism score was missing for them. In all cases, they were from students attending only the first five week summer session who could not be reached to obtain the missing score before they left the campus. After editing, there were 99 usable source evaluation questionnaires.

The data thus obtained by administration of this questionnaire forms a three dimensional data matrix or cube. It has 161,568 cells ($99 \times 48 \times 34$) with each containing the semantic differential evaluation score (ranging from 1 to 9) for one of the 99 subjects for one of the 48 sources on one of the 34 scales. A schematic of this cube of data is contained in Figure 1. The data for each subject (a vertical slice in the cube of data in Figure 1) were case in the form of two matrices of order 24 rows (sources) and



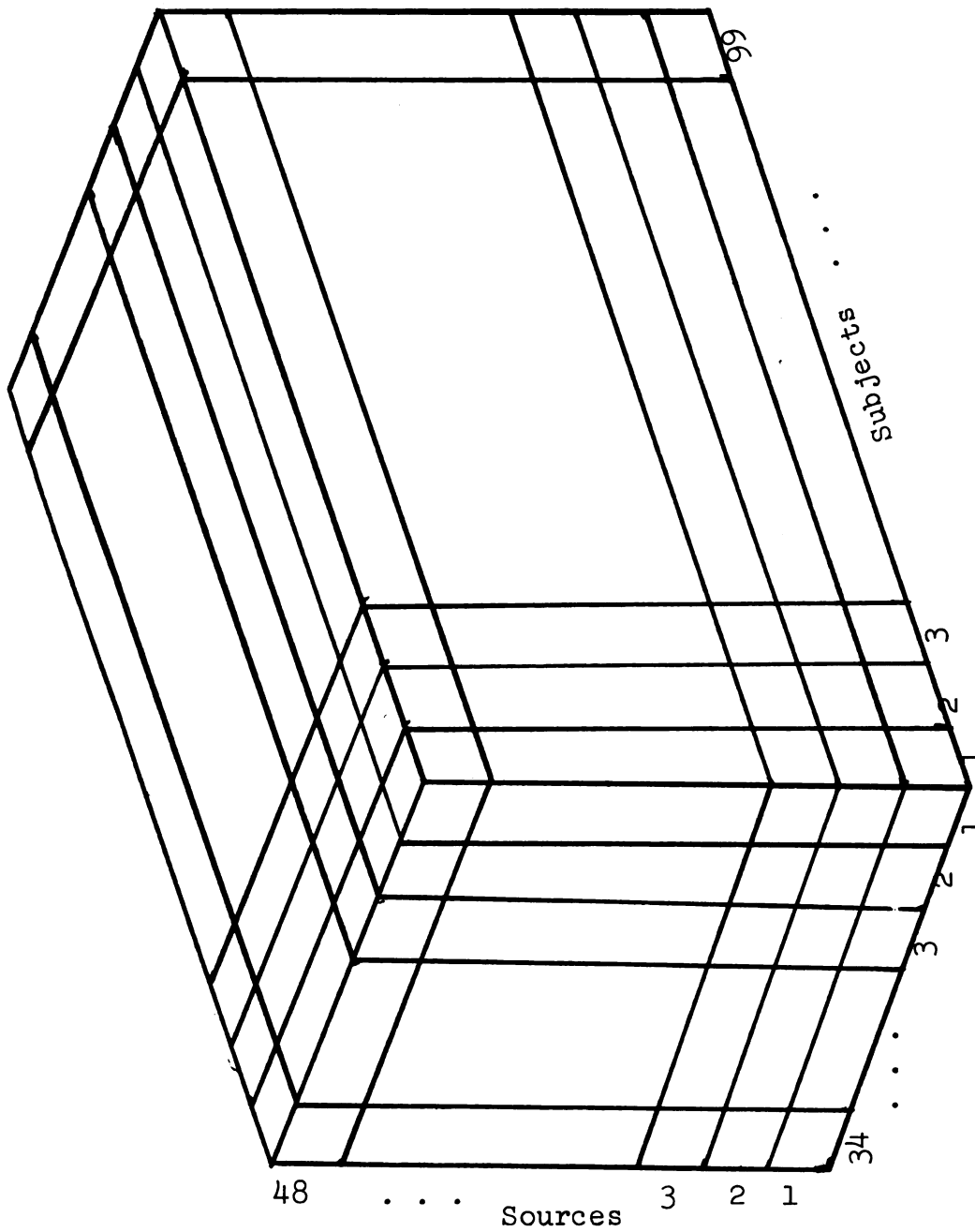


Figure 1. Schematic of the data generated by the source evaluation questionnaire cast in the form of a three dimensional matrix or cube.

34 columns (scales). One matrix contained the 24 sources judged to have beliefs and ideas most similar to subjects' own beliefs and ideas. The other contained the 24 sources judged to have beliefs and ideas most different from their own. Each such matrix was individually factor analyzed using the principal axis factor model with unities in the diagonal cells of the correlation matrix. This was followed by a Varimax rotation using the Kiel-Wrigley criterion equal to three to determine when to stop rotating the principal axis factors (Kiel, 1966; Kiel and Wrigley, 1960).

This made a total of 198 factor analyses, each 34 variable by 24 observations. The mode of rotation of the principal axis factors is that first the two largest principal axis factors are rotated to the Varimax simple structure criterion, then the three largest ones, and so on, incrementing each successive rotation by the next largest principal axis factor. The stopping point used, as indicated, was the Kiel-Wrigley criterion. When set at three, this criterion states that the optimal number of factors to be rotated is reached at the successive rotation just prior to the solution where one or more factors no longer have at least three variables which have their highest loading on it(them). In the solution which meets the criterion, each factor must have at least three

1

variables with their highest loadings on it. These 198 factor analyses provide data to operationalize and construct the dependent variables.*

Operationalization of the Dependent Variables for Hypotheses I and II

The list of operationalizations of the dependent variables for Hypotheses I and II (see Chapter I) called "the number and/or differentiation of dimensions of source evaluation" are the same. For a given operationalization of this variable, both hypotheses are tested by different effects in the same analysis of variance (specific ANOVA design will be covered in detail).

The number of dimensions of sources evaluation refers to the number of factors needed by some criterion to represent (by applying the factor analytic model) each of the 34X24 data matrices (two for each subject). Two different criteria are used to define two kinds of operationalizations of this

*Would the present data produce essentially the same results if it were analyzed in the same way that Berlo analyzed his data? Three factor analyses of the type Berlo used were performed for this data. One analysis included all data (34 variable, 4752 observations). A second analysis included data for the 24 belief sources and the third included data for the 24 disbelief sources (both 34 variable, 2376 observations). The results are reported in Appendix H. The results and conclusions possible from these analyses are highly similar to those of the Berlo analysis.

variable. The first kind of operationalization is the number of factors rotated in the factor analyses of the individual data matrices by applying the Kiel-Wrigley criterion set at three for termination of the rotation procedure. The other type of operationalization is derived from the amount of variance a specific number of factors accounts for. In other words, if the k-factor solutions for one group of sources or persons is consistently larger or smaller than for another, this will be interpreted as one group requiring a differing number of dimensions to explain the variation to the same degree. The larger the amount of variance extracted by the k-factor solution, the fewer the number of factors or dimensions needed to explain the variation associated with source evaluation. This is computed for the one (first principal axis factor), two, three and four factor solutions.

The differentiation of dimensions of source evaluation refers in this study to two kinds of characteristics of the factor structure emerging from the individual factor analyses. The more the variance explained by a given factor solution is distributed equally across all factors, the greater the differentiation of structure. In the case when the variance is distributed fairly equally across all factors, more relative explanatory power is lost when a factor other than

the largest is dropped from the solution than when the variance explained is heavily distributed on a single factor. The larger one factor is with respect to the others, the greater is the suggested tendency toward using fewer and broader categories of adjectives to describe the sources. One kind of index which should get at this aspect of differentiation is the size of the largest factor in the k-factor solutions. The size of the largest factor is indexed by the proportion of total variance in the rotated solution being considered accounted for by the factor. This index is computed for the two, three, and four factor rotated solutions.

The other aspect of differentiation to be applied in this study refers to notions of how many factors it takes to explain a given variable, or in this case an adjective scale. If, on the average, only one factor is needed to explain each adjective scale, this would index low differentiation. This would suggest that the scales had an all-or-nothing character, and hence would suggest low differentiation. If, on the other hand, it required two or more factors to explain the variance of the various adjective scale, this would index high differentiation. This would suggest less of an all-or-nothing character in the use of the adjectives in describing sources. Associated with each factor would be an ordering of sources. If an adjective scale was loaded on more than one

factor, this would mean that the scale was useful in more than a single context. This would suggest that as the situation varied so would the meaning attached to the adjective. This would indicate greater differentiation in the uses of the adjective scales in describing the sources. When each scale loads on a single factor, the opposite could be argued.

This all sounds like the notions of simple structure in factor analysis. The more a factor matrix tends toward simple structure, the greater the differentiation in the dimensions of source evaluation. Simple structure can be viewed as the degree to which the total variance associated with each variable on all the factors in the solution (communality) is accounted for by its loading on only one of the factors. It is indexed here by the proportion of common variance accounted for by the highest loadings for each variable. This index is computed for the two, three, and four factor rotated solutions.

To recapitulate, the following lists the various operationalizations of the dependent variables which are used to test Hypotheses I and II:

A. Number of dimensions of source evaluation

1. Number of factors rotated in the solution which meets the Kiel-Wrigley criterion when set at three

2. Proportion of total variance accounted for by the one factor solution or first principal axis factor
 3. Proportion of total variance accounted for by the two factor solution
 4. Proportion of total variance accounted for by the three factor solution
 5. Proportion of total variance accounted for by the four factor solution
- B. Differentiation of dimensions of source evaluation
6. Proportion of total variance accounted for by largest factor in the two factor rotated solution
 7. Proportion of total variance accounted for by largest factor in the three factor rotated solution
 8. Proportion of total variance accounted for by largest factor in the four factor rotated solution
 9. Simple structure index or proportion of common variance accounted for by each variable's (scale's) highest loading in the two factor solution
 10. Simple structure index or proportion of common variance accounted for by each variable's (scale's) highest loading in the three factor solution
 11. Simple structure index or proportion of common variance accounted for by each variable's (scale's) highest loading in the four factor solution.

Operationalization of Independent Variables

Two independent variables are used in the tests of the hypotheses. One is a within subjects classification or repeated measure. The other is a between subjects classification. The within subjects classification is identical to the classification of sources which was employed to define the two matrices that were factor analyzed for each subject. One matrix contained only sources which were perceived as associated with the belief end of the belief-disbelief continuum; the other matrix contained only sources associated with the disbelief end. The dependent measures derived from factor analysis of these matrices will be classified in terms of the kind of sources which comprises the matrix. The two levels of the independent variable "SOURCES" are: "belief" and "disbelief."

The between subjects classification is dogmatism. The specific measure of dogmatism used was the twenty item scale developed by Troldahl and Powell (1965). The actual questionnaire version of the scale used in this study is in Appendix F. The maximum possible score range was from 20 (low) to 120 (high). The frequency distribution of the dogmatism scores for the ninety-nine subject with usable source evaluation data is found in Table 14. Subjects were ordered on the total dogmatism score and trichotomized into

Table 14. Grouped Frequency Distribution of
Dogmatism Scores

<u>Score Interval</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative % high to low</u>	<u>Cumulative % low to high</u>
40-44	5	5.05%	99.99%	5.05%
45-49	11	11.11	94.94	16.16
50-54	15	15.15	83.83	31.31
55-59	18	18.18	68.68	49.49
60-64	26	26.26	50.50	75.75
65-69	12	12.12	24.24	87.87
70-74	8	8.08	12.12	95.95
75-79	2	2.02	4.04	97.97
80-85	1	1.01	2.02	98.98
86-90	1	1.01	1.01	99.99

three groups of equal size (group $N = 33$). Persons with scores exactly equal to the cutting points (55 and 63) were randomly distributed to the groups in order to equalize the group size. The mean dogmatism scores for the three groups are shown in Table 15.

Diagrammatically, the design is presented in Table 16. This design applies to both hypotheses. Analysis of variance is used, employing a mixed model having a nested classification (SUBJECTS) and a pair of classifications, one of which is between subjects (DOGMATISM) and the other within subjects (SOURCES). (For detailed explanation, see Winer, 1962; Lindquist, 1953.) The SUBJECTS classification is assumed random and DOGMATISM and SOURCES are assumed fixed. The source of variation table is contained in Table 17. The various specific statements of Hypotheses I and II for each specific operationalization of the dependent variable are tested in the same analysis of variance. Hypothesis I is tested by the SOURCES main effect. Hypothesis II is tested by the SOURCES X DOGMATISM interaction effect. An alpha level of .09 was established.

Operationalizations for Hypotheses III and IV

Hypotheses III and IV (Chapter I) are concerned with the nature or kind of dimensions of source evaluation used

Table 15. Mean Scores for Three Dogmatism Groups

<u>Dogmatism Group</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>N</u>
Open Systems (low)	49.18	3.98	33
Intermediate	59.16	2.59	33
Close Systems (high)	68.65	5.35	33
Across Three Groups	59.09	9.05	99

Table 16. Study Design

DOGMATISM	SUBJECTS	SOURCES: end of belief-dis- belief continuum group of sources factor analyzed is associated with	
		<u>Belief</u>	<u>Disbelief</u>
Open Systems (low)	1		
	2		
	...		
	33		
Intermediate (medium)	1		
	2		
	...		
	33		
Closed Systems (high)	1		
	2		
	...		
	33		

 Table 17. Analysis of Variance Source of Variable Table

<u>Source of Variation</u>	<u>Degrees of Freedom (df)</u>	<u>Critical F Values (alpha=.05)</u>
Between Subjects Effects	(98)	
Dogmatism (D)	2	3.11
Between Subjects (within Dogmatism cells) (errors for between Subjects effects)	96	
Within Subjects Effects	(99)	
Sources (S)	1	3.96
Sources X Dogmatism (SXD)	2	3.11
Sources X Subjects (with Dogmatism cells) (error for within Subjects effects)	96	
Total	198	

by the three dogmatism groups for the two kinds of sources (associated respectively with either the belief or disbelief end of the belief-disbelief continuum). The primary focus of this analysis will be on the degree to which the individual factor solutions both for groups of subjects and for groups of sources, correspond to the results obtained by Berlo in his Lansing area general public sample. The two hypotheses are offered to facilitate such comparisons. It is emphasized that the comparisons implicit in these two hypotheses (III and IV) are admittedly more informal and less systematically derived from the theoretic base than are the other two hypotheses (I and II). Hypotheses I and II are primarily concerned with structural aspects of dimensions of source evaluation and provide little insight into the content of these dimensions. The intent is that Hypotheses III and IV will probe into the content of the dimensions. The latter is an important, pragmatic aspect of the generality of the construct of credibility or source evaluation as formulated by Berlo.

The same independent variables as were used with Hypotheses I and II are used with Hypotheses III and IV. These include three levels of dogmatism (high, medium, and low) and two levels of sources used for separate individual

factor analyses (sources associated with the belief end of the belief-disbelief continuum and sources associated with the disbelief end). In some of the more informal comparisons, they will function more as control variables than as independent variables in the usual sense.

The question to be attacked is basically: "To what extent do the factors in the individual analyses resemble the results obtained by Berlo?" Since the scales used in the individual factor analyses were identical to the ones used by Berlo, the three factor rotated solution from each computing the index of factorial similarity (Harmon, 1960) between every possible pair of factors in the two solutions. Each of the Berlo factors was matched with the factor in the individual solution with which it had the highest index of similarity. With this matching, it was possible for two different Berlo factors to map into the same factor in the individual solution. This, in fact, did occur with some frequency. This is one of the variables examined. Others include the degree to which each of the Berlo factors map into the three individual factors classified in terms of size.

Based on the Berlo results, the scales used to evaluate the sources can be assigned unambiguously to one of the three factors which emerged in his analysis (safety

has 18 scales, qualification has 8 scales, and dynamism has 8 scales for the total of 34 scales used). The proportion of variance accounted for by each category of scales on each factor in the individual three factor solutions is computed and examined. For those solutions which the Berlo factors mapped into separate factors, the distribution pattern of variance of the three categories of scales on the three factors is examined to see if it corresponds to the distribution pattern in the Berlo factor analysis. If more than half the variance of each factor was accounted for each by a different category of scales and if more than half the variance of each category of scales was distributed on separate single factor, the solution is regarded as having an adequate match with the Berlo findings. All other solutions are regarded as inadequate matches. This is another variable examined.

From the matching process just described, it was not possible to characterize in a satisfactory manner the degree to which each factor in the individual three factor rotated solutions corresponded to one of the Berlo factors. Each individual three factor solution was examined and each factor in it was classified in terms of the Berlo factor it most resembled, if any. One of three kinds of categories was assigned to each factor by examining the distribution

pattern of the highest loadings across the three kinds of scales. If more than half of the scales from a given Berlo factor had their highest loadings on the same individual factor and this represented more than half of the scales which had their highest loadings on that factor, then that individual factor was classified as being representative of the given Berlo factor. This resulted in classifying the individual factor as either "safety," "qualification" or "dynamism." The second kind of category involved a combination of two or more Berlo factors. If more than half of the scales from two or more Berlo factors had their highest loadings on the same factor in an individual solution and this represented more than half of all the scales with the highest loadings on the factor, the individual factor was classified as exhibiting a combination of two or more Berlo factors. Finally, factors not classified as representative of a single or multiple of the Berlo factors were designated as "other."

The variables specifically examined as a result of this classification of the factors in the individual three factor rotated solutions are as follows:

- 1) The degree to which all three Berlo factors are represented
- 2) The degree to which the safety factor is represented

- 3) The degree to which the qualification factor is represented
- 4) The degree to which the dynamism factor is represented
- 5) The degree to which the three factors are represented in the same magnitude of order in the Berlo findings; safety the largest, qualification the next largest, and dynamism the smallest
- 6) The degree to which the largest factor represents the safety dimension
- 7) The degree to which the middle sized factor represents the qualification dimension
- 8) The degree to which the smallest factor represents the dynamism dimension.

The statistic computed for each of the variables used in the tests of Hypotheses III and IV was the proportion of solutions exhibiting the dichotomous characteristic or variable under consideration. All of the variables used in statistical tests were dichotomous. The individual solution was classified as either exhibiting the variable or characteristic or not exhibiting it.

Analysis Design for Hypotheses III and IV

Hypothesis III is concerned with differences between the solutions for the two kinds of sources, belief or disbelief, in exhibiting a given characteristics. This represents two measures taken from each subject. The McNemar Test for the significance of changes is used to make these

statistical comparisons. Table 18 describes the test (Siegel, 1956).

Hypothesis IV deals with the difference between the dogmatism groups on the kind or nature of the dimensions of source evaluation used to describe either one or both of the two kinds of sources. The same dichotomous variables are used in connection with this hypothesis. Also, the comparisons employed involve only the extremes of the three dogmatism groups. The standard chi square test for independent groups is employed. Table 19 describes the test (Siegel, 1956).

Concluding Remarks

It should be emphasized again that the analysis for Hypotheses III and IV is informal and exploratory. The data for some of the tests, without question, are not independent of the data for some of the others. Also, whether the other necessary assumptions have been met is questionable in some instances. However, it was felt the comparisons should be made either with or without the benefit of statistical tests. They are important for drawing out of the data some possibly useful and interesting additional information about the generality of the construct of credibility that the more systematic and formal hypotheses (I and II)

Table 18. Fourfold Frequency Table for Use in Testing the Differences Between the Factor Solutions for the Belief and Disbelief Sources in the Degree to which Each Exhibit a Given Characteristic.

Belief Sources Factor Solution Exhibits Characteristic?	Disbelief Sources Factor Solution Exhibits Characteristic?		<u>Total</u>
	<u>YES</u>	<u>NO</u>	
YES	A	B	A+B
NO	C	D	C+D
Total	A+C	B+D	99(n)
chi square = $\frac{(B - C - 1)^2}{B + C}$ df = 1			
alpha = .05		critical value = 3.84 (df = 1)	

Table 19. Fourfold Frequency Table for Use in Testing the Difference Between Two of the Three Dogmatism Groups on the Degree to which Individual Factor Solutions Exhibit a Given Characteristic.

Dogmatism Group	Factor Solution Exhibits Characteristic?		<u>Total</u>
	<u>YES</u>	<u>NO</u>	
First Group	A	B	33 (A + B)
Second Group	C	D	33 (C + D)
Total	A + C	B + D	66 (N)
chi square = $\frac{N(AD - BC - N/2)^2}{(A + B)(C + D)(A + C)(B + D)}$ df = 1			
alpha = .05		critical value = 3.84 (df = 1)	

do not draw out. The formal hypotheses say nothing about the content, only the structure of the dimensions of source evaluation. The informal analysis is focused on some possible content differences. It is hoped that these informal analyses will point to ways of getting at these kinds of things in a more systematic and formal way of future research.

CHAPTER III

RESULTS

The results of the tests of the four hypotheses are reported as follows. First, the test of Hypotheses I and II are presented. Since for each operationalization of a dependent variable, the data and analysis are common for both hypotheses, the results of the statistical tests of both are reported together for each dependent variable. In like manner, the results of the tests of Hypotheses III and IV follow.

Hypotheses I and II

- Hypothesis I: The number and/or differentiation of the dimensions of source evaluation will be greater for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.
- Hypothesis II: The difference between the number and/or differentiation of the dimensions of source evaluation for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems than for open systems.

Eleven different operationalizations of the dependent

variable, "number and/or differentiation of the dimensions of source evaluation," are used to make the tests of these two hypotheses. A separate table is included for each dependent variable. It includes the interaction and main effect means, the analysis of variance source of variation table, and a re-statement of the general hypotheses in terms of the specific operationalization of the dependent variable being tested.

Number of Dimensions of Source Evaluation-- The "number of dimensions of source evaluation" has five operationalizations. These include the number of factors rotated in the factor solution meeting the Kiel-Wrigley criterion equal to three and the proportion of total variance accounted for in the one (first principal axis factor), two, three and four factor solutions. Results will be found in Tables 20 through 24. Hypothesis I was confirmed for four out of five of the indices. The only index for Hypothesis I which was not confirmed was the proportion of variance accounted for by the one factor solutions. For belief sources,* the mean number of factors rotated according to the criterion was slightly

*As a shorthand device, throughout the remainder of this paper, sources associated with the belief end of the belief-disbelief continuum will be referred to as "belief sources" and sources associated with the disbelief end of the belief-disbelief continuum will be referred to as "disbelief sources."

less than four. This is somewhat larger than the three factors extracted by Berlo in his final results when using the same criterion. The proportion of variance accounted for by the two, three and four factor solutions was reliably larger for the belief sources in contrast with the disbelief sources, in the predicted direction. The magnitude of the difference for all three kinds of solutions was about two per cent. The assumption here was that if the variance accounted for by solutions having the same number of factors differed, this would indicate that one group required more factors in order to have the same explanatory power. On all five operationalizations, Hypothesis II received no confirmation. Observed differences were all well within chance fluctuations.

Differentiation of Source Evaluation Dimensions--Re-
garding "differentiation of the dimensions of source evaluation," there were two kinds of operationalizations used. One was concerned with the way the total variance accounted for by solutions of a given number of factors was distributed across all the factors. The more evenly the total variance is distributed across all the factors, the greater the differentiation. The more the total variance is concentrated in a single factor, the less the differentiation. Hence, the proportion of total variance accounted for by the

Table 20. Dependent Variable: Number of Factors Rotated in the Factor Solution Meeting the Kiel-Wrigley Criterion Equal to Three

Table of Means			
	Sources		
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>
Open Systems (low)	4.24	3.26	3.94
Intermediate (medium)	4.18	3.94	4.06
Closed Systems (high)	4.12	3.85	3.98
TOTAL	4.18	3.81	3.99

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-value</u>
Bn Subjects	(98)			
Dogmatism	2	.24745	.154	n.s.
error	96	1.60417		
Wn Subjects	(99)			
Sources	1	6.91409	7.196	.011
Sources X Dogmatism	2	.67174	.699	n.s.
error	96	.96086		

Total 198

Hypothesis I.1.--The number of factors rotated in the factor solutions meeting the Kiel-Wrigley criterion equal to three will be greater for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.1.--The difference between the number of factors in the factor solutions meeting the Kiel-Wrigley criterion equal to three for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 21. Dependent Variable: Proportion of Variance
Accounted for by the First Principal Axis
Factors (One Factor Solutions)

<u>Dogmatism</u>	<u>Table of Means</u>		<u>Total</u>
	<u>Belief</u>	<u>Disbelief</u>	
Open Systems (low)	.423	.415	.419
Intermediate (medium)	.437	.425	.431
Closed Systems (high)	.420	.373	.397
Total	.427	.404	.416

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn Subjects	(98)			
Dogmatism	2	.02028	1.228	n.s.
error	96	.01651		
Wn. Subjects	(99)			
Sources	1	.02484	3.770	n.s.
Sources X Dogmatism	2	.00787	1.195	n.s.
error	96	.00659		
Total	198			

Hypothesis 1.2.-- The proportion of variance accounted for by the first principle axis factors (one factor solutions) will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.2.-- The difference between the proportion of variance accounted for by the first principal axis factors (one factor solutions) for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 22. Dependent Variable: Proportion of Variance Accounted for by the Two Factor Solutions

Table of Means Sources			
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>
Open Systems (low)	.585	.613	.599
Intermediate (medium)	.583	.616	.600
Closed Systems (high)	.562	.581	.571
Total	.577	.603	.590

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn. Subjects	(98)			
Dogmatism	2	.01739	1.164	n.s.
error	96	.01494		
Wn. Subjects	(99)			
Sources	1	.03446	6.605	.012
Sources X Dogmatism	2	.00094	.180	n.s.
error	96	.00522		
Total	198			

Hypothesis 1.3.-- The proportion of variance accounted for by the two factor solutions will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.3.-- The difference between the proportion of variance accounted for by the two factor solutions for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 23. Dependent Variable: Proportion of Variance
Accounted for by the Three Factor Solutions

Table of Means Sources			
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>
Open Systems (low)	.672	.700	.686
Intermediate (medium)	.666	.697	.681
Closed Systems (high)	.651	.658	.655
Total	.663	.685	.674

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn. Subjects	(98)			
Dogmatism	2	.01916	1.635	n.s.
error	96	.01171		
Wn. Subjects	(99)			
Sources	1	.02402	7.060	.009
Sources X Dogmatism	2	.00260	.764	n.s.
error	96	.00340		
Total	198			

Hypothesis 1.4.-- The proportion of variance accounted for by the three solutions will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.4.-- The difference between the proportion of variance accounted for by the three factor solutions for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 24. Dependent Variable: Proportion of Variance
Accounted for by the Four Factor Solutions

Table of Means Sources				
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>	
Open Systems (low)	.733	.756	.744	
Intermediate (medium)	.725	.752	.739	
Closed Systems (high)	.712	.718	.715	
Total	<u>.723</u>	<u>.742</u>	<u>.733</u>	
Analysis of Variance				
<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-value</u>
Bn Subjects	(98)			
Dogmatism	2	.01599	1.779	n.s.
error	96	.00898		
Wn Subjects	(99)			
Sources	1	.01685	7.077	.009
Sources X Dogmatism	2	.00218	.915	n.s.
error	96	.00238		
Total	<u>198</u>			

Hypothesis 1.5.-- The proportion of variance accounted for by the four factor solutions will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.5.-- The difference between the proportion of variance accounted for by the four factor solutions for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

largest factor is used for one kind of operationalization of differentiation. The other relates to the way the variance accounted for by each variable or credibility scale is distributed across the factors. Again, the more evenly this variance is distributed, the greater the differentiation. Likewise, the more this variance associated with each scale is concentrated on a single factor, the less the differentiation. This is quite akin to the notions of the factor analytic concept of simple structure. In other words, the more closely simple structure is approximated, the less the differentiation. Hence, the proportion of common variance accounted for by the highest factor loadings for each variable or scale is used for the other kind of operationalization of differentiation.

Differentiation: Size of Largest Factor-- The proportion of total variance accounted for by the largest factor was computed for the two, three, and four rotated solutions. Results are reported in Tables 25, 26, and 27. Hypothesis I is confirmed only for the three factor solution. The per cent of variance accounted for by the largest factor in the four factor solutions for the disbelief sources was about a per cent and a half larger than that for the belief sources, in the predicted direction. Hypothesis II, concerning the relationship of differentiation to dogmatism, received no

confirmation. All of the differences on these indices for dogmatism were well within chance expectations.

Differentiation: Simple Structure Index-- The simple structure index or proportion of common variance accounted by the highest loadings for each variable was computed for the two, three and four rotated solutions. Hypothesis I was confirmed for all three factor solutions or operationalizations. Results are reported in Tables 28, 29, and 30. The simple structure index was larger by about two or three per cent for two, three and four factor solutions for disbelief sources than for belief sources, in the predicted direction. Hypothesis II received confirmation only for the simple structure index computed for two factor rotated solution. The difference between the factor solutions for the belief and disbelief sources in the simple structure index was about a per cent and a half for low dogmatics, whereas the same difference for high dogmatics was about four and a half per cent. All other differences were well within chance fluctuations so as to defy speculation regarding direction.

Hypotheses III and IV

Hypothesis III: The nature or kind of dimensions of source evaluation used for sources associated with the belief end of the belief-disbelief continuum will differ from those used for sources associated with the disbelief end.

Table 25. Dependent Variable: Proportion of Variance Accounted for by Largest Factor in Two Factor Rotated Solutions

<u>Dogmatism</u>	<u>Table of Means</u> <u>Sources</u>		
	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>
Open Systems (low)	.361	.371	.366
Intermediate (medium)	.381	.363	.372
Closed Systems (high)	.346	.337	.341
Total	.362	.357	.360

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn. Subjects	(98)			
Dogmatism	2	.01810	1.604	n.s.
error	96	.01128		
Wn Subjects	(99)			
Sources	1	.00164	.344	n.s.
Sources X Dogmatism	2	.00331	.692	n.s.
error	96	.00478		
Total	198			

Hypothesis 1.6.-- The proportion of variance accounted for by largest factor in the two factor rotated solutions will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.6.-- The difference between the proportion of variance accounted for by largest factor in two factor rotated solutions for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 26. Dependent Variable: Proportion of Variance Accounted for by the Largest Factor in the Three Factor Rotated Solutions

Table of Means Sources			
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>
Open Systems (low)	.315	.338	.327
Intermediate (medium)	.322	.327	.324
Closed Systems (high)	.299	.305	.302
Total	.312	.323	.318

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn Subjects	(98)			
Dogmatism	2	.01237	1.510	n.s.
error	96	.00824		
Wn Subjects	(99)			
Sources	1	.00615	1.867	n.s.
Sources X Dogmatism	2	.00164	.498	n.s.
error	96	.00330		
Total	198			

Hypothesis I.7.-- The proportion of variance accounted for by the largest factor in the three factor rotated solutions will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.7.-- The difference between the proportion of variance accounted for by largest factor in the three factor rotated solutions for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 26. Dependent Variable: Proportion of Variance Accounted for by the Largest Factor in the Three Factor Rotated Solutions

Table of Means Sources				
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>	
Open Systems (low)	.315	.338	.327	
Intermediate (medium)	.322	.327	.324	
Closed Systems (high)	.299	.305	.302	
Total	.312	.323	.318	
Analysis of Variance Table				
<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn Subjects	(98)			
Dogmatism	2	.01237	1.510	n.s.
error	96	.00824		
Wn. Subjects	(99)			
Sources	1	.00615	1.867	n.s.
Sources X Dogmatism	2	.00164	.498	n.s.
error	96	.00330		
Total	198			

Hypothesis I.7.-- The proportion of variance accounted for by the largest factor in the three factor rotated solutions will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.7.-- The difference between the proportion of variance accounted for by largest factor in the three factor rotated solutions for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 27. Dependent Variable: Proportion of Variance
Accounted for by Largest Factor in the Four
Factor Rotated Solutions

<u>Dogmatism</u>	<u>Sources</u>		<u>Total</u>
	<u>Belief</u>	<u>Disbelief</u>	
Open Systems (low)	.295	.322	.308
Intermediate (medium)	.299	.310	.304
Closed Systems (high)	.278	.290	.284
Total	<u>.291</u>	<u>.307</u>	<u>.299</u>

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn Subjects	(98)			
Dogmatism	2	.01090	1.356	n.s.
error	96	.00804		
Wn. Subjects	(99)			
Sources	1	.01376	4.158	.044
Sources X Dogmatism	2	.00127	.384	n.s.
error	96	.00331		
Total	<u>198</u>			

Hypothesis I.8.-- The proportion of variance accounted for by the largest factor in the four factor rotated solutions will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.8.-- The difference between the proportion of variance accounted for by the largest factor in the four factor rotated solutions for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 28. Dependent Variable: Simple Structure Index for the Two Factor Rotated Solutions (Proportion of the Total Variance Accounted For by the Highest Loadings for Each Variable)

Table of Means Sources			
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>
Open Systems (low)	.874	.892	.883
Intermediate (medium)	.876	.880	.878
Closed Systems (high)	.851	.893	.872
Total	<u>.867</u>	<u>.889</u>	<u>.878</u>

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn Subjects	(98)			
Dogmatism	2	.00211	1.203	n.s.
error	96	.00176		
Wn Subjects	(99)			
Sources	1	.02364	13.638	.0005
Sources X Dogmatism	2	.00586	3.381	.038
error	96	.00173		
Total	<u>198</u>			

Hypothesis I.9.-- The simple structure index for the two factor rotated solutions (proportion of the total variance accounted for by the highest loadings for each variable) will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis II.9.-- The difference between the simple structure index for the two factor rotated solutions (proportion of the total variance accounted for by the highest loadings for each variable) for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 29. Dependent Variable: Simple Structure Index for the Three Factor Rotated Solutions (Proportion of the Total Variance Accounted for by the Highest Loadings for Each Variable)

Table of Means Sources			
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>
Open Systems (low)	.795	.820	.808
Intermediate (medium)	.785	.804	.794
Closed Systems (high)	.783	.819	.801
Total	<u>.788</u>	<u>.815</u>	<u>.801</u>

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn Subjects	(98)			
Dogmatism	2	.00299	1.263	n.s.
error	96	.00236		
Wn. Subjects	(99)			
Sources	1	.03517	14.827	.001
Sources X Dogmatism	2	.00132	.554	n.s.
error	<u>96</u>	<u>.00237</u>		
Total	198			

Hypothesis I.10.-- The simple structure index for the three factor rotated solutions (proportion of the total variance accounted for by the highest loadings for each variable) will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis I.10.-- The difference between the simple structure index for the three factor rotated solutions (proportion of the total variance accounted for by the highest loadings for each variable) for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Table 30. Dependent Variable: Simple Structure Index for the Four Factor Rotated Solutions (Proportion of Total Variance Accounted for by the Highest Loadings for Each Variable)

Table of Means Sources			
<u>Dogmatism</u>	<u>Belief</u>	<u>Disbelief</u>	<u>Total</u>
Open Systems (low)	.743	.722	.757
Intermediate (medium)	.737	.757	.747
Closed Systems (high)	.729	.769	.749
Total	<u>.736</u>	<u>.766</u>	<u>.751</u>

Analysis of Variance Table

<u>Source of Variation</u>	<u>df</u>	<u>Mean Square</u>	<u>F-Ratio</u>	<u>p-Value</u>
Bn Subjects	(98)			
Dogmatism	2	.00185	.765	n.s.
error	96	.00242		
Wn. Subjects	(99)			
Sources	1	.04252	18.301	.0005
Sources X Dogmatism	2	.00163	.705	n.s.
error	96	.00232		
Total	<u>198</u>			

Hypothesis I.11.-- The simple structure index for the four factor rotated solutions (proportion of total variance accounted for by the highest loadings for each variable) will be less for sources associated with the belief end of the belief-disbelief continuum than for sources associated with the disbelief end.

Hypothesis I.11.-- The difference between the simple structure index for the four factor rotated solutions (proportion of total variance accounted for by the highest loadings for each variable) for sources associated with the belief end of the belief-disbelief continuum and for sources associated with the disbelief end will be greater for closed systems (high dogmatism) than for open systems (low dogmatism).

Hypothesis IV: Closed systems (high dogmatics) will differ from open systems (low dogmatics) in the nature or kind of dimensions of source evaluation used.

Since the focus of the analysis for Hypotheses III and IV is informal and exploratory, the reporting of the results will deviate from the way more formal and systematic analyses are usually presented. There will be no specific reference to the two hypotheses in reporting the analysis, only the differences found will be reported. Constant reference to the two hypotheses seems superfluous anyway, since the specific nature of differences predicted are not detailed. Only the suggestion that differences will be found is contained in them. The hypotheses then should be regarded as performing a stage-setting function for the analysis which is reported. The primary question to be examined in the remainder of the chapter is: "To what extent do the individual three factor solutions for both groups of subjects (dogmatism) and groups of sources (belief vs. disbelief) correspond to or differ from the factor analytic results obtained by Berlo in the Lansing general public sample (reported in Appendix E) regarding the dimensions of source evaluation (factors respectively, safety, qualification and dynamism)?"

Number of Factors in Individual Rotated Solutions--

Berlo isolated three dimensions of source evaluation. The three factor solution containing these results met the Kiel-Wrigley criterion set at three. To what extent did the same thing obtain with the individual solutions? The number of factors in the rotated solutions in the individual factor analyses (198 in all, two for each subject) which met the Kiel-Wrigley criterion when set at three is contained in Table 31. The number of factors rotated ranged from two to eight, with three, four or five factor rotations accounting for the bulk of the solutions (about 85%). Only for about a fourth of the solutions was the Kiel-Wrigley criterion satisfied at the three factor solution. This proportion differed for belief sources (about a fifth) and disbelief sources (about a third) (see Table 31). It has already been reported that factor solutions meeting the Kiel-Wrigley criterion had a larger number of factors in them for belief sources than for disbelief sources. Across all solutions, the average number of factors rotated according to the criterion employed was four, one more than the Berlo results indicate. There is certainly room here for the individual factor analyses to differ widely from the Berlo findings.

Variance Accounted for by Factors in Individual Three Factor Rotated Solutions-- To what extent does the distribution of variance accounted for in the individual three factor

Table 31. Number of Factors in the Rotated Solutions in the Individual Factor Analyses Which Met the Kiel-Wrigley Criterion When Set at Three: Frequency Distribution

		Number of Factors in Solution							Total
		2	3	4	5	6	7	8	
Overall (all solutions)	freq.	15	51	75	41	11	3	2	198
	pct.	7.58	25.76	37.88	20.70	5.56	1.52	1.01	
Belief Sources	freq.	6	19	38	27	6	2	1	99
	pct.	6.06	19.19 ^a	38.38	27.27	6.06	2.02	1.01	
Disbelief Sources	freq.	9	32	37	14	5	1	1	99
	pct.	9.09	32.32 ^a	37.37	14.14	5.05	1.01	1.01	
Low Dogmatism (open)	freq.	5	17	26	14	3	1	0	66
	pct.	7.58	25.76	39.39	21.21	4.54	1.52	0.00	
Medium Dogmatism	freq.	6	13	26	17	2	0	2	66
	pct.	9.09	19.70	39.39	25.76	3.03	0.00	3.03	
High Dogmatism	freq.	4	21	23	10	6	2	0	66
	pct.	6.06	31.82	34.84	15.15	9.09	3.03	0.00	
Low Dogmatism, Belief Sources	freq.	2	5	14	8	3	1	1	33
	pct.	6.06	15.15	42.42	24.24	9.09	3.03	0.00	
Low Dogmatism, Disbelief Sources	freq.	3	12	12	6	0	0	0	33
	pct.	9.09	36.36	36.36	18.18	0.00	0.00	0.00	
Medium Dogmatism, Belief Sources	freq.	4	4	11	12	1	0	1	33
	pct.	12.12	12.12	33.33	36.36	3.03	0.00	3.03	
Medium Dogmatism, Disbelief Sources	freq.	2	9	15	5	1	0	1	33
	pct.	6.06	27.27	45.45	15.15	3.03	0.00	3.03	

Table 31--continued

High Dog-	freq.	0	10	13	7	2	1	0	33
matism,	pct.	0.00	30.30	39.39	21.21	6.06	3.03	0.00	
Belief									
Sources									
High Dog-	freq.	4	11	10	3	4	1	0	33
matism,	pct.	12.12	33.33	30.30	9.09	12.12	3.03	0.00	
Disbelief									
Sources									

^aThe chi square for the comparison between the proportion of solutions meeting the Kiel-Wrigley criterion set at three with the three factor solutions for belief sources versus that for the disbelief sources = 4.364 (df = 1), p-value less than .05.

solutions correspond to the Berlo three factor solution?

There is considerable correspondence (see Table 32). The individual solutions account for about six per cent more of the variance than the Berlo results. Also, the individual solutions have a somewhat smaller largest factor and somewhat larger middle-sized and smallest factors by comparison.

Comparison of Berlo and Individual Results by Index of Factorial Similarity-- One can get some idea of how the Berlo factors map into the individual factors by explicitly comparing each of the individual three factor solutions with the corresponding Berlo three factor solution using the index of factorial similarity. This would produce a three by three matrix of coefficients for comparing any given individual solution with the Berlo one. These matrices averaged over the various groupings of solutions will be found in Table 33. On an overall basis, there is a tendency for Berlo's safety factor to be somewhat like either the largest or the middle-sized factor, favoring the largest one, and not too much like the smallest factor. The pattern is the same for the qualification factor, except that the middle-sized factor is favored instead of the larger factor. There is a small tendency for the dynamism factor to map into the smallest factor in the individual solutions, followed by the middle and largest factors in that order. The pattern for the

Table 32. Mean Proportion of Variance Accounted for by Each Factor in the Three Factor Solutions of the Individual Factor Analyses and the Berlo Factor Analysis

		Proportion of Total Variance				Proportion of Total Variance		
	FACTOR:	<u>Large</u>	<u>Medium</u>	<u>Small</u>	<u>Total</u>	<u>Large</u>	<u>Medium</u>	<u>Small</u>
Berlo Factor Analysis		.346	.160	.106	.612	.565	.262	.172
<u>Individual Factor</u> <u>Analyses</u>	<u>N</u>							
Overall (all solutions)	198	.318	.219	.137	.674	.467	.326	.207
Belief Sources	99	.312	.214	.137	.663	.466	.323	.211
Disbelief Sources	99	.323	.225	.137	.685	.468	.329	.203
Low Dogmatism (open)	66	.327	.218	.141	.686	.473	.319	.208
Medium Dogmatism	66	.324	.218	.139	.681	.471	.320	.208
High Dogmatism (closed)	66	.302	.222	.130	.655	.458	.339	.203
Low Dogmatism, Belief Sources	33	.315	.217	.140	.672	.464	.324	.212
Low Dogmatism, Disbelief Sources	33	.338	.220	.142	.700	.482	.314	.204
Medium Dogmatism, Belief Sources	33	.322	.205	.138	.666	.478	.310	.212
Medium Dogmatism, Disbelief Sources	33	.327	.230	.141	.697	.465	.330	.205
High Dogmatism, Belief Sources	33	.299	.218	.134	.651	.456	.336	.208
High Dogmatism, Disbelief Sources	33	.305	.225	.128	.658	.460	.341	.199

Table 33. Mean Index of Factorial Similarity Coefficient Between Each of the Factors in the Three Factor Rotated Solutions of the Individual Factor Analyses and the Three Factors (Safety, Qualification, and Dynamism) Isolated by Berlo

	Belief Sources			Disbelief Sources			Total		
	Individual			Individual			Individual		
	Analyses Factor			Analyses Factor			Analyses Factor		
	Large	Medium	Small	Large	Medium	Small	Large	Medium	Small
Low									
Dogmatism									
(Open)									
Berlo Factor									
Safety	.759	.495	.211	.600	.359	.434	.679	.427	.322
Qualifi-									
cation	.589	.650	.404	.584	.467	.471	.587	.559	.438
Dynamism	.275	.468	.576	.366	.360	.349	.320	.414	.463
Medium									
Dogmatism									
Berlo Factor									
Safety	.817	.585	.265	.585	.519	.191	.701	.552	.228
Qualifi-									
cation	.630	.711	.334	.552	.549	.344	.591	.630	.339
Dynamism	.253	.386	.657	.283	.306	.434	.268	.345	.545
		(N = 33)			(N=33)			(N=66)	
High									
Dogmatism									
(Closed)									
Berlo Factor									
Safety	.790	.615	.195	.631	.449	.370	.711	.532	.283
Qualifi-									
cation	.633	.667	.343	.526	.613	.325	.579	.640	.334
Dynamism	.278	.371	.520	.218	.394	.230	.248	.382	.375
		(N=33)			(N=33)			(N=66)	
Total									
Berlo Factor									
Safety	.789	.565	.224	.605	.443	.332	.697	.504	.278
Qualifi-									
cation	.618	.676	.360	.554	.543	.380	.586	.610	.370
Dynamism	.268	.408	.584	.289	.353	.337	.279	.381	.461
		(N=99)			(N=99)			(N=198)	

safety factor tends to hold across all sub-group solutions. For the qualification factor, the general pattern still holds up for the sub-groups except for the factor which is slightly favored. For belief sources, the tendency for slightly favoring the middle factor is present, as in the overall averages. However, the slight variation comes with the disbelief sources. There, instead of slightly favoring the middle factor, there is a tendency for the largest factor to be slightly favored. The most variation is found in the pattern for the way the dynamism factor maps into the three individual factors.

Indices for the dynamism factor are weaker than those for the other two factors. The overall pattern holds up for the belief sources with a slightly greater tendency for the dynamism factor to map into the smaller factor. The variation comes with the disbelief sources. Across all solutions for disbelief sources, there is no tendency for the dynamism factor to map into any particular factor in the individual solutions. However, when the dogmatism sub-groups of the disbelief sources are examined, one notes differing tendencies. For the high dogmatism group, there is a slight tendency to favor the middle factor. For the middle group, the smallest factor is favored. For the low dogmatism group, there is no particular tendency to favor any specific individual factor.

Interpretation Limits on Index of Factorial Similarity--

No one has developed a sampling distribution for the index of factorial similarity, but Wrigley has what he terms a lower bound of good fit for the index:

$$\text{lower bound of good fit} = \frac{1 + \sqrt{\frac{1}{k}}}{2} \quad \text{where } k \text{ is the number of factors in each of the two solutions being compared.}$$

In this situation, k would equal three with the lower bound of good fit being .789. With this standard, the only indices in the table one could talk about across most sub-groups (all sub-groups which include belief sources) would be some of the largest ones for the safety factor. Only one of the nine sub-groups has indices for the qualification factor which exceed this lower bound value. None does for dynamism.

Another approach to this problem would be to generate some coefficients from random data. Factor analyses of random data of the size of the Berlo factor analysis and ten of the size of the individual analyses were computed and compared on the same basis as in this study using the index of factorial similarity. A distribution of 250 indices was generated. The absolute range was from -.37 to +.47, the ninety-fifth percentile range was from -.31 to +.42, the ninetieth percentile range was -.28 to +.39, and the median value was between +.04 and +.05. Using this standard, one could make much wider

interpretation involving the magnitude of the indices. All factors would have a number of interpretable indices.

Variance Distribution Pattern Across the Three Scale Types in the Individual Solutions-- There is an alternative way of getting some idea of the mapping of the individual factors into the Berlo three source evaluation factors. The scales are classified into three groups, each representing a Berlo factor. Then, the way the variance associated with each group of scales is distributed across each of the three individual factors (largest, middle sized, smallest) is examined. Table 35 presents this tabulation. At the top of the table, the variance associated with each group of scales is broken down for the Berlo factor analysis. This breakdown is useful for interpreting the similar breakdowns for the individual factor analyses. As can be seen, the variance associated with each scale group is distributed essentially on a single factor. The secondary loadings of the scales on other than the principal factor were quite low in the Berlo analysis.

When the similar tabulations in the remainder of Table 34 are examined for the various sub-groups of the individual solutions, the distribution pattern for the three scale groups is nowhere as clean, clearcut, and as striking

Table 34. Mean Proportion of Variance Accounted for by Each of the Three Groups of Scales (Berlo's Three Factors of Safety, Qualification and Dynamism) on Each of the Factors in the Three Factor Rotated Solutions of the Individual Factor Analyses

Factor									
Berlo		Large			Medium		Small		
Factor Analysis		.313			.025		.003		
Safety Scales									
Qualification Scales		.027			.126		.009		
Dynamism Scales		.006			.009		.094		
Individual Factor Analyses (Number equals 198)									
Belief Sources				Disbelief Sources			Total		
Factor				Factor			Factor		
Low	Large	Medium	Small	Large	Medium	Small	Large	Medium	Small
Dogmatism									
(Open)									
Safety	.224	.088	.046	.194	.099	.066	.209	.094	.056
Qualifi-	.057	.079	.033	.083	.056	.037	.070	.068	.035
cation	.034	.049	.059	.059	.063	.038	.046	.056	.049
Dynamism	(N=33)			(N=33)			(N=66)		
Medium									
Dogmatism									
Safety	.229	.082	.044	.189	.109	.064	.209	.096	.054
Qualifi-	.065	.085	.017	.072	.067	.031	.068	.076	.024
cation	.028	.038	.076	.064	.052	.044	.046	.045	.060
Dynamism	(N=33)			(N=33)			(N=66)		
High									
Dogmatism									
(Closed)									
Safety	.199	.107	.041	.177	.094	.073	.188	.101	.057
Qualifi-	.064	.073	.026	.063	.079	.020	.063	.076	.023
cation	.034	.037	.066	.064	.051	.033	.049	.044	.050
Dynamism	(N=33)			(N=33)			(N=66)		
Total									
Safety	.217	.092	.044	.187	.101	.068	.202	.097	.056
Qualifi-	.062	.079	.025	.073	.068	.029	.067	.073	.027
cation	.032	.041	.067	.062	.055	.039	.047	.048	.053
Dynamism	(N=99)			(N=99)			(N=198)		

Table 35. Comparisons of Berlo's Three Factor Solutions with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of the Frequency and Percentage of the Number of Different Factors With Which the Three Berlo Factors had Their Highest Indices of Factorial Similarity in the Individual Analyses

			No. of Factors for Disbelief Sources		
Dogmatism	No. of Factors for Belief Sources		-		
			Two or Less	Three	Total
Low (Open)	Two or Less	freq.	3	6	9
		pct.	9.09	18.18	27.27
	Three	freq.	11	13	24
		pct.	33.33	39.39	72.72
	Total ^a	freq.	14	19	33
		pct.	42.42	57.57	99.99
- - - - -					
Medium	Two or Less	freq.	4	5	9
		pct.	12.12	15.15	27.27
	Three	freq.	11	13	24
		pct.	33.33	39.39	72.72
	Total	freq.	15	18	33
		pct.	45.45	54.54	99.99
- - - - -					
High (Closed)	Two or Less	freq.	6	3	9
		pct.	18.18	9.09	27.27
	Three	freq.	18	6	24
		pct.	54.54	18.18	72.72
	Total	freq.	24	9	33
		pct.	72.72	27.27	99.99
- - - - -					
Total (Across all Three Groups)	Two or Less	freq.	14	13	27
		pct.	14.14	13.13	27.27
	Three	freq.	32	40	72
		pct.	32.32	40.40	72.72
	Total	freq.	46	53	99
		pct.	46.46	53.53	99.99

chi square for Total = 11.57 (df = 1), p-value less than .05

^aThe chi square for comparison between the totals for the disbelief sources only for the Low Dogmatism Group versus the High Dogmatism group = 5.061 (df = 1), p value less than .05.

as in the factor analysis which produced the scale groupings. By this measure, there is a marked tendency for the safety factor to map into the largest individual factor. However, the variance accounted for by the safety scales on the middle and smallest factors cannot be ignored. Often the variance accounted for by these scales is larger than the accounted for by either of the other two scale groups. Variance associated with the qualification is mostly distributed on the largest and middle individual factors. For the belief sources, the tendency is to favor the middle factor and for disbelief sources, the tendency is to favor the largest factor. The dynamism scales' variance is distributed differently for belief sources than it is for disbelief sources in a more pronounced fashion than for qualification. For belief sources, the smallest factor has the largest amount of the variance associated with the dynamism scales. For belief sources, the tendency is for the largest and middle factors to have most of the variance, with the largest favored slightly. The most interesting aspect of Table 34 is that when averaged across all solutions, the safety scales accounted for more variance on each of the three individual factors than did either of the other two types of scales. This same pattern holds generally for dis-

belief sources. The variation that does come for the belief sources is with the dynamism scales on the smallest factor. There the variance accounted for by them exceeds that of the safety scales.

Mapping of all Berlo Factors into Individual Three Factor Solutions-- To examine these data more systematically, the number of different individual factors into which the Berlo factors map are cross-tabulated with the dogmatism groups and the source types (see Table 35). Three factors are used in a higher proportion of the solutions in mapping the Berlo factors into the individual factors using the index of factorial similarity for belief sources (73%) than for disbelief sources (54%). This proportion is constant across all three of the dogmatism groups for belief sources (73%). It does vary for the disbelief sources. It is highest for the low dogmatism group (58%) and lowest for the high dogmatism group (28%).

Just by examining the largest indices of factorial similarity and finding that each Berlo factor maps into a separate individual factor, one cannot conclude that the match is good. Quite often the difference between indices is quite small, making clearcut assignment nearly impossible. However, it is a necessary but not sufficient condition for an adequate matching. For the solutions which map into

three factors, one could examine the way the variance of the scales is associated with each factor to define an adequate match. For present purposes, two conditions had to be met for the match to be defined as adequate. More than half of the variance associated with each scale category had to be distributed on a single separate factor. Further, the scale category associated with each factor had to account for more than half of the variance accounted for by that factor. Table 36 contains the tabulation of this classification of the individual factor solutions. A higher proportion (36%) of the solutions for belief sources were judged to be adequate than that (19%) for the disbelief sources. These overall proportions for both kinds of sources differed very little among the three dogmatism groups. The proportion of solutions for low dogmatics which were judged to match inadequately the Berlo results for both kinds of sources (36%) was lower than that (61%) for high dogmatics.

Mapping of Safety Factor into Largest Individual Factor--

Another interesting aspect of this matching procedure is to examine more systematically for each Berlo factor separately the degree to which it matches with the individual factors (large, medium, or small). The safety factor is summarized in Table 37. The most obvious difference between the solutions is for the belief and disbelief sources. Berlo's safety

Table 36. Comparisons of Berlo's Three Factor Solution With the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of Frequency and Percentage of Individual Solutions for which All Three of the Berlo Factors were Judged to have Adequate Matches

			Factor Matching for Disbelief Sources		
Dogmatism	Factor Matching for Belief Sources		<u>Adequate</u>	<u>Inadequate</u>	<u>Total</u>
Low (Open)	Adequate	freq.	3	12	15
		pct.	9.09	26.36	45.45
	Inadequate	freq.	6	12	18
		pct.	18.18	36.36 ^a	54.54
	Total	freq.	9	24	33
		pct.	27.27	72.72	99.99

Medium	Adequate	freq.	4	7	11
		pct.	12.12	21.21	33.33
	Inadequate	freq.	2	20	22
		pct.	6.06	60.60	66.66
	Total	freq.	6	27	33
		pct.	18.18	81.81	99.99

High (Close)	Adequate	freq.	1	9	10
		pct.	3.03	27.27	30.30
	Inadequate	freq.	3	20	23
		pct.	9.09	60.60 ^a	69.69
	Total	freq.	4	29	33
		pct.	12.12	87.87	99.99

Total (Across all Three Groups)	Adequate	freq.	8	28	36
		pct.	8.08	28.28	36.36
	Inadequate	freq.	11	52	63
		pct.	11.11	52.52	63.63
	Total	freq.	19	80	99
		pct.	19.19	80.80	99.99

chi square for Total = 6.57 (df = 1), p-value less than .05

^aThe chi square for comparison between the proportion of the Low Dogmatism Group for which the match between Berlo's results and the individual analyses is judged to be inadequate for both kinds of sources and that for the High Dogmatism Groups = 4.127 (df = 1), p-value less than .05.

Table 37. Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of the Frequency and Percentage of each Kind of Individual Factors in Terms of Size (Large, Medium, or Small) Which have the Highest Index of Factorial Similarity with Berlo's

Dogmatism	Belief Sources		Safety Factor			
	Factor		Disbelief	Sources	Factor	Total
			<u>Large</u>	<u>Medium</u>	<u>Small</u>	
Low (Open)	Large	freq.	16	6	3	25
		pct.	48.48	18.18	9.09	75.75
	Medium	freq.	4	0	3	7
		pct.	12.12	0.00	9.09	21.21
	Small	freq.	0	0	1	1
		pct.	0.00	0.00	3.03	3.03
	Total	freq.	20	6	7	33
		pct.	60.60	18.18	21.21	99.99

Medium	Large	freq.	13	10	3	26
		pct.	39.39	30.30	9.09	78.78
	Medium	freq.	2	2	1	5
		pct.	6.06	6.06	3.03	15.15
	Small	freq.	1	0	1	2
		pct.	3.03	0.00	3.03	6.06
	Total	freq.	16	12	5	33
		pct.	48.48	36.36	15.15	99.99

High (Closed)	Large	freq.	9	7	4	20
		pct.	27.27	21.21	12.12	60.60
	Medium	freq.	6	3	2	11
		pct.	18.18	9.09	6.06	33.33
	Small	freq.	2	0	0	2
		pct.	6.06	0.00	0.00	6.06
	Total	freq.	17	10	6	33
		pct.	51.51	30.30	18.18	99.99

Total (Across all Three Groups)	Large	freq.	38	23	10	71
		pct.	38.38	23.23	10.10	71.71
	Medium	freq.	12.12	5.05	6.06	23.23
		pct.	3.03	0.00	2.02	5.05
	Total	freq.	53	28	18	99
		pct.	53.53	28.28	18.18	99.99

Table 38. Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: The Proportion of Solutions for which the Safety Factor has the Highest Index of Factorial Similarity with the Largest Factor in the Individual Solutions for the Belief Sources versus that for the Disbelief Sources

Belief Sources Factor which has Highest Index of Factorial Similarity		Disbelief Sources Factor which has Highest Index of Factorial Similarity		
		<u>Largest Factor</u>	<u>Medium or Smallest Factor</u>	<u>Total</u>
Largest Factor	freq.	38	33	71
	pct.	38.38	33.33	71.71
Medium or Smallest Factor	freq.	15	13	28
	pct.	15.15	13.13	28.28
Total	freq.	53	46	99
	pct.	53.53	46.46	99.99

chi square = 6.021 (df = 1), p-value less than 105

factor is more likely to match most closely with the largest factor in the individual solutions for belief sources (72%) than for disbelief sources (53%) (see Table 38). In terms of the differences between dogmatism groups, the only difference worth mentioning is in the degree to which the safety factor maps into the largest factor in the disbelief sources' solutions for the extreme groups. Among low dogmatics (see Table 39), the safety factor is more likely to match the largest factor (48%) than among high dogmatics (27%).

Mapping of Qualification Factor into Middle-Sized Factor-- Table 40 summarizes the results for the qualification factor mapping. There are no particular differences between sub-groups of solutions in the way this mapping proceeds. For about half the solutions, the match is with the middle factor; for another third, the map is into the largest factor; and for the remainder, the smallest factor.

Mapping of Safety Factor into Smallest Individual Factor-- The matching for the dynamism factor is contained in Table 41. Again, as with the safety factor, the most obvious differences are between kinds of sources. The match for belief sources is more likely to be with the smallest factor (67%) than it is for disbelief sources (26%) (see Table 42). All differences among the dogmatism groups are small.

Classification of Factors in Individual Three Factor

Solutions-- Another approach to the question of the degree to which the individual solutions correspond to the Berlo results is to examine each of the individual three factor rotated solutions and classify each factor in terms of the results found by Berlo. Each scale in the individual solutions is assigned to the factor on which it had the highest loading. The highest loadings for each factor is examined. If more than half of the scales in one of the Berlo factor-scale categories is loaded on the same individual factor and these loadings in that scale category comprise more than half the highest loadings for the individual factor in question, then that factor is classified as representing that Berlo factor. Alternatively, if more than half of the scales from two or three Berlo scale categories have their highest loadings on the same factor and this comprises more than half of all the scales having their highest loading on this factor, then that individual factor is classified as a combination of the Berlo factors involved. Finally, all remaining unclassified factors are designated as "other." These are the individual factors assumed to be not classifiable in terms of the Berlo results. The results of classification of the 198 individual three-factor rotated solutions are found in Tables 43 and 44. One table summarizes the individual classification elements for

Table 39. Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: The Proportion of Solutions for which the Safety Factor has the Highest Index of Factorial Similarity with the Largest Factor in the Individual Solutions for both Belief and Disbelief Sources for the Low Dogmatism Groups versus that for the High Dogmatism Group

Dogmatism Group		Factor for Both Belief and Disbelief Sources which has Highest Index of Factorial Similarity		
		<u>Largest Factor</u>	<u>Medium or Smallest Factor</u>	<u>Total</u>
Low (Open)	freq.	16	17	33
	pct.	48.48	51.51	99.99
High (Closed)	freq.	9	24	33
	pct.	27.27	72.72	99.99
Total	freq.	25	41	66
	pct.	37.87	62.12	99.99

chi square = 3.863 (df = 1), p-value less than .05

Table 40. Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of the Frequency and Percentage of each Kind of Individual Factors in Terms of Size (Large, Medium, or Small) Which have the Highest Index of Factorial Similarity with Berlo's

			Qualification Factor			
			Disbelief Sources Factor		Factor	
Dogmatism	Belief Sources Factor		Large	Medium	Small	Total
Low (Open)	Large	freq.	1	5	4	10
		pct.	3.03	15.15	12.12	30.30
	Medium	freq.	5	5	6	16
		pct.	15.15	15.15	18.18	48.48
	Small	freq.	5	0	2	7
		pct.	15.15	0.00	6.06	21.21
Total	freq.	11	10	12	33	
	pct.	33.33	30.30	36.36	99.99	

Medium	Large	freq.	5	5	2	12
		pct.	15.15	15.15	6.06	36.36
	Medium	freq.	7	8	4	19
		pct.	21.21	24.24	12.12	57.57
	Small	freq.	2	0	0	2
		pct.	6.06	0.00	0.00	6.06
Total	freq.	14	13	6	33	
	pct.	42.42	39.39	18.18	99.99	

High (Closed)	Large	freq.	2	9	1	12
		pct.	6.06	27.27	3.03	36.36
	Medium	freq.	8	6	2	16
		pct.	24.24	18.18	6.06	48.48
	Small	freq.	1	4	0	5
		pct.	3.03	12.12	0.00	15.15
Total	freq.	11	19	3	33	
	pct.	33.33	57.57	9.09	99.99	

Total (Across all Three Groups)	Large	freq.	8	19	7	34
		pct.	8.08	19.19	7.07	34.34
	Medium	freq.	20	19	12	51
		pct.	20.20	19.19	12.12	51.51
	Small	freq.	8	4	2	14
		pct.	8.08	4.04	2.02	14.14
Total	freq.	36	42	21	99	
	pct.	36.36	42.42	21.21	99.99	

Table 41. Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: Summary of the Frequency and Percentage of each Kind of Individual Factors in Terms of Size (Large, Medium, or Small) Which have the Highest Index of Factorial Similarity with Berlo's

			Dynamism Factor			
			Disbelief Sources		Factor	
Dogmatism	Belief Sources Factor		<u>Large</u>	<u>Medium</u>	<u>Small</u>	<u>Total</u>
Low (Open)	Large	freq.	4	1	0	5
		pct.	12.12	3.03	0.00	15.15
	Medium	freq.	3	4	1	8
		pct.	9.09	12.12	3.03	24.24
	Small	freq.	6	8	6	20
		pct.	18.18	24.24	18.18	60.60
	Total	freq.	13	13	7	33
		pct.	39.39	39.39	21.21	99.99

Medium	Large	freq.	0	1	1	2
		pct.	0.00	3.03	3.03	6.06
	Medium	freq.	2	2	2	6
		pct.	6.06	6.06	6.06	18.18
	Small	freq.	12	5	8	25
		pct.	36.36	15.15	24.24	75.75
	Total	freq.	14	8	11	33
		pct.	42.42	24.24	33.33	99.99

High (Closed)	Large	freq.	1	0	2	3
		pct.	3.03	0.00	6.06	9.09
	Medium	freq.	4	5	0	9
		pct.	12.12	15.15	0.00	27.27
	Small	freq.	6	9	6	21
		pct.	18.18	27.27	18.18	63.63
	Total	freq.	11	14	8	33
		pct.	33.33	42.42	24.24	99.99

Total (Across all Three Groups)	Large	freq.	5	2	3	10
		pct.	5.05	2.02	3.03	10.10
	Medium	freq.	9	11	3	23
		pct.	9.09	11.11	3.03	23.23
	Small	freq.	24	22	20	66
		pct.	24.24	22.22	20.20	66.66
	Total	freq.	38	35	26	99
		pct.	38.38	35.35	26.26	99.99

Table 42. Comparisons of Berlo's Three Factor Solution with the Individual Three Factor Solutions Using the Index of Factorial Similarity: The Proportion of Solutions for which the Dynamism Factor has the Highest Index of Factorial Similarity with the Smallest Factor in the Individual Solutions for the Belief Sources versus that for the Disbelief Sources

Belief Sources Factor which has Highest Index of Factorial Similarity		<u>Smallest Factor</u>	<u>Medium or Largest Factor</u>	<u>Total</u>
Smallest Factor	freq.	20	46	66
	pct.	20.20	46.46	66.66
Medium or Largest Factor	freq.	6	27	33
	pct.	6.06	27.27	33.33
Total	freq.	26	73	99
	pct.	26.26	73.73	99.99

chi square = 29.25 (df = 1), p-value less than .05

each individual factor separately and the other summarizes according to the pattern of classification elements found across the three individual factors from largest to smallest.

Extent of all Berlo Factors Represent in Individual Solutions-- The first question that might be asked is whether there are differences among sub-group solutions in the number of Berlo factors found to be represented in the individual three factor solutions. See Table 45 for such a tabulation. The solutions for belief sources differ from those for disbelief sources, both in the number of Berlo factors represented and in the number of times that all three were represented. Factor solutions for belief sources tend to have more factors representative of the Berlo results (mean 2.10) than do the solutions for the disbelief sources (mean 1.63). The proportion of times that all three Berlo dimensions are present is higher for belief sources (49%) than it is for disbelief sources (30%). In the Berlo results, the three factors in order by amount of variance accounted for are safety, qualification, and dynamism. Does this same order hold up in the individual solutions? As might be expected (see Table 46), the number of solutions for belief sources which represent the three Berlo factors in the same order of magnitude of variance extracted is larger (35%) than that for

Table 43. Classification of the Factors in the Three Factor Individual Solutions According to the Factor Types found by Berlo et al. (Safety, Qualification, and Dynamism)

Individual Analysis	Factor Type	Over-all	Be-lief	be-lief	Low Dog.	Med Dog.	High Dog.	Low Dog.	Med Dog.	High Dog.	Low Dog.	Med Dog.	High Dog.
Largest	Safety	106	57	49	35	35	36	19	20	18	16	15	18
	Qual.	14	9	5	3	6	5	2	3	4	1	3	1
	Dynamism	4	2	2	2	2	0	2	0	0	0	2	0
	SQ Comb.	13	9	4	6	5	2	3	4	2	3	1	0
	SD Comb.	2	0	2	0	0	2	0	0	0	0	0	2
	QD Comb.	31	4	27	12	9	10	2	1	1	10	8	9
	SQD Comb.	2	2	0	1	1	0	1	1	0	0	0	0
	Other	26	16	10	7	8	11	4	4	8	3	4	3
	Total	198	99	99	66	66	66	33	33	33	33	33	33
Medium	Safety	49	21	28	15	18	16	8	4	9	7	14	7
	Qual.	73	45	28	23	28	22	25	18	12	8	10	10
	Dynamism	33	16	17	16	10	7	6	6	4	10	4	3
	SQ Comb.	0	0	0	0	0	0	0	0	0	0	0	0
	SD Comb.	0	0	0	0	0	0	0	0	0	0	0	0
	QD Comb.	12	4	8	2	2	8	1	1	2	1	1	6
	SQD Comb.	0	0	0	0	0	0	0	0	0	0	0	0
	Other	31	13	18	10	8	13	3	4	6	7	4	7
	Total	198	99	99	66	66	66	33	33	33	33	33	33
Smallest	Safety	0	0	0	0	0	0	0	0	0	0	0	0
	Qual.	20	8	12	11	4	5	4	1	3	7	3	2
	Dynamism	70	50	20	21	28	21	15	19	19	6	9	5
	SQ Comb.	0	0	0	0	0	0	0	0	0	0	0	0
	SD Comb.	0	0	0	0	0	0	0	0	0	0	0	0
	QD Comb.	1	0	1	0	0	1	0	0	0	0	0	1
	SQD Comb.	0	0	0	0	0	0	0	0	0	0	0	0
	Other	107	41	66	34	34	39	14	13	14	20	21	25
	Total	198	99	99	66	66	66	33	33	33	33	33	33
Total (Across All Three)	Safety	155	78	77	50	53	52	27	24	27	23	29	25
	Qual.	107	62	45	37	38	32	21	22	19	16	16	13
	Dynamism	107	68	39	39	40	28	23	25	20	16	15	8
	SQ Comb.	13	9	4	6	5	2	3	4	2	3	1	0
	SD Comb.	2	0	2	0	0	2	0	0	0	0	0	2
	QD Comb.	44	8	36	14	11	19	3	2	3	11	9	16
	SQD Comb.	2	2	0	1	1	0	1	1	0	0	0	0
	Other	164	70	94	51	50	63	21	21	28	30	29	35
	Total	594	297	297	198	198	198	99	99	99	99	99	99

Abbreviations: Qual.--Qualification; S--Safety; Q--Qualification;
D--Dynamism; Comb.--Combination; Dog.--Dogmatism

Table 44. Classification of Pattern of the Factors in the Three Factor Individual Solutions According to the Factor Types found by Berlo et al. (Safety--S, Qualification--Q, Dynamism--D, Other--OTH.)

Individual Analysis						Belief			Disbelief					
Factor			Over- all	Be- lief	Dis- be- lief	Low Dog.	Med. Dog.	High Dog.	Low Dog.	Med. Dog.	High Dog.	Low Dog.	Med. Dog.	High Dog.
Large	Medium	Small												
S	Q	D	53	35	18	17	23	13	11	16	8	6	7	5
S	D	Q	15	5	10	9	3	3	2	1	2	7	2	1
Q	S	D	8	7	1	2	3	3	2	2	3	0	1	1
D	S	Q	3	2	1	2	1	0	2	0	0	0	1	0
S	Q	OTH.	16	10	6	5	4	7	4	2	4	1	2	3
S	D	OTH.	2	1	1	1	1	0	1	0	0	0	1	0
Q	S	OTH.	3	1	2	0	1	2	0	0	1	0	1	1
D	S	OTH.	1	0	1	0	1	0	0	0	0	0	1	0
S	OTH.	Q	1	0	1	0	0	1	0	0	0	0	0	1
S	OTH.	D	1	1	0	0	0	1	0	0	1	0	0	0
OTH.	S	Q	1	1	0	0	0	1	0	0	1	0	0	0
OTH.	S	D	5	5	0	2	1	2	2	2	2	0	0	0
S	OTH.	OTH.	5	1	4	1	2	2	0	0	1	1	2	1
Q	OTH.	OTH.	3	1	2	1	2	0	0	1	0	1	1	0
OTH.	S	OTH.	3	1	2	0	2	1	0	0	1	0	2	0
OTH.	Q	OTH.	2	0	2	1	1	0	0	0	0	1	1	0
OTH.	D	OTH.	6	3	3	2	1	3	1	1	1	1	0	2
OTH.	OTH.	D	2	1	1	0	1	1	0	0	1	0	1	0
QD	S	OTH.	25	4	21	9	9	7	2	1	1	7	8	6
S	QD	OTH.	12	4	8	2	2	8	1	1	2	1	1	6
S	OTH.	QD	1	0	1	0	0	1	0	0	0	0	0	1
QD	OTH.	OTH.	6	0	6	3	0	3	0	0	0	3	0	3
SQ	D	OTH.	10	7	3	4	5	1	2	4	1	2	1	0
SQ	OTH.	D	1	1	0	0	0	1	0	0	1	0	0	0
SQ	OTH.	OTH.	2	1	1	2	0	0	1	0	0	1	0	0
SD	Q	OTH.	2	0	2	0	0	2	0	0	0	0	0	2
SQD	OTH.	OTH.	2	2	0	1	1	0	1	1	0	0	0	0
OTH.	OTH.	OTH.	7	5	2	2	2	3	1	2	2	1	0	1
Total			198	99	99	66	66	66	33	33	33	33	33	33

Table 45. Number of Factors in the Three Factor Rotated Solutions of the Individual Analyses Which Could be Classified as One of the Three Factors Found by Berlo et al.

		Number of Factors in Solution Which Could be Classified as One Found by Berlo et al.				Total
		0	1	2	3	
Overall	freq.	17	72	30	79	198
(All solutions)	pct.	8.59	36.36	15.15	39.90	
Belief Sources ^a	freq.	8	23	19	49	99
	pct.	8.08	23.23	19.19	49.49 ^b	
Disbelief Sources ^a	freq.	9	49	11	30	99
	pct.	9.09	49.49	11.11	30.30 ^b	
Low Dogmatism	freq.	8	20	8	30	66
	pct.	12.12	30.30	12.12	45.45	
Medium Dogmatism	freq.	3	25	8	30	66
	pct.	4.54	37.88	12.12	45.45	
High Dogmatism (closed)	freq.	6	27	14	19	66
	pct.	9.09	40.91	21.21	28.79	
Low Dogmatism Belief Sources	freq.	3	6	7	17	33
	pct.	9.09	18.18	21.21	51.51	
Low Dogmatism, Disbelief Sources	freq.	5	14	1	13	33
	pct.	15.15	42.42	3.03	39.39	
Medium Dogmatism, Belief Sources	freq.	3	8	3	19	33
	pct.	9.09	24.24	9.09	57.57	
Medium Dogmatism, Disbelief Sources	freq.	0	17	5	11	33
	pct.	0.00	51.51	15.15	33.33	
High Dogmatism, Belief Sources	freq.	2	9	9	13	33
	pct.	6.06	27.27	27.27	39.39	
High Dogmatism, Disbelief Sources	freq.	4	18	5	6	33
	pct.	12.12	54.54	15.15	18.18	

^aThe sign test comparison between the distributions for Belief Sources versus Disbelief Sources: chi square = 7.347 (df = 1), p-value less than .05.

^bThe chi square for comparison of the proportion of Belief Sources having All Three Factors each Classified as one of the Berlo et al. factors and that for Disbelief Sources = 6.353 (df = 1), p-value less than .05.

Table 46. Extent to Which the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified with the Largest as the Safety Factor, the Middle as the Qualification Factor, and the Smallest as the Dynamism Factor

Dogmatism	Belief Sources Have Above Classification?		Disbelief Sources Have Above Classification?		
			<u>Yes</u>	<u>No</u>	<u>Total</u>
Low (Open)	Yes	freq. pct.	1 3.03	10 30.30	11 33.33
	No	freq. pct.	5 15.15	17 51.51	22 66.66
	Total	freq. pct.	6 18.18	27 81.81	33 99.99
Medium	Yes	freq. pct.	4 12.12	12 36.36	16 48.48
	No	freq. pct.	3 9.09	14 42.42	17 51.51
	Total	freq. pct.	7 21.21	26 78.78	33 99.99
High (Closed)	Yes	freq. pct.	1 3.03	7 21.21	8 24.24
	No	freq. pct.	4 12.12	21 63.63	25 75.75
	Total	freq. pct.	5 15.15	28 84.84	33 99.99
Total (Across All Three Groups)	Yes	freq. pct.	6 6.06	29 29.29	35 35.35
	No	freq. pct.	12 12.12	52 52.52	64 64.64
	Total	freq. pct.	18 18.18	81 81.81	99 99.99

chi square for Total = 6.244 (df = 1), p-value less than 105

disbelief sources (18%). The observed differences for these characteristics for the three dogmatism groups seemed to be all well within chance expectations.

At least two more kinds of comparisons are suggested by this classification of the individual factors. First, to what extent is each of the Berlo factors represented in the individual solutions? Second, to what extent does each factor in the individual solutions represent each Berlo factor in the same order of magnitude of variance accounted for (i.e., the largest represent safety, the middle-sized represent qualification, the smallest represent dynamism)? The results are summarized in Table 46 through 52. The differences found follow the same sort of pattern thus far found. What reliable differences there are can be accounted for by the source categories, with none accounted for by the dogmatism groups.

Extent Safety Factor is Represented in Individual Solutions-- Across all 198 factor solutions, the Berlo safety factor was represented in 155 (78%). This pattern was fairly general throughout all sub-groups of solutions (see Table 47). For slightly more than half of all solutions (54%), the largest factor was classifiable as safety. Again, the overall pattern was general for all sub-groups of solutions (see Table 48). No differential

tendencies were found for the way the safety factor was represented in the sub-groups of individual solutions. As will be clear from the following descriptions, the safety factor will have the greatest representation of the three Berlo factors among the individual factors.

Extent Qualification Factor is Represented in Individual Solutions-- On an overall basis, the qualification factor is represented in the individual solutions in a little more than half of the 198 solutions (54%) irrespective of the amount of variance accounted for. When size of the individual solution factor is considered, qualification is represented by the middle-sized factor in slightly more than a third of all solutions (37%). The solutions for belief and disbelief sources differ on both characteristics. Belief source solutions are more likely to have a factor representative of the Berlo qualification dimension (63%) than are the disbelief source solutions (45%) (see Table 49). Similarly, the factor representative of qualification is more likely to be the middle-sized one for belief sources (54%) than it is for disbelief sources (28%) (see Table 50).

Extent Dynamism Factor is Represented in Individual Solutions-- In terms of representation in all solutions, the dynamism factor is tied to qualification (54%). Dynamism is representative of the smallest individual factor in about a

Table 47. Extent to Which One of the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Safety Factor

Dogmatism	Belief Sources Have Safety Factor?		Disbelief Sources Have Safety Factor?		
			Yes	No	Total
Low (Open)	Yes	freq.	19	8	27
		pct.	57.57	24.24	81.81
	No	freq.	4	2	6
		pct.	12.12	6.06	18.18
	Total	freq.	23	10	33
	pct.	69.69	30.30	99.99	
Medium	Yes	freq.	21	3	24
		pct.	63.63	9.09	72.72
	No	freq.	8	1	9
		pct.	24.24	3.03	27.27
	Total	freq.	29	4	33
	pct.	87.87	12.12	99.99	
High (Closed)	Yes	freq.	20	7	27
		pct.	60.60	21.21	81.81
	No	freq.	5	1	6
		pct.	15.15	3.03	18.18
	Total	freq.	25	8	33
	pct.	75.75	24.24	99.99	
Total	Yes	freq.	60	18	78
		pct.	60.60	18.18	78.78
	No	freq.	17	4	21
		pct.	17.17	4.04	21.21
	Total	freq.	77	22	99
	pct.	77.77	22.22	99.99	

Table 48. Extent to Which the Largest Factor in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Safety Factor

Dogmatism	Largest Factor for Belief Sources Classified as Safety?		Largest Factor for Disbelief Sources Classified as Safety?		
			<u>Yes</u>	<u>No</u>	<u>Total</u>
Low (Open)	Yes	freq. pct.	9 27.27	10 30.30	19 57.57
	No	freq. pct.	7 21.21	7 21.21	14 42.42
	Total	freq. pct.	16 48.48	17 51.51	33 99.99
Medium	Yes	freq. pct.	9 27.27	11 33.33	20 60.60
	No	freq. pct.	6 18.18	7 21.21	13 39.39
	Total	freq. pct.	15 45.45	18 54.54	33 99.99
High (Closed)	Yes	freq. pct.	8 24.24	10 30.30	18 54.54
	No	freq. pct.	10 30.30	5 15.15	15 45.45
	Total	freq. pct.	18 54.54	15 45.45	33 99.99
Total (Across)	Yes	freq. pct.	26 26.26	31 31.31	57 57.57
	No	freq. pct.	23 23.23	19 19.19	42 42.42
	Total	freq. pct.	49 49.49	50 50.50	99 99.99

Table 49. Extent to Which One of the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Qualification Factor

Dogmatism	Belief Sources Have Qualification Factor?		Disbelief Sources Have Qualification Factor		
			Yes	No	Total
Low (Open)	Yes	freq. pct.	7 21.21	14 42.42	21 63.63
	No	freq. pct.	9 27.27	3 9.09	12 36.36
	Total	freq. pct.	16 48.48	17 51.51	33 99.99
Medium	Yes	freq. pct.	10 30.30	12 36.36	22 66.66
	No	freq. pct.	6 18.18	5 15.15	11 33.33
	Total	freq. pct.	16 48.48	17 51.51	33 99.99
High (Closed)	Yes	freq. pct.	6 18.18	13 39.39	19 57.57
	No	freq. pct.	7 21.21	7 21.21	14 42.42
	Total	freq. pct.	13 39.39	20 60.60	33 99.99
Total (Across all Three Groups)	Yes	freq. pct.	23 23.23	39 39.39	62 62.62
	No	freq. pct.	22 22.22	15 15.15	37 37.37
	Total	freq. pct.	45 45.45	54 54.54	99 99.99

Chi square for Total = 3.879 (df = 1), p-value less than .05

Table 50. Extent to Which the Middle Sized Factor in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Qualification Factor

	Middle Factor for Belief Sources Classified as Qualification?		Middle Factor for Disbelief Sources Classified as Qualification?		
			<u>Yes</u>	<u>No</u>	<u>Total</u>
Dogmatism					
Low (Open)	Yes	freq. pct.	2 6.06	13 39.39	15 45.45
	No	freq. pct.	6 18.18	12 36.36	18 54.54
	Total	freq. pct.	8 24.24	25 75.75	33 99.99
Medium	Yes	freq. pct.	6 18.18	12 36.36	18 54.54
	No	freq. pct.	4 12.12	11 33.33	15 45.45
	Total	freq. pct.	10 30.30	23 69.69	33 99.99
High (Closed)	Yes	freq. pct.	2 6.06	10 30.30	12 36.36
	No	freq. pct.	8 24.24	13 39.39	21 63.63
	Total	freq. pct.	10 30.30	23 69.69	33 99.99
Total (Across All Three Groups)	Yes	freq. pct.	10 10.10	35 35.35	45 45.45
	No	freq. pct.	18 18.18	36 36.36	54 54.54
	Total	freq. pct.	28 28.28	71 71.71	99 99.99

chi square for Total = 4.830 (df = 1), p-value less than .05

Table 51. Extent to Which One of the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Dynamism Factor

Dogmatism	Belief Sources Have Dynamism Factor?		Disbelief Sources Have Dynamism Factor		
			Yes	No	Total
Low (Open)	Yes	freq. pct.	11 33.33	12 36.36	23 69.69
	No	freq. pct.	5 15.15	5 15.15	10 30.30
	Total	freq. pct.	16 48.48	17 51.51	33 99.99
Medium	Yes	freq. pct.	11 33.33	14 42.42	25 75.75
	No	freq. pct.	4 12.12	4 12.12	8 24.24
	Total	freq. pct.	15 45.45	18 54.54	33 99.99
High (Closed)	Yes	freq. pct.	6 18.18	14 42.42	20 60.60
	No	freq. pct.	2 6.06	11 33.33	13 39.39
	Total	freq. pct.	8 24.24	25 75.75	33 99.99
Total	Yes	freq. pct.	28 28.28	40 40.40	68 68.68
	No	freq. pct.	11 11.11	20 20.20	31 31.31
	Total	freq. pct.	39 39.39	60 60.60	99 99.99

chi square for Total = 15.373 (df = 1), p-value less than .05

Table 52. Extent to Which the Smallest Factor in the Three Factor Rotated Solutions of the Individual Analyses Could be Classified as the Dynamism Factor

Dogmatism	Smallest Factor for Belief Sources Classified as Dynamism		Smallest Factor for Disbelief Sources Classified as Dynamism		
			Yes	No	Total
Low (Open)	Yes	freq. pct.	3 9.09	12 36.36	15 45.45
	No	freq. pct.	3 9.09	15 45.45	18 51.51
	Total	freq. pct.	6 18.18	27 81.81	33 99.99
Medium	Yes	freq. pct.	4 12.12	15 45.45	19 57.57
	No	freq. pct.	5 15.15	9 27.27	14 42.42
	Total	freq. pct.	9 27.27	24 72.72	33 99.99
High (Closed)	Yes	freq. pct.	4 12.12	12 36.36	16 48.48
	No	freq. pct.	1 3.03	16 48.48	17 51.51
	Total	freq. pct.	5 15.15	28 84.84	33 99.99
Total (Across All Three Groups)	Yes	freq. pct.	11 11.11	39 39.39	50 50.50
	No	freq. pct.	9 9.09	40 40.40	49 49.49
	Total	freq. pct.	20 20.20	79 79.79	99 99.99

chi square for Total = 17.571 (df = 1), p-value less than .05

third of the solutions (35%). The general pattern of the sub-group differences for dynamism is about the same as it was for qualification. The solutions for belief sources are more likely than the solutions for disbelief sources not only to have one of the factors representative of the Berlo dynamism dimension (69% vs. 39%) but also for it to be the smallest one (50% vs. 20%) (see Tables 51 and 52).

Merging of Qualification and Dynamism in Individual Solutions-- These findings show that on an overall basis, safety was more likely to be represented than either qualification or dynamism. When this tendency is examined for the two kinds of sources separately, the tendency still holds but is much more pronounced for the disbelief sources than for the belief sources. Can these differences be accounted for in terms of Berlo dimensions? Until now, the discussion has been only in terms of when an individual factor was representative of a single Berlo dimension. However, in Table 43, it can be noted that in 61 of the 198 individual solutions (31%) there was one factor which was representative by our definition of two or more Berlo factors. Nearly three-fourths of such cases (44) involved a combination of the qualification and dynamism dimensions. Table 53 examines the degree to which the various sub-groups of solutions exhibit

4

the tendency to merge Berlo's qualification and dynamism factors. As is obvious from the table, the overwhelming tendency is for such merging to occur for the disbelief sources (36%) rather than for the belief sources (8%). If the four pairs of solutions for which the merging is exhibited for both the belief and disbelief sources are ignored, only four solutions merged the two Berlo factors for the belief and not for the disbelief sources, whereas for thirty-two solutions, the tendency was in the reverse direction. Merging the Berlo factors for the disbelief but not for the belief sources was eight times more likely with this sample than was the opposite. The merging of the two dimensions occurs in the solution sub-groups inversely with the degree to which the two dimensions are represented separately by individual factors.

Brief Summary of Findings

Four hypotheses were tested in this study. Two hypotheses concerned the differences in the dimensions of source evaluation which would be employed for two kinds of sources. The two kinds of sources included those judged to have beliefs and ideas similar to the subjects' own beliefs and ideas and those judged to have beliefs and ideas different from their own. The specific operationalizations used in the

Table 53. Extent to Which One of the Factors in the Three Factor Rotated Solutions of the Individual Analyses Could be Characterized as a Merging of the Qualification and Dynamism Factors

Dogmatism	Merging Present for Belief Sources?		Merging Present for Disbelief Sources?		
			Yes	No	Total
Low (Open)	Yes	freq. pct.	2 6.06	1 3.03	3 9.09
	No	freq. pct.	9 27.27	21 63.63	30 90.90
	Total	freq. pct.	11 33.33	22 66.66	33 99.99
Medium	Yes	freq. pct.	1 3.03	1 3.03	2 6.06
	No	freq. pct.	8 24.24	23 69.69	31 93.93
	Total	freq. pct.	9 27.27	24 72.72	33 99.99
Low (Closed)	Yes	freq. pct.	1 3.03	2 6.06	3 9.09
	No	freq. pct.	15 45.45	15 45.45	30 90.90
	Total	freq. pct.	16 48.48	17 51.51	33 99.99
Total (Across All Three Groups)	Yes	freq. pct.	4 4.04	4 4.04	8 8.08
	No	freq. pct.	32 32.32	59 59.59	91 91.91
	Total	freq. pct.	36 36.36	63 63.63	99 99.99

chi square for Total = 20.250 (df = 1), p-value less than .05

tests were designed to index the number of dimensions of individual source evaluation, the degree of differentiation of them, and the degree to which they corresponded to the Berlo results. The predictions were that the number and differentiation of the individual dimensions of source evaluation would be greater for belief sources than for disbelief sources. It was also predicted that there would be differences between the two kinds of sources in the degree to which the individual dimensions of source evaluation would correspond to the Berlo dimensions of source evaluation. These hypotheses were generally supported (Hypotheses I and III).

Two other hypotheses were concerned with the relationship between dogmatism and the individual dimensions of source evaluation. These were concerned with the same characteristics of the dimensions of source evaluation for the same two kinds of sources as were the other two hypotheses. These hypotheses were generally not supported (Hypothesis II and IV). Little can be inferred from the results of this study about the relationship between dogmatism and the individual dimensions of source evaluation.

CHAPTER IV

DISCUSSION AND CONCLUSIONS

Summary of Findings

Hypothesis I-- Hypothesis I predicted that the individual factor solutions for the belief sources would have a greater number of dimensions of source evaluation and would exhibit greater differentiation than would the factor solutions for the disbelief sources. Table 54 summarizes the findings for Hypothesis I for the eleven operationalizations of the dependent variable, "number and/or differentiation of dimensions of source evaluation or credibility." Results for eight of the eleven indices were statistically significant and in the direction predicted by Hypothesis I. The conclusion is that the results of this study do generally support Hypothesis I. Individual subjects' dimensions of source evaluation (credibility) for sources judged as having beliefs similar to the subjects' own beliefs are more numerous and more greatly differentiated than are the corresponding dimensions for sources judged not to have belief similar to the subjects' own.

Hypothesis II-- Hypothesis II predicted that the difference between the number of dimensions and their degree

Table 54. Summary of Findings Related to Hypotheses I and II

<u>Dependent Variable</u>	<u>Hypothesis I Belief (B) vs. Dis- belief(D) Sources</u>	<u>Hypothesis II Low (L) vs. High (H) Dogmatism</u>
<u>NUMBER OF DIMENSIONS</u>		
1 Number of factors in rotated solution meeting Kiel-Wrigley criterion set at three	B greater than D	not significant
2 Proportion of variance accounted for by one factor solution	not significant	not significant
3 Proportion of variance accounted for by two factor solution	B less than D	not significant
4 Proportion of variance accounted for by three factor solution	B less than D	not significant
5 Proportion of variance accounted for by four factor solution	B less than D	not significant
<u>DIFFERENTIATION OF DIMENSIONS</u>		
6 Proportion of total variance accounted for by largest factor in two rotated solution	not significant	not significant
7 Proportion of total variance accounted for by largest factor in three factor rotated solution	not significant	not significant
8 Proportion of total variance accounted for by largest factor in four factor rotated solution	B less than D	not significant
9 Simple structure index or proportion of common variance accounted for by largest loadings in two factor rotated solution	B less than D	L less than H

Table 54--continued

10	Simple structure index or proportion of common variance accounted for by largest loadings in three factor rotated solution	B less than D	not significant
11	Simple structure index or proportion of common variance accounted for by largest loadings in four factor rotated solution	B less than D	not significant

of differentiation for belief sources and for disbelief sources would be greater for low dogmatics (open system) than for high dogmatics (closed systems). Table 54 summarizes the findings related to this hypothesis for each of the eleven separate operationalizations. The results support the hypothesis in only one of the eleven tests. The conclusion is that the results of this study fail to support Hypothesis II. Consequently, nothing can be inferred from this study about the differences between high and low dogmatics regarding the individual dimensions of source evaluation for sources either judged to have beliefs similar to the subjects' own or judged to have beliefs which are different.

Hypothesis III-- The primary focus of the analysis for Hypothesis III was on the degree to which individual dimensions or source evaluation corresponded to the results obtained by Berlo for the two kinds of sources (belief vs. disbelief). The hypothesis stated only that the nature or kind of dimensions of source evaluation for belief source would differ from those of disbelief sources. The hypothesis was offered to facilitate the comparisons of the three factor rotated individual solutions with the overall Berlo three factor analysis solution. Sixteen more or less systematic dichotomous variables were developed in hopes of

getting at aspects of the degree of correspondence. Table 55 summarizes the findings related to this hypothesis for these variables. Results for thirteen of the sixteen indices show statistically significant differences between the two kinds of sources. The conclusion is that Hypothesis III is supported by the results of this study. The dimensions of source evaluation and their degree of correspondence with the Berlo dimensions for sources judged to have beliefs similar to the subjects' own beliefs do differ from the dimensions for sources judged to have beliefs not similar to the subjects' own. On an overall basis, the dimensions for the belief sources correspond more to the Berlo dimensions than do the dimensions for the disbelief sources. On a factor to factor (dimension to dimension) basis generally, no differences were found for the Berlo safety factor. The differences come into play for the qualification and dynamism factors. Belief sources exhibit a greater tendency for these factors to be present than do the disbelief sources. Finally, there was observed what can be termed a merging of the Berlo qualification and dynamism factors into a single dimension. The tendency to do this was much greater for the disbelief sources than for the belief sources.

Hypothesis IV-- Hypothesis IV mirrored Hypothesis III. Instead of exploring the differences between source categories,

Table 55. Summary of Findings Related to Hypothesis III and IV

Dichotomous Characteristic of Individual Three Factor Rotated Solution	Hypothesis III Belief (B) vs. Disbelief (D) Sources	Hypothesis IV Low (L) vs. High (H) Dogmatism
1 Degree Kiel-Wrigley criterion solution is three factor solution	B less than D	not significant
2 Number of different factors into which the three Berlo factors map using index of factorial similarity	B greater than D	L greater than H (for disbelief sources only)
3 Degree three factor solutions are judged an adequate match with Berlo factors using index of fac. sim.	B greater than D	L less than H (both B & D judged inadequate)
4 Degree Berlo safety factor maps into largest factor using index of factorial similarity	B greater than D	L greater than H (both B & D map into largest)
5 Degree Berlo qualifi- cation factor maps into middle-sized factor using index of factorial similarity	not significant	not significant
6 Degree Berlo dynamism factor maps into smallest factor using index of factorial similarity	B greater than D	not significant
7 Number of factors repre- senting Berlo dimensions or factors	B greater than D	not significant
8 Degree all three Berlo factors are represented in three factor solution	B greater than D	not significant
9 Degree all three Berlo factors are represented in three factor solution with: safety, largest; qualification, next; dynamism, smallest	B greater than D	not significant

Table 55--continued

10	Degree safety factor is represented by any one of the factors	not significant	not significant
11	Degree safety factor is represented by largest factor	not significant	not significant
12	Degree qualification factor is represented by any one of the factors	B greater than D	not significant
13	Degree qualification factor is represented by middle-sized factor	B greater than D	not significant
14	Degree dynamism factor is represented by any one of the factors	B greater than D	not significant
15	Degree dynamism factor is represented by smallest factor	B greater than D	not significant
16	Degree one of factors represents merging of qualification and dynamism dimensions	B less than D	not significant

however, IV explored the differences between groups of subjects. Specifically, Hypothesis IV predicted that high and low dogmatics would differ in the nature or kind of dimensions of source evaluation used and in the degree of correspondence of these dimensions to the Berlo dimensions. The same set of variables was used for both hypotheses (III and IV). The summary of findings is contained in Table 55. Statistically significant differences were found for only three of the sixteen variables. Also, these differences are difficult to interpret. The conclusion is that Hypothesis IV is not generally supported by the results of this study. Consequently, nothing can be inferred from this study about the differences between high and low dogmatics regarding the nature or kind of individual dimensions of source evaluation and their degree of correspondence to the dimensions of source evaluation found by Berlo.

Rokeach's Belief System Theory

Two hypotheses for this study (I and II) were derived directly from notions expressed in Rokeach's belief system theory. These hypotheses were concerned primarily with structural aspects of the dimensions of source evaluation as they relate to the structure of the overall belief-disbelief systems. One of the basic notions in Rokeach's

theory is that there is variation in the structure of all peoples' belief-disbelief systems. There is greater differentiation of the structure of sub-systems of the dis-belief system the more closely the sub-system correspond to the individual's own belief system. Rokeach talks about this aspect in terms of the location of the various sub-systems along the belief-disbelief continuum. In this study, two groups of communication sources were characterized by their location along the belief-disbelief continuum. Hypothesis I predicted that the individual dimensions of source evaluation for the sources located near the belief end of the belief-disbelief continuum would be structurally more differentiated than would the dimensions for the sources located near the disbelief end. This hypothesis, as indicated, was generally supported. Hence, one of the more basic notions which Rokeach draws upon in building his higher level theory was supported by the results of this study.

In developing the defining characteristics of the open and closed mind, or dogmatism, Rokeach draws upon the general characteristic that structural differentiation decreases in the sub-systems of the belief-disbelief systems the closer they are located to the disbelief end of the belief-disbelief continuum. For the closed mind or high dogmatic, this decrease in differentiation will be much more pronounced than it will

be for the open mind or low dogmatic. Hypothesis II made this prediction about the relationship between the individual dimensions of source evaluation and dogmatism. The results of this study failed to support this hypothesis and hence Rokeach's more general notions. Speculation as why this happened is contained in the next section.

Generality of the Berlo Dimensions of Source Evaluation Across Subjects

Hypotheses II and IV were concerned primarily with the generality of the dimensions of source evaluation across subjects. The results failed to support both hypotheses. Hence, little can reasonably be inferred. From a statistical standpoint, failure to detect differences could have been primarily due to one of two situations. Either the variance of the dependent measures over all observations was so small that virtually any sub-grouping of subjects would preclude the finding of reliable differences or the observed variance was large enough but it was clearly not distributed to produce reliable differences for the categories employed in the study. The latter case obtained in this study. The dogmatism categories failed to account for the variance. The between subjects variance for the dependent measures included in this study will have to await future research to be explained.

Speculation as to why the expected differences did not emerge can be offered from at least two bases. It is possible that the revised scale as used in this study failed to operationalize dogmatism in a way consistent with Rokeach's theory for some reason with this particular set of subjects. The part of the theory which was confirmed in this study was not dependent on the measure of dogmatism employed. This would suggest that this study's application of the theory had some degree of validity. The other basis relates to the degree to which the stimuli the subjects were asked to, in effect, classify can be considered to have high syndrome relevance. White, Alter, and Radin (1965) did observe differentiation differences in the conceptual categories employed by high and low dogmatics in the classification of highly syndrome-relevant stimuli. With stimuli of low syndrome relevance, no differences were observed. It is possible that the evaluations of sources required in this study were sufficiently specific and common across people that they cannot be considered to have high syndrome relevance to dogmatism. The same may be said of the situation implicit in each source description in which any meaningful evaluation could occur. Source evaluation can be considered as a highly specific aspect of the general notion of person perception (Tagiuri and Petrullo, 1958; Brunner and Tagiuri, 1954). Possibly Rokeach's dogmatism

theory may be more useful in explaining differences in the general way people perceive other people rather than in some highly detailed specific aspect such as source credibility. Attention had been given to syndrome relevance of the stimuli and it was concluded that it was high. It is possible this assumption was in error.

In the secondary analysis of the Wozniak data, differences were found which related to dogmatism. None were found for this study. Why? Another possible explanation might lie in the difference between the extreme dogmatism groups. In this study, the mean dogmatism score difference between the high and low groups was about 20 points on a 20 item scale. In the analysis of the Wozniak data, the difference between the high and low groups was nearly 80 points on a 40 item scale. The two groups were nearly twice as extreme in their mean dogmatism for the Wozniak analysis as they were for this study. This could be another reason why no differences were found.

In summary, nothing can be inferred from the results of this study about the generality of the Berlo dimensions of source evaluation or credibility across people.

Generality of the Berlo Dimensions of Source Evaluations Across Sources

Hypotheses I and III were concerned primarily with the generality of the dimensions of source evaluation across sources. The results generally support both hypotheses.

Differences were observed in the individual dimensions of source evaluation between the two kinds of sources used for this study. Belief sources tended to exhibit dimensions of source evaluation which more closely corresponded to the Berlo dimensions than did disbelief sources. When specific factors are examined individually, this difference between the two kinds of sources is exhibited only for the qualification and dynamism dimensions. Source differences for the safety dimension were minimal.

Only about half of the belief sources' solutions could be characterized as having factors representative of all three Berlo dimensions. For the disbelief sources, this dropped to less than a third. On this kind of overall basis, the generality of the Berlo dimensions to the individual dimensions for the belief sources leaves something to be desired. Generality is even less for the disbelief sources. When concerned with some kind of multi-dimensional evaluation of sources, one must take into account the kinds of sources being evaluated. One cannot assume that the same pattern of dimensions will cut across all sources.

If one is willing to settle for something less and is content with evaluations along a specific dimensions, the generality outlook can be improved. Slightly more than ninety per cent of all individual three factor solutions had at least one factor representative of one of the Berlo dimensions. This was true for both kinds of sources. Confined specifically to the safety factor, nearly eighty per cent of all solutions had a factor representative of this dimension. This held for both kinds of sources. The Berlo safety factor, then, is quite general across the individual dimensions of source evaluation across both kinds of sources. The generality of the qualification and dynamism factors approaches this generality for belief sources only. About two-thirds of the solutions for belief sources have a factor representative of the Berlo qualification factor. The same is true for the dynamism dimension. The corresponding figures for the disbelief sources for the two dimensions are slightly less than half of the solutions for qualification and even less (about 40%) for dynamism. The generality here leaves much to be desired.

The Berlo results showed the safety factor to be the largest, qualification to be the next in size, with dynamism being the smallest. If this further restriction is taken into account when assessing the generality, it will be

lowered for all the cases discussed above. However, one probably would not want to get this restrictive for most purposes.

In final summary, the generality of the safety dimension is the one which approaches an acceptable level for most conceivable purposes. At least, it does for the kinds of sources included in this study. The same is probably true for the qualification and dynamism dimensions but for belief sources only. For the latter two factors on the disbelief sources, the generality is lower. Generality is low if there must be representatives of all three Berlo factors among the individual dimensions of source evaluation. This is true for both kinds of sources, except that for disbelief sources, it is even less likely that all three Berlo dimensions will be represented.*

*For additional comments on the generality of the Berlo dimensions across subjects see Appendix I.

Suggestions for Future Research

One obvious area for future research is in the matter of the correlates of the differences in the individual dimensions of source evaluation. Dogmatism was offered as one of the correlates in this study. However, no reliable relationship was found between dogmatism and variation in the individual dimensions of source evaluation. Further research is needed to isolate some of the correlates.

Linear correlation measures and factor analysis were used to impose structure on the subjects' evaluations of the sources using the semantic differential bi-polar adjective scales. Other techniques are available for imposing structure on source evaluation data. McQuitty (1964, 1966) offers a whole series of clustering techniques using non-linear indices of association. A number of these techniques provide a means of characterizing the structure in a hierarchical manner. Hays (1958) and Kelly (1955) offer techniques which can briefly be described as non-metric factor analyses. Other techniques for imposing structure on source evaluation data should be explored. It is quite possible that one or more of these alternative techniques for characterizing structure may prove to be highly useful or theoretically meaningful in the study of the dimensions of source evaluation. Characterizing the dimensions of source evaluation in a hierarchical manner has a certain appeal.

The type of factor analysis used in this study and by Berlo yielded orthogonal or uncorrelated factors. Does this imply that the dimensions thus isolated are psychologically independent? It is not difficult to argue that evaluations of at least some kinds of sources along a safety dimension should be curvilinearly related to evaluations along a dynamism dimension. For example, consider two groups of important national or international political leaders, one rated high in safety (low threat) and the other low in safety (high threat). It would seem quite reasonable that both groups would be rated high in dynamism (highly active). Factor analysis need not necessarily produce uncorrelated factors. There are a number of oblique rotational models available which yield correlated factors. This would be useful if the dependency among factors was linear. McQuitty's non-linear techniques might be useful for exploring dependencies of a non-linear nature. Further work needs to be done in exploring the "psychological dependence or independence" of the dimensions of source evaluation. To what extent does information about the ratings of various kinds of sources on one dimension imply information about the rating they have on one or more of the other dimensions?

Suppose that people do differ reliably in the nature or kind of dimensions of source evaluation. Can typologies of the dimensions of source evaluation be developed and characterized? Is the variation of the dimensions of source evaluation spread evenly over a wide range? Or if typologies are to be developed, is the variation spread over a wide range but with a few areas of high concentration with most other areas of rather low concentration? If typologies are possible, can they be indexed economically? In other words, what are the correlates of the typologies? If typologies can be developed, there is the obvious implication that source influence in the communication process would differ among them. Would this mean that different communication strategies would have to be developed for the various typologies for maximum communicative effectiveness? Further research is needed to explore such questions.

There is at least one important area which seems to be begging for further research. This is consideration of the dimensions of source evaluation as the dependent outcome of manipulation of elements in the message or communication situation. If source evaluation or credibility is to become a viable concept, it must be more than something a source statistically carries with him through a communication situation. Theory and research must be developed which will

map changes in manipulatable elements of the message or communication situation into changes in the value or structure of the dimensions of source evaluation. Such research is contingent on the development of useful and reliable means of characterizing the dimensions of source evaluation. It is hoped this study has laid some of the groundwork for achieving this objective. However, much more needs to be done.

BIBLIOGRAPHY

- Anderson, K., and Clevenger, T., Jr., A Summary of Experimental Research in Ethos. Speech Monographs, 1963, 30, 59-78.
- Berlo, D. K., The Process of Communication. New York: Holt, 1960.
- Berlo, D. K., Attitude Change Abstracts. Unpublished research, Department of Communication, Michigan State University, 1967.
- Berlo, D. K., Lemert, J. B., and Mertz, R. J., Dimensions for Evaluating the Acceptability of Message Sources. Report of research supported under Contract #OCD-PS-6471, Office of Civil Defense, Department of Defense, as part of Michigan State University's continuing research program on the public acceptance of civil defense messages, 1966.
- Brown, R. W., Is Boulder Sweet or Sour?, Contemporary Psychology, 1958, 3, 113-115.
- Brunner, J. S., and Tagirur, R., The Perception of People. In G. Lindzey (ed.), Handbook of Social Psychology, Vol. II. Reading, Mass.: Addison-Wesley, 1954, 634-654.
- Carroll, J. B., Review of Measurement of Meaning. Language, 1959, 35, 58-77.
- Cattell, R. B., Factor Analysis. New York: Harper, 1952.
- Cohen, A. R., Attitude Change and Social Influence. New York: Basic Books, 1964.
- Creaser, J. W., An Aid in Calculating Q-sort Factor-arrays. Journal of Clinical Psychology, 1955, 11, 195-196.
- Darnell, D. K., Concept Scale Interaction in the Semantic Differential, Journal of Communication, 1966, 16, 104-115.

- Guilford, J. P., Psychometric Methods. New York: McGraw-Hill, 1954.
- Gulliksen, H., How to Make Meaning More Meaningful, Contemporary Psychology, 1958, 3, 115-119.
- Harmon, H. H., Modern Factor Analysis. Chicago: University of Chicago Press, 1960.
- Hays, W. L., An Approach to the Study of Trait Implication and Trait Similarity. In R. Tagiuri and L. Petrullo (Eds.), Person Perception and Inter-personal Behavior. Stanford: Stanford University Press, 1958, pp. 289-299.
- Horst, P., Factor Analysis of Data Matrices. New York: Holt, 1965.
- Hovland, C. I., Janis, I. J., and Kelly, H. H., Communication and Persuasion. New Haven: Yale University Press, 1953.
- Kelly, G. A., The Psychology of Personal Constructs. New York: Norton, 1955, Vol. I.
- Kiel, D. F., Effects upon the Factorial Solution of Rotating Varying Numbers of Factors with Differing Initial Communalities Estimates. Unpublished master's thesis, Michigan State University, 1966.
- Kiel, D. F., and Wrigley, C., Effects upon the Factorial Solutions of Rotating Varying Numbers of Factors, American Psychologist, 1960, 15, 487-488. (Abstract)
- Klapper, J. T., The Effects of Mass Communication. Glencoe: Free Press, 1960.
- Lemert, J. B., Dimensions of Source Credibility. Paper presented to the A.E.J. Convention, Lincoln, Nebraska, 1963.
- Lindquist, E. F., Design and Analysis of Experiments in Psychology and Education. Boston: Houghton Mifflin, 1953.
- McCroskey, J. C., Scales for Measurement of Ethos. Speech Monographs, 1966, 33, 65-72.

- MacLean, M. S., Jr., Danbury, T., and Talbott, A. D., Civil Defense Belief Patterns: (II) Source Credibility. A report prepared for the Office of Civil Defense, Department of Defense by the Department of Communication, College of Communication Arts, Michigan State University, East Lansing, Michigan, April 1963.
- MacLean, M. S., Jr., Danbury, T., and Talbott, A. D., Civil Defense Belief Patterns: (VIII) Technical Summary. A report prepared for the Office of Civil Defense, Department of Defense by the Department of Communication, College of Communication Arts, Michigan State University, East Lansing, Michigan, March 1964.
- McQuitty, L. L., A Statistical Method for Studying Personality Integration. In O. H. Mowrer (Ed.), Psychotherapy Theory and Research. New York: Ronald Press, 1953, pp. 414-462.
- McQuitty, L. L., Capabilities and Improvements of Linkage Analysis as a Clustering Method. Educational and Psychology Measurement, 1964, 24, 441-456.
- McQuitty, L. L., Single and Multiple Hierarchical Classification by Reciprocal Pairs and Rank Order Types. Educational and Psychology Measurement, 1966, 26, 253-265.
- Osgood, C. E., Studies on the Generality of Affective Meaning Systems. American Psychologist, 1962, 17, 10-28.
- Osgood, C. E., Suci, G. J., and Tannenbaum, P. H., The Measurement of Meaning. Urbana: University of Illinois Press, 1957.
- Powell, F. A., Open- and Closed-Mindedness and the Ability to Differentiate Source and Message. Journal of Abnormal Social Psychology, 1962, 65, 61-64.
- Rokeach, M. J., The Open and Closed Mind. New York: Basic Books, 1960.
- Siegel, S., Nonparametric Statistics. New York: McGraw-Hill, 1956.

- Stephenson, W. J., The Study of Behavior, Chicago: University of Chicago Press, 1953.
- Tagiuri, R., and Petrullo, L. (eds.), Person Perception and Inter-personal Behavior. Stanford: Stanford University Press, 1958.
- Talbott, A. D., Indexing Belief-Disbelief Systems. Unpublished research, 1964.
- Thomson, G., The Factorial Analysis of Human Ability. London: University of London Press, 1939.
- Thurstone, L. L., Multiple-Factor Analysis. Chicago: University of Chicago Press, 1947.
- Todd, F. J., and Rappoport, L. A., Cognitive Structure Approach to Person Perception. Journal of Abnormal Social Psychology, 1964, 68, 469-478.
- Troldahl, V. C., and Powell, F. A., A Short Form Dogmatism Scale for Use in Field Studies. Social Forces, 1965, 44, 211-214.
- Ware, E. E., Relationships of Intelligence and Sex to Diversity of Individual Semantic Meaning Space. Unpublished doctoral dissertation, University of Illinois, 1958.
- White, B. J., Alter, R. D., and Radin, M., Authoritarianism, Dogmatism and Usage of Conceptual Categories. Journal of Personality and Social Psychology, 1965, 2, 293-295.
- Winer, B. J., Statistical Principles in Experimental Design. New York: McGraw-Hill, 1962.
- Wozniak, D. F., A Factor Analytic Study of Semantic Structures of Closed, Open, and Medium Belief-Disbelief Systems. Unpublished doctoral dissertation, Michigan State University, 1963.

APPENDIX A
Pretest Questionnaire Used

Part I of Phase 01

Number _____

INSTRUCTIONS

You are participating in a study of how people evaluate other persons. In this part of the study, you will be asked to look at the brief description of a number of persons and then to rate each on the degree to which each person has beliefs and ideas which are like your own or are different from your own.

Below are a couple examples of the kinds of descriptions of persons you will be asked to look at:

____ YOUR FAVORITE LOCAL TV NEWSCASTER

____ MAYOR OF THE CITY OF EAST LANSING,
____ GORDON THOMAS

You are to use the ladder scale on the right of each page to rate each person. Please examine this scale. You are to place each person somewhere along the scale according to which position best describes how much that person has beliefs and ideas which are either like your own or are different from your own. After you have decided what position best describes your feelings about the person described, then you would put the number of that position in the blank space to the left of the description.

For example, if you thought that "YOUR LOCAL TV NEWSCASTER" was best described by "HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM YOUR OWN," you would mark it as follows:

____ 7 YOUR FAVORITE LOCAL TV NEWSCASTER

9 HAS BELIEFS AND
IDEAS EXTREMELY
DIFFERENT FROM MY
OWN

8 Very Much
Different

7 HAS BELIEFS AND
IDEAS QUITE A BIT
DIFFERENT FROM MY
OWN

6 Only Slightly
Different

5 Can't Decide or
Has About the
Same Amount of
Beliefs and Ideas
Which Are Like My
Own as Are Different
From My Own

4 Only Slightly
Like

3 HAS BELIEFS AND
IDEAS QUITE A BIT
LIKE MY OWN

Another example, if you thought that "MAYOR OF THE CITY OF EAST LANSING, GORDON THOMAS" was best described as having beliefs and ideas "Very Much Like" my own, you would mark it as follows:

2 Very Much
Like

_____ MAYOR OF THE CITY OF EAST LANSING
GORDON THOMAS

1 HAS BELIEFS AND
IDEAS EXTREMELY
LIKE MY OWN

Before you mark the scale for the first description, please glance over all of the descriptions of persons so you will get an idea of the kinds of persons you will be asked to evaluate. Then go back to the beginning of the descriptions and work your way through without looking back and forth through the items. Do not worry over or puzzle about individual descriptions. It is your immediate feelings about each person described that we want. On the other hand, please do not be careless, because we want your true impressions. Also, please write the numbers in the spaces as clearly and legibly as you can. If you have no questions, please begin.

_____ CONVICTED KILLER OF LEE HARVEY OSWALD, JACK RUBY	9	HAS BELIEFS AND IDEAS EXTREMELY DIFFERENT FROM MY OWN
_____ MEMBER OF THE COMMUNIST PARTY IN ENGLAND		
_____ SECRETARY GENERAL OF THE UNITED NATIONS		
_____ SCOTLAND YARD AGENT IN ENGLAND	8	Very Much Different
_____ HEAVYWEIGHT BOXING CHAMPION CASSIUS CLAY (MUHAMMAD ALI)		
_____ THE PERSON YOU ARE LEAST LIKELY TO GO TO FOR PERSONAL ADVICE	7	HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN
_____ PRESIDENT OF GENERAL MOTORS		
_____ THE MAYOR OF THE CITY I LIVE IN		
_____ SPOKESMAN FOR THE GROUP OF MICHIGAN TEACHERS PICKETING THE STATE LEGISLATURE FOR MORE FINANCIAL SUPPORT TO EDUCATION	6	Only Slightly Different
_____ A PERSON WHOSE OPINION YOU NEITHER RESPECT NOR DIS- RESPECT		Can't Decide or Has About the Same Amount of
_____ REPUBLICAN SENTATE LEADER AND SENATOR FROM ILLINOIS, EVERETT DIRKSEN	5	Beliefs and Ideas Which Are Like My Own as Are Different From My Own
_____ PRIME MINISTER OF GREAT BRITAIN		
_____ GOVERNOR OF A SOUTHERN STATE		
_____ A UNITED STATES SECRET SERVICE AGENT	4	Only Slightly Like
_____ MY MOTHER		

____ VICE-PRESIDENT OF THE
UNITED STATES

____ SYNDICATED NEWSPAPER ADVICE
COLUMNIST, ANN LANDERS

____ THE PERSON I AM MOST LIKELY
TO GO TO FOR PERSONAL ADVICE

____ MY NEXT DOOR NEIGHBOR

____ "YANKEE GO HOME" DEMON-
STRATORS IN A LATIN AMERICAN
COUNTRY

____ CONVICTED GERMAN WAR CRIMINAL
AND ONE TIME ADOLF HITLER'S
DEPUTY, RUDOLF HESS

3 HAS BELIEFS AND
IDEAS QUITE A BIT
LIKE MY OWN

2 Very Much
Like

1 HAS BELIEFS AND
IDEAS EXTREMELY
LIKE MY OWN

___ CUBAN PRIME MINISTER	
___ A TEACHER IN THE SCHOOL SYSTEM WHERE I LIVE	9 HAS BELIEFS AND IDEAS EXTREMELY DIFFERENT FROM MY OWN
___ THE PERSON I KNOW WHOM I DISLIKE THE MOST	
___ NATIONAL COMMANDER OF THE AMERICAN LEGION	8 Very Much Different
___ COMMANDER IN CHIEF OF THE RUSSIAN ARMY	
___ MEMBER OF THE COMMUNIST PARTY IN RED CHINA	7 HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN
___ MEMBER OF THE GOVERNMENT OF FRANCE WHO IS A COMMUNIST	
___ NATIONAL PRESIDENT OF THE CHAMBER OF COMMERCE	
___ DEMOCRATIC SENATOR FROM NEW YORK, ROBERT F. KENNEDY	6 Only Slightly Different
___ BRITISH DEMONSTRATORS WHO ARE AGAINST THE U.S. NUCLEAR SUBMARINES DOCKING IN ENGLAND	
___ PRESIDENT OF THE UNITED STATES	5 Can't Decide or Has About the Same Amount of Beliefs and Ideas Which are Like My Own as Are Different From My Own
___ THE POPE, SPIRITUAL LEADER OF THE CATHOLIC CHURCH	
___ NUMBER ONE MAN IN NATION-WIDE CRIME SYNDICATE, COSA NOSTRA	4 Only Slightly Like
___ GRAND DRAGON OF THE KLU KLUX KLAN	
___ COMMUNIST PARTY LEADER OF NORTH VIETNAM	3 HAS BELIEFS AND IDEAS QUITE A BIT LIKE MY OWN

____ COMMANDER OF THE TROOPS IN
NORTH ATLANTIC TREATY ORGANI-
ZATION (NATO, OUR ALLIES IN
EUROPE)

2 Very Much
Like

____ DICTATOR OF A LATIN AMERICAN
COUNTRY

____ PRESIDENT OF FRANCE

____ A PERSON I KNOW WHO IS MAKING
A CAREER OUT OF SERVICE IN THE
MILITARY (ANY BRANCH)

1 HAS BELIEFS AND
IDEAS EXTREMELY
LIKE MY OWN

____ NATIONAL PRESIDENT OF THE
UNITED AUTOMOBILE WORKERS,
WALTER RUETHER

LEADER OF THE AMERICAN NAZI PARTY, GEORGE LINCOLN ROCKWELL	
THE PERSON I MARRIED OR AM GOING TO MARRY	9 HAS BELIEFS AND IDEAS EXTREMELY DIFFERENT FROM MY OWN
A YOUNG MAN WHO DEMONSTRATES AGAINST THE WAR IN SOUTH VIET- NAM AND BURNS HIS DRAFT CARD	
GOVERNOR OF A NEIGHBORING STATE	8 Very Much Different
THE MEDICAL DOCTOR I MOST OFTEN GO TO	
A CHAPLAIN IN THE MILITARY	7 HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN
ARCHBISHOP OF CANTERBURY, HEAD OF THE CHURCH OF ENGLAND	
EDITORIAL WRITER OF <u>PRAVDA</u> , THE RUSSIAN NATIONAL NEWSPAPER	
POLICE CHIEF IN A SMALL COUNTRY TOWN IN LATIN AMERICA	6 Only Slightly Different
DEMONSTRATORS AGAINST THE WAR IN SOUTH VIETNAM WHO GREETED PRESIDENT JOHNSON WHEN HE VISITED AUSTRALIA	
HEAD OF THE RUSSIAN SECRET POLICE	5 Can't Decide or Has About the Same Amount of Beliefs and Ideas Which are Like My Own as Are Different From My Own
FORMER SENATOR AND REPUBLICAN PRESIDENTIAL CANDIDATE, BARRY GOLDWATER	
EDITOR-IN-CHIEF OF THE <u>NEW YORK</u> <u>TIMES</u>	4 Only Slightly Like
FORMER PRESIDENT OF THE UNITED STATES AND GENERAL OF THE ARMY, DWIGHT D. EISENHOWER	
THE POLICE CHIEF IN THE CITY WHERE I LIVE	3 HAS BELIEFS AND IDEAS QUITE A BIT LIKE MY OWN

FORMER GOVERNOR OF MICHIGAN
AND DEMOCRATIC SENATORIAL
CANDIDATE, G. MENNEN (SOAPY)
____ WILLIAMS

2 Very Much
 Like

____ LOCAL RELIGIOUS LEADER OF MY FAITH

MEMBER OF THE STATE LEGISLATURE
____ FROM MY DISTRICT

1 HAS BELIEFS AND
 IDEAS EXTREMELY
 LIKE MY OWN

REPORTER ON THE NEWSPAPER I
____ REGULARLY READ

HEAD OF THE NATIONAL EDUCATION
ASSOCIATION

AMERICAN U2 PILOT WHO WAS CONVICTED
BY THE RUSSIANS OF SPYING ON
RUSSIA, GARY FRANCIS POWERS

9 HAS BELIEFS AND
IDEAS EXTREMELY
DIFFERENT FROM
MY OWN

MY FAVORITE LOCAL TV NEWSCASTER

MY FATHER

COMMANDING GENERAL OF ALL
BRITISH MILITARY UNITS

8 Very Much
Different

A PROSTITUTE

U.S. SECRETARY OF DEFENSE,
ROBERT MCNAMARA

7 HAS BELIEFS AND
IDEAS QUITE A
BIT DIFFERENT
FROM MY OWN

EVANGELIST, DR. BILLY GRAHAM

A PERSON WHOSE OPINION YOU
HAVE VERY LITTLE RESPECT FOR

6 Only Slightly
Different

MEMBER OF THE COMMUNIST PARTY
IN RUSSIA

EDITORIAL WRITER FOR THE
LEADING NEWSPAPER IN FRANCE

NEGRO CIVIL RIGHTS LEADER
AND HEAD OF THE SOUTHERN
CHRISTIAN LEADERSHIP CON-
FERENCE, DR. MARTIN LUTHER
KING, JR.

5 Can't Decide or
Has About the
Same Amount of
Beliefs and Ideas
Which are Like My
Own as Are Different
From My Own

MY BEST FRIEND

CHIEF JUSTICE OF THE UNITED
STATES SUPREME COURT, EARLE
WARREN

4 Only Slightly
Like

FORMER REPUBLICAN VICE-
PRESIDENT AND PRESIDENTIAL
CANDIDATE, RICHARD M. NIXON

___ A POLICEMAN IN MY COMMUNITY

___ REPORTER ON THE LONDON TIMES,
___ A LEADING BRITISH NEWSPAPER

___ U.S. SECRETARY OF STATE,
___ DEAN RUSK

___ BUDDHIST MONK IN SOUTH VIETNAM

___ COMMANDER OF THE NORTH
___ VIETNAMESE COMMUNIST TROOPS
___ FIGHTING IN SOUTH VIETNAM

___ HEAD OF A COMMUNIST FRONT
___ ORGANIZATION IN THE UNITED
___ STATES

___ A STRIP-TEASE DANCER

3 HAS BELIEFS AND
IDEAS QUITE A BIT
LIKE MY OWN

2 Very Much
Like

1 HAS BELIEFS AND
IDEAS EXTREMELY
LIKE MY OWN

____ DIRECTOR OF THE FEDERAL BUREAU OF INVESTIGATION (FBI)	
____ LEADER OF THE AMERICAN COMMUNIST PARTY	9 HAS BELIEFS AND IDEAS EXTREMELY DIFFERENT FROM MY OWN
____ CHAIRMAN OF THE JOINT CHIEFS OF STAFF OF THE UNITED STATES MILITARY SERVICES	
____ COMMANDING GENERAL OF THE UNITED STATES MARINE CORPS	8 Very Much Different
____ MAJORITY LEADER OF THE UNITED STATES SENATE	
____ THE POLICE CHIEF OF PARIS, FRANCE	
____ GOVERNOR OF THE STATE OF MICHIGAN, GEORGE ROMNEY	7 HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN
____ MEMBER OF THE CITY COUNCIL WHERE I LIVE	
____ A MEMBER OF THE COMMUNIST PARTY IN MY HOMETOWN	6 Only Slightly Different
____ THE LEADER OF THE COMMUNIST PARTY IN THE CITY WHERE I LIVE	
____ HEAD OF THE AMERICAN MEDICAL ASSOCIATION	5 Can't Decide or Has About the Same Amount of Beliefs and Ideas Which are Like My Own as Are Different From My Own
____ COMMUNIST PARTY CHAIRMAN OF RED CHINA	
____ RUSSIAN NOVELIST WHO REFUSED THE NOBEL PRIZE FOR LITERATURE, BORIS PASTERNAK	
____ SPOKESMAN FOR THE JOHN BIRCH SOCIETY, JOSEPH WELCH	4 Only Slightly Like
____ STATE DIRECTOR OF CIVIL DEFENSE	

____MANY TIMES SOCIALIST CANDIDATE FOR PRESIDENT OF THE UNITED STATES, NORMAN THOMAS	3	HAS BELIEFS AND IDEAS QUITE A BIT LIKE MY OWN
____LOCAL DIRECTOR OF CIVIL DEFENSE		
____A PERSON I KNOW WHO WAS DRAFTED	2	Very Much Like
____RED CHINESE STUDENTS DEMONSTRATING IN MOSCOW IN PROTEST TO RUSSIA'S POLICIES TOWARD RED CHINA		
____SOCIAL WORKER WHO WORKS IN THE SLUMS OF NEW YORK OR CHICAGO	1	HAS BELIEFS AND IDEAS EXTREMELY LIKE MY OWN
____A PRINCIPAL IN THE SCHOOL SYSTEM WHERE I LIVE		

____ NATIONAL RELIGIOUS LEADER OF
MY FAITH

____ MICHIGAN STATE UNIVERSITY
STUDENTS PICKETING THE EAST
LANSING CITY HALL FOR ALLEGED
____ RACIAL DISCRIMINATION IN HOUSING

9 HAS BELIEFS AND
IDEAS EXTREMELY
DIFFERENT FROM
MY OWN

____ ACCUSED KILLER OF EIGHT STUDENT
NURSES IN CHICAGO, RICHARD SPECK

8 Very Much
Different

____ FORMER RUSSIAN PREMIER, KHRUSCHEV

____ NEGRO CIVIL RIGHTS LEADER AND
HEAD OF THE STUDENT NONVIOLENT
COORDINATING COMMITTEE, STOKLEY
CARMICHAEL

____ A HINDU HOLYMAN IN INDIA

7 HAS BELIEFS AND
IDEAS QUITE A
BIT DIFFERENT
FROM MY OWN

____ A NEGRO CIVIL RIGHTS DEMON-
STRATOR IN THE SOUTH OR A
LARGE CITY

____ PREMIER OF SOUTH VIET NAM,
NGUYEN CAO KY

6 Only Slightly
Different

____ TEAMSTERS UNION PRESIDENT,
JIMMY HOFFA

____ MEMBER OF THE BRITISH PARLIAMENT

____ A NETWORK NEWS COMMENTATOR ON TV

5 Can't Decide or
Has About the
Same Amount of
Beliefs and Ideas
Which are Like My
Own as Are Different
From My Own

____ A PERSON WHOSE OPINION I HIGHLY
RESPECT

____ A NEGRO RIOTER IN THE LOS ANGELES
WATTS RIOT OF LAST YEAR

____ A CONVICTED DOPE PEDDLER

4 Only Slightly
Like

____ HEAD OF SANE, NATIONAL COMMITTEE
TO ABOLISH NUCLEAR BOMB TESTING

____ A WHITE PERSON WHO DEMONSTRATES FOR
NEGRO CIVIL RIGHTS

3 HAS BELIEFS AND
IDEAS QUITE A BIT
LIKE MY OWN

____ A MINISTER, PRIEST, OR RABBI
____ THAT I KNOW PERSONALLY

2 Very Much
 Like

____ REPORTER FOR THE OFFICIAL
____ NEWSPAPER OF THE RED GUARD IN
____ COMMUNIST CHINA

____ FEDERAL DIRECTOR OF CIVIL DEFENSE

1 HAS BELIEFS AND
 IDEAS EXTREMELY
 LIKE MY OWN

____ PRESIDENT OF MICHIGAN STATE
____ UNIVERSITY, JOHN HANNAH

Please complete the following:

Name: _____

Student Number: _____

Age: _____

Sex: Male Female (please circle)

Year in School: Freshman, Sophomore Junior Senior Graduate
(circle one)

Major: _____

Do your parents live in Michigan? yes no (circle one)

Have you traveled in a foreign country? yes No (circle one)

How do you consider yourself politically? ___liberal

(check one)

___conservative

___neither

Marital Status: Married Single (circle one)

Please check the income range which would cover your parent's total income last year:

___under \$1,500
___1,500 to 2,999
___3,000 to 4,499
___4,500 to 5,999
___6,000 to 7,999

___8,000 to 9,999
___10,000 to 14,999
___15,000 to 19,999
___20,000 to 29,999
___30,000 and over

What is your father's occupation?

APPENDIX B

Mean ratings of the person descriptions (sources) on the scale ranging from persons whose beliefs and ideas are very different from my own (9 position) to persons whose beliefs and ideas are very much like my own (1 position) for both the pretest (Spring, 1967) and the main study (Summer, 1967).

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Mean	Rank
Grand Dragon of the Klux Klan	8.6604	80	8.2661	79
Leader of the American Nazi Party, George Lincoln Rockwell	8.3019	79	8.0081	77
Member of the Communist Party in Red China	8.1509	78	8.1371	78
Accused Killer of Eight Student Nurses in Chicago, Richard Speck	8.1509	77	8.2742	80
Communist Party Chairman of Red China	8.1132	76	7.8790	76
Communist Party Leader of North Vietnam	7.9623	75	7.8145	74
The Person You are Least Likely to Go To For Personal Advice	7.9245	74	7.2339	62
Convicted German War Criminal and One Time Adolf Hitler Deputy, Rudolf Hess	7.9057	73	7.7339	72
Head of the Communist Front Organization in the United States	7.9057	72	7.6210	69
Leader of the American Communist Party	7.7736	71	7.7419	73
Member of the Government of France Who is a Communist	7.7547	70	7.3710	64
Cuban Prime Minister	7.6792	69	7.7339	71

Item	Pretest (Spring)			Main Study (Summer)		
	Mean	Rank	Stand. Dev.	Mean	Rank	Stand. Dev.
Commander of the North Vietnamese Communist Troops Fighting in South Vietnam	7.5849	68	1.6342	7.2258	61	1.5133
Number One Man in Nation-Wide Crime Syndicate, Cosa Nostra	7.4717	67	1.3673	7.8387	75	1.2123
Convicted Killer of Lee Harvey Oswald, Jack Ruby	7.3774	66	1.5594	7.7097	70	1.3238
Spokesman for the John Birch Society, Joseph Welch	7.3774	65	1.5346	7.1129	58	1.5784
Member of the Communist Party in England	7.3585	64	1.4948	7.3306	63	1.4068
Editorial Writer of <u>Pravda</u> , The Russian National Newspaper	7.3019	63	1.6123	7.0968	57	1.3093
Head of the Russian Secret Police	7.2830	62	1.6335	7.6129	68	1.4125
A Convicted Dope Peddler	7.2830	61	1.5489	7.5161	67	1.4788
Reporter for the Official Newspaper of the Red Guard in Communist China	7.2830	60	1.4057	7.1613	60	1.4392
Governor of a Southern State	7.2642	59	1.1792	6.5161	46	1.6892
Member of the Communist Party in Russia	7.2075	58	1.6215	7.0645	55	1.3778
A person Whose Opinion you Have Very Little Respect For	7.1887	57	1.6877	7.0161	54	1.5772

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Mean	Rank
A Member of the Communist Party in my Hometown	7.1321	56	7.0806	56
The Leader of the Communist Party in the City where I live	7.0566	55	7.3790	65
Former Russian Premier, Khrushchev	7.0000	54	6.7984	51
Commander in Chief of the Russian Army	6.9811	53	6.7177	50
Heavyweight Boxing Champion, Cassius Clay (Muhammed Ali)	6.8868	52	7.4032	66
Dictator of a Latin American Country	6.8302	51	6.6129	48
Buddhist Monk in South Vietnam	6.8113	50	6.8145	52
A Hindu Holyman in India	6.7925	49	6.2097	42
"Yankee Go Home" Demonstrators in a Latin American Country	6.7547	48	6.6613	49
The Person I Know Whom I Dis- like The Most	6.7547	47	6.4194	45
President of France	6.7170	46	6.5403	47
Red Chinese Students Demonstrating in Moscow in Protest to Russia's Policies Toward Red China	6.6415	45	6.8790	53
A Strip-tease Dancer	6.5849	44	6.3145	44
A Prostitute	6.5472	43	7.1613	59

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Mean	Rank
A Young Man Who Demonstrates Against the War in South Viet- nam and Burns his Draft Card	6.5094	42	6.2419	43
The Pope, Spiritual Leader of the Catholic Church	6.4340	41	5.3065	41
A Negro Rioter in the Los Angeles Watts Riot of Last Year	6.3396		2.1707	2.2853
Negro Civil Rights Leader and Head of the Student Non-Violent Coordinating Committee, Stokely Carmichael	6.2264		1.7502	
Teamsters Union President, Jimmy Hoffa	6.2264		1.6129	
Police Chief in a Small Country Town in Latin America	6.0943		1.3339	
Editorial Writer for the Lead- ing Newspaper in France	6.0189		1.2324	
Former Senator and Republican Presidential Candidate, Barry Goldwater	5.9434		2.2822	
British Demonstrators who are Against the U.S. Nuclear Sub- marines Docking in England	5.9057		1.7350	
Demonstrators against War in South Vietnam who Greeted Presi- dent Johnson when he Visited Australia	5.9057		1.8632	

Item	Pretest (Spring) Stand.		Main Study (Summer) Stand.			
	Mean	Rank	Dev.	Mean	Rank	Dev.
Evangelist, Dr. Billy Graham	5.8868		2.2417			
Former Governor of Michigan and Democratic Senatorial Candidate, G. Mennen (Soapy) Williams	5.7547		1.9005			
President of the United States	5.6226		2.0022			
Archbishop of Canterbury, Head of the Church of England	5.6226		1.5717			
The Police Chief of Paris, France	5.5849		1.0083			
Premier of South Viet Nam, Nguyen Cao Ky	5.5849		1.6575			
Many Times Socialist Candidate For President of the United States, Norman Thomas	5.5472		1.6821			
National Commander of the American Legion	5.4906		1.5765			
Vice-President of the United States	5.4717		2.2498			
My Next Door Neighbor	5.3585		1.9719			
A Person Whose Opinion you Neither Respect nor Disrespect	5.2830		1.0261			
Syndicated Newspaper Advice Columnist, Ann Landers	5.1887		2.0945			
President of General Motors	5.1509		1.4196			

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Stand. Dev.	Mean Rank
President of General Motors	5.1509		1.4196	
Russian Novelist who refused the Nobel Prize for Literature, Boris Pasternak	5.1321		1.6295	
The Mayor of the City I live in	5.1132		1.7938	
A Person I Know who is Making a Career out of Service in the Military (any branch)	5.0943		1.9832	
Commanding General of all British Military Units	5.0755		1.0534	
U.S. Secretary of Defense, Robert McNamara	5.0377		1.9411	
Prime Minister of Great Britain	5.0000		1.4412	
The Police Chief in the City Where I Live	5.0000		1.7321	
Chairman of the Joint Chiefs of Staff of the United States Military Services	5.0000		1.7209	
Member of the British Parliament	5.0000		0.8987	
National President of the United Automobile Workers, Walter Ruether	4.9811		1.4343	
American U2 Pilot who was Convicted by the Russians of Spying on Russia, Gary Francis Powers	4.9623		1.3582	

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Mean	Rank
A Negro Civil Rights Demonstrator in the South or a Large City	4.9623		1.6980	
Former Republican Vice-Presidential Candidate, Richard M. Nixon	4.9434		1.9847	
Head of Sane, National Committee to Abolish Nuclear Bomb Testing	4.9434		1.9456	
Negro Civil Rights Leader and Head of the Southern Christian Leadership Conference, Dr. Martin Luther King, Jr.	4.9245		1.7743	
Commanding General of the United States Marine Corps	4.9245		1.7415	
Majority Leader of the United States Senate	4.9245		1.5423	
Commander of the Troops in the North Atlantic Treaty Organization (NATO, Our Allies in Europe)	4.8868		1.7283	
Director of the Federal Bureau of Investigation (FBI)	4.8302		2.0450	
National President of the Chamber of Commerce	4.8113		1.3017	
Democratic Senator from New York, Robert F. Kennedy	4.8113		2.0197	

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Stand. Dev.	Mean Rank Dev.
Member of the State Legislature from my District	4.8113		1.6179	
Reporter on the London Times, A Leading British Newspaper	4.7925	40	1.0258	4.8226 40 0.9111
Governor of a Neighboring State	4.7547	39	1.0544	4.3629 26 1.2580
A United States Secret Service Agent	4.7358	38	1.6658	4.3871 29 1.6415
Former President of the United States and General of the Army, Dwight D. Eisenhower	4.7358	37	2.0301	4.5081 34 1.8101
Head of the National Educational Association	4.7358	36	1.0589	4.3306 21 1.2670
A Policeman in my Community	4.7358	35	1.6543	4.2661 19 1.5932
U.S. Secretary of State, Dean Rusk	4.7358	34	1.7448	4.6129 36 1.5340
Editor-in-chief of the New York Times	4.7170	33	1.4057	4.4274 31 1.3015
A Principal in the School System where I live	4.7170	32	1.8644	4.3468 24 1.9087
Federal Director of Civil Defense	4.6792	31	1.1893	4.4758 32 1.4111
Local Director of Civil Defense	4.6604	30	0.9989	4.3790 27 1.4061
A Chaplain in the Military	4.6415	29	1.8407	4.3468 23 1.5929

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Mean	Rank
Head of the American Medical Association	4.5849	28	4.6935	38
Member of the City Council Where I Live	4.5660	27	4.6210	37
State Director of Civil Defense	4.5472	26	4.6048	35
Scotland Yard Agent in England	4.5283	25	4.7742	39
Local Religious Leader of my Faith	4.5283	24	3.9839	13
President of Michigan State University, John Hannah	4.5283	23	4.5081	33
National Religious Leader of my Faith	4.4717	22	4.1048	15
Reporter on the Newspaper I Regularly Read	4.4151	21	4.3952	30
My Favorite TV Newscaster	4.3585	20	3.8871	10
A Network News Commentator on TV	4.3396	19	4.0403	14
Republican Senate Leader & Senator from Illinois, Everett Dirksen	4.3208	18	4.3871	28
The Medical Doctor I most often go to	4.3208	17	4.1935	17
Governor of the state of Michigan, George Romney	4.3019	16	4.1935	16

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Mean	Rank
Chief Justice of the United States Supreme Court, Earl Warren	4.2453	15	4.2016	18
Secretary General of the United Nations	4.1887	14	4.3145	20
A Teacher in the School System where I Live	4.1509	13	3.7903	8
Michigan State University Students Picketing the East Lansing City Hall for Alleged Racial Discrimination in Housing	4.1509	12	4.3468	22
My Father	4.1321	11	3.5000	6
A Minister, Priest, or Rabbi That I Know Personally	4.0377	10	3.8952	11
A White Person Who Demonstrates for Negro Civil Rights	4.0000	9	4.3468	25
Spokesman for the Group of Michigan Teachers Picketing the State Legislature for more Financial Support to Education	3.9811	8	3.7823	7
A Person I Know Who was Drafted	3.9057	7	3.8226	9
My Mother	3.8302	6	3.9113	12
Social Worker Who Works in the Slums of New York or Chicago	3.8113	5	3.3790	5
My Best Friend	3.2830	4	2.7903	2

Item	Pretest (Spring)		Main Study (Summer)	
	Mean	Rank	Mean	Rank
The Person I Married or Am Going to Marry	2.8868	2	2.7581	1
The Person I am Most Likely to go to for Personal Advice	2.5849	1	2.9919	3

APPENDIX C

Factor scores for the principal axis factor and the two factor rotated solution for the person factor analysis of the belief-disbelief ratings of the 123 person descriptions (sources) obtained for the pretest.

Note:--The method of computing the scores was outlined in the text. A positive standard score indicates that the source was above the mean on the belief-disbelief rating scale indicating source had beliefs and ideas different from his own. A negative standard score indicates the opposite or that the source had beliefs and ideas similar to his own. Factor 2 scores marked with a single asterick (*) represent the sources which they rated as more similar to their own beliefs and ideas by at least one standard deviation than either Factor 1 or the first principal axis factor. Factor 2 scores marked with a double asterick (**) represent the sources which they rated as more different from their own beliefs and ideas by at least one standard deviation than either Factor 2 or the first principal axis factor.

Item No.	Source Description	First Principal Axis Factor	Two Factor Solution	
			1	2
1	Convicted Killer of Lee Harvey Oswald, Jack Ruby	1.13	1.09	1.44
2	Member of the Communist Party in England	1.45	1.48	0.33*
3	Secretary General of the United Nations	-0.97	-0.85	-1.68
4	Scotland Yard Agent in England	-0.73	-0.73	-0.57
5	Heavyweight Boxing Champion, Cassius Clay (Muhammed Ali)	1.10	1.15	0.18
6	The Person you are Least Likely to go to for Personal Advice	1.71	1.67	1.67
7	President of General Motors	-0.50	-0.54	0.24
8	The Mayor of the City I Live in	-0.50	-0.51	-0.27
9	Spokesman for the Group of Michigan Teachers Picketing the State Legislature for More Financial Support to Education	-1.08	-0.97	-1.78
10	A Person Whose Opinion you Neither Respect nor Disrespect	-0.21	-0.22	-0.23
11	Republican Senate Leader and Senator from Illinois, Everett Dirksen	-0.93	-0.99	-0.17
12	Prime Minister of Great Britain	-0.47	-0.41	-0.79
13	Governor of a Southern State	1.05	0.97	1.64
14	A United States Secret Service Agent	-0.82	-0.86	0.07
15	My Mother	-1.41	-1.42	-0.87
16	Vice-President of the United States	-0.35	-0.25	-0.24

17	Syndicated Newspaper Advice Columnist, Ann Landers	-0.47	-0.58	0.36**
18	The Person I am most Likely to go to for Personal Advice	-2.03	-1.90	-2.51
19	My Next Door Neighbor	-0.28	-.025	-0.09
20	"Yankee Go Home" Demonstrators in a Latin American Country	1.17	1.22	-0.17*
21	Convicted German War Criminal and one time Adolf Hitler's Deputy, Rudolf Hess	1.60	1.54	1.89
22	Cuban Prime Minister	1.57	1.59	0.55*
23	A Teacher in the School System where I Live	-1.00	-0.98	-1.13
24	The Person I know whom I Dislike the Most	0.80	0.76	1.02
25	National Commander of the American Legion	-0.37	-0.38	0.69**
26	Commander in Chief of the Russian Army	1.04	1.05	0.92
27	Member of the Communist Party in Red China	1.85	1.84	1.42
28	Member of the Government of France who is a Communist	1.59	1.62	0.92
29	National President of the Chamber of Commerce	-0.68	-0.73	-0.10
30	Democratic Senator from New York, Robert F. Kennedy	-0.59	-0.53	-0.97
31	British Demonstrators who are Against the U.S. Nuclear Sub- marines Docking in England	0.46	0.52	-0.68*
32	President of the United States	-0.19	-0.14	0.16

33	The Pope, Spiritual Leader of the Catholic Church	0.47	0.38	0.69
34	Number One Man in Nation-Wide Crime Syndicate, Cosa Nostra	1.28	1.24	1.61
35	Grand Dragon of the Klu Klux Klan	2.02	1.95	2.51
36	Communist Party Leader of North Vietnam	1.82	1.84	1.07
37	Commander of the Troops in the North Atlantic Treaty Organi- zation (NATO, our Allies in Europe)	-0.71	-0.75	0.07
38	Dictator of a Latin American Country	0.75	0.70	1.32
39	President of France	0.86	0.88	0.51
40	A Person I know who is Making a Career out of Service in the Military (any branch)	-0.64	-0.74	0.58**
41	National President of the United Auto-Mobile Workers, Walter Ruether	-0.27	-0.23	-0.95
42	Leader of the American Nazi Party, George Lincoln Rockwell	1.80	1.75	2.19
43	The Person I Married or am Going to Marry	-1.83	-1.75	-2.11
44	A Young Man who Demonstrates Against the War in South Vietnam and Burns his Draft Card	0.96	1.06	-0.80*
45	Governor of a Neighboring State	-0.65	-0.67	-0.40
46	The Medical Doctor I most often go to	-0.95	-1.00	-0.68
47	A Chaplain in the Military	-0.93	-0.98	-0.28

48	Archbishop of Canterbury, Head of the Church of England	-0.16	-0.21	0.19
49	Editorial Writer of <u>Pravda</u> , the Russian National Newspaper	1.31	1.31	0.95
50	Police Chief in a Small Country town in Latin America	0.26	0.24	0.72
51	Demonstrators Against the War in South Vietnam who Greeted President Johnson when he visited Australia	0.53	0.63	-0.85*
52	Head of the Russian Secret Police	1.20	1.20	1.38
53	Former Senator and Republican Presidential Candidate, Barry Goldwater	0.09	-0.08	1.31**
54	Editor-In-Chief of the <u>New York Times</u>	-0.48	-0.47	-0.93
55	Former President of the United States and General of the Army, Dwight D. Eisenhower	-0.86	-0.95	0.14**
56	The Police Chief in the City where I Live	-0.53	-0.64	0.13
57	Former Governor of Michigan and Democratic Senatorial Candidate, G. Memmen (Soapy) Williams	0.08	0.16	-0.19
58	Local Religious Leader of my Faith	-1.09	-1.10	-0.65
59	Member of the State Legislature from my District	-0.61	-0.61	-0.65
60	Reporter on the Newspaper I Regularly Read	-0.87	-0.84	-0.87
61	Head of the National Education Association	-0.69	-0.65	-0.52
62	American U2 Pilot who was Convicted by the Russians of Spying on Russia, Gary Francis Powers	-0.55	-0.56	0.05

63	My Favorite TV Newscaster	-0.94	-0.96	-0.59
64	My Father	-1.27	-1.30	-0.67
65	Commanding General of All British Military Units	-0.49	-0.52	-0.01
66	A Prostitute	-.78	0.86	0.23
67	U.S. Secretary of Defense, Robert McNamara	-0.56	-0.61	0.25
68	Evangelist, Dr. Billy Graham	-0.09	0.19	0.86**
69	A Person whose Opinion you have very little Respect For	1.09	1.04	1.54
70	Member of the Communist Party in Russia	1.21	1.22	0.62
71	Editorial Writer for the Leading Newspaper in France	0.38	0.42	0.11
72	Negro Civil Rights Leader and Head of the Southern Christian Leadership Conference, Dr. Martin Luther King, Jr.	-0.36	-0.29	-1.17
73	My Best Friend	-1.70	-1.65	-1.73
74	Chief Justice of the United States Supreme Court, Earl Warren	-0.82	-0.80	-1.54
75	Former Republican Vice-President and Presidential Candidate, Richard M. Nixon	-0.67	-0.80	0.65**
76	A Policeman in my Community	-0.76	-0.84	0.10
77	Reporter on the <u>London Times</u> , A Leading British Newspaper	-0.53	-0.53	-0.73
78	U.S. Secretary of State, Dean Rusk	-0.72	-0.77	0.05
79	Buddhist Monk in South Vietnam	0.87	0.94	0.18

80	Commander of the North Vietnamese Communist Troops Fighting in South Vietnam	1.56	1.56	1.01
81	Head of a Communist Front Organization in the United States	1.67	1.65	1.29
82	A Strip-Tease Dancer	0.77	0.84	0.32
83	Director of the Federal Bureau of Investigation (FBI	-0.80	-0.92	0.71**
84	Leader of the American Communist Party	1.63	1.65	0.83
85	Chairman of the Joint Chiefs of Staff of the United States Military Services	-0.69	-0.76	0.46**
86	Commanding General of the United States Marine Corps	-0.72	-0.80	0.48**
87	Majority Leader of the United States Senate	-0.49	-0.47	-0.52
88	The Police Chief of Paris, France	0.01	0.01	0.06
89	Governor of the State of Michigan, George Romney	-1.16	-1.25	-0.05**
90	Member of the City Council where I Live	-0.82	-0.86	-0.43
91	A Member of the Communist Party in my Hometown	1.33	1.39	0.18*
92	The Leader of the Communist Party in the City Where I Live	1.23	1.28	0.31
93	Head of the American Medical Association	-0.83	-0.89	-0.01
94	Communist Party Chairman of Red China	1.79	1.75	1.62
95	Russian Novelist who Refused the Nobel Prize for Literature, Boris Pasternak	-0.02	-0.01	-0.64

96	Spokesman for the John Birch Society, Joseph Welch	1.10	0.99	2.00**
97	State Director of Civil Defense	-0.90	-0.92	-0.37
98	Many times Socialist Candidate for President of the United States, Norman Thomas	0.22	0.33	-1.25*
99	Local Director of Civil Defense	-0.74	-0.77	-0.48
100	A Person I Know who was Drafted	-1.29	-1.32	-0.83
101	Red Chinese Students Demonstrating in Moscow in Protest to Russia's Policies Toward Red China	0.79	0.81	0.44
102	Social Worker who Works in the Slums of New York or Chicago	-1.19	-1.09	-1.92
103	A Principal in the School System Where I Live	-0.83	-0.82	-0.40
104	National Religious Leader of my Faith	-1.03	-1.03	-0.84
105	Michigan State University Students Picketing the East Lansing City Hall for alleged Racial Discrimination in Housing	-0.89	-0.73	-1.83*
106	Accused Killer of Eight Student Nurses in Chicago, Richard Speck	1.74	1.72	1.65
107	Former Russian Premier, Khrushchev	1.09	1.10	0.73
108	Negro Civil Rights Leader and Head of the Student Non-Violent Coordinating Committee, Stokley Carmichael	0.43	0.47	0.02
109	A Hindu Holyman in India	0.82	0.85	0.54
110	A Negro Civil Rights Demonstrator in the South or a Large City	-0.30	-0.22	-1.06
111	Premier of South Viet Nam, Nguyen Cao Ky	-0.11	-0.06	0.58
112	Teamsters Union President, Jimmy Hoffa	0.40	0.39	0.32

113	Member of the British Parliament	-0.41	-0.39	-0.46
114	A Network News Commentator on TV	-0.86	-0.86	-1.00
115	A Person Whose Opinion I Highly Respect	-1.61	-1.52	-2.23
116	A Negro Rioter in the Los Angeles Watts Riot of Last Year	-.71	0.75	-0.18
117	A Convicted Dope Peddler	1.25	1.28	0.71
118	Head of Sane, National Committee to Abolish Nuclear Bomb Testing	-0.21	-0.05	-1.59*
119	A White Person Who Demonstrates for Negro Civil Rights	-0.92	-0.76	-2.01*
120	A Minister, Priest, or Rabbi that I Know Personally	-1.23	-1.21	-1.21
121	Reporter for the Official Newspaper of the Red Guard in Communist China	1.25	1.23	1.04
122	Federal Director of Civil Defense	-0.79	-0.80	-0.51
123	President of Michigan State University, John Hannah	-0.94	-1.01	-0.22

APPENDIX D

List of the sources selected to be evaluated in the main study using the Berlo et al. source credibility semantic differential scales. Descriptions 1-24 are defined as the sources associated with the belief end of the belief-disbelief continuum. Descriptions 25-48 are defined as the sources associated with the disbelief end of the belief-disbelief continuum.

1	THE PERSON I AM MOST LIKELY TO GO TO FOR PERSONAL ADVICE	19	A NETWORK NEWS COMMENTATOR ON TV
2	THE PERSON I MARRIED OR AM GOING TO MARRY	20	MY FAVORITE LOCAL TV NEWSCASTER
3	A PERSON WHOSE OPINION I HIGHLY RESPECT	21	REPORTER ON THE NEWS- PAPER I REGULARLY READ
4	MY BEST FRIEND	22	NATIONAL RELIGIOUS LEADER OF MY FAITH
5	SOCIAL WORKER WHO WORKS IN THE SLUMS OF NEW YORK OR CHICAGO	23	PRESIDENT OF MICHIGAN STATE UNIVERSITY, JOHN HANNAH
6	MY MOTHER	24	LOCAL RELIGIOUS LEADER OF MY FAITH
7	A PERSON I KNOW WHO WAS DRAFTED	25	A PERSON WHOSE OPINION I HAVE VERY LITTLE RESPECT FOR
8	SPOKESMAN FOR THE GROUP OF MICHIGAN TEACHERS PICKETING THE STATE LEGISLATURE FOR MORE FINANCIAL SUPPORT TO EDUCATION	26	MEMBER OF THE COMMUNIST PARTY IN RUSSIA
9	A WHITE PERSON WHO DEMON- STRATES FOR NEGRO CIVIL RIGHTS	27	GOVERNOR OF A SOUTHERN STATE
10	A MINISTER, PRIEST, OR RABBI THAT I KNOW PERSONALLY	28	REPORTER FOR THE OFFICIAL NEWSPAPER OF THE RED GUARD IN COMMUNIST CHINA
11	MY FATHER	29	A CONVICTED DOPE PEDDLER
12	MICHIGAN STATE UNIVERSITY STUDENTS PICKETING THE EAST LANSING CITY HALL FOR ALLEGED RACIAL DISCRIMINATION IN HOUSING	30	HEAD OF THE RUSSIAN SECRET POLICE
13	A TEACHER IN THE SCHOOL SYSTEM WHERE I LIVE	31	EDITORIAL WRITER OF PRAVDA, THE RUSSIAN NATIONAL NEWSPAPER
14	SECRETARY GENERAL OF THE UNITED NATIONS	32	MEMBER OF THE COMMUNIST PARTY IN ENGLAND
		33	SPOKESMAN FOR THE JOHN BIRCH SOCIETY, JOSEPH WELCH

15 CHIEF JUSTICE OF THE UNITED
STATES SUPREME COURT, EARL
WARREN

16 GOVERNOR OF THE STATE OF
MICHIGAN, GEORGE ROMNEY

17 THE MEDICAL DOCTOR I MOST
OFTEN GO TO

18 REPUBLICAN SENATE LEADER AND
SENATOR FROM ILLINOIS,
EVERETT DIRKSEN

34 CONVICTED KILLER OF
LEE HARVEY OSWALD,
JACK RUBY

35 NUMBER ONE MAN IN THE
NATION-WIDE CRIME
SYNDICATE, COSA
NOSTRA

36 COMMANDER OF THE NORTH
VIETNAMESE COMMUNIST
TROOPS FIGHTING IN
SOUTH VIETNAM

37 CUBAN PRIME MINISTER

38 MEMBER OF THE GOVERN-
MENT OF FRANCE WHO IS
A COMMUNIST

39 LEADER OF THE AMERICAN
COMMUNIST PARTY

40 HEAD OF A COMMUNIST
FRONT ORGANIZATION IN
THE UNITED STATES

41 CONVICTED GERMAN WAR
CRIMINAL AND ONE TIME
ADOLPH HITLER'S DEPUTY,
RUDOLF HESS

42 THE PERSON I AM LEAST
LIKELY TO GO TO FOR
PERSONAL ADVICE

43 COMMUNIST PARTY LEADER
OF NORTH VIETNAM

44 COMMUNIST PARTY CHAIR-
MAN OF RED CHINA

45 ACCUSED KILLER OF EIGHT
STUDENT NURSES IN
CHICAGO, RICHARD SPECK

46 MEMBER OF THE COMMUNIST
PARTY IN RED CHINA

47 LEADER OF THE AMERICAN NAZI PARTY,
GEORGE LINCOLN ROCKWELL

48 GRAND DRAGON OF THE KLU KLUX KLAN

APPENDIX E

Factor loading matrix for the three factor solution
for the re-factor analysis of the Berlo et al. Lansing
area data deleting the scale "objective-subjective."

		I	II	III	h^2	Factor Purity*
01	selfish---unselfish	69	15	-02	50	96
02	cruel---kind	84	19	-01	75	95
03	unfriendly---friendly	83	18	05	72	95
04	dangerous---safe	80	19	-02	68	95
05	unpleasant---pleasant	82	19	06	71	94
06	quarrelsome---congenial	82	20	03	71	94
07	harsh---gentle	82	18	-10	71	94
08	cool---warm	67	15	10	47	93
09	disagreeable---agreeable	81	22	01	70	93
10	unforgiving---forgiving	76	20	-05	61	93
11	unjust---just	81	26	04	73	91
12	gloomy---cheerful	74	16	18	60	90
13	inhospitable---hospitable	76	24	09	64	89
14	upset---calm	68	22	08	52	89
15	unsociable---sociable	74	25	10	62	88
16	unfair---fair	80	29	03	73	88
17	impatient---patient	70	26	-10	57	86
18	unethical---ethical	73	30	05	63	85
19	inexperienced---experienced	25	80	14	72	88
20	untrained---trained	27	82	14	76	88
21	unskilled---skilled	33	77	18	73	81
22	unqualified---qualified	37	76	10	72	80
23	uninformed---informed	34	74	17	70	79
24	unauthoritative---authoritative	21	67	33	61	74
25	inept---able	44	65	18	65	65
26	unintelligent---intelligent	42	63	23	62	63
27	meek---aggressive	-08	09	77	61	98
28	reserved---frank	04	-09	55	31	97
29	hesitant---frank	01	14	70	51	96
30	forceless---forceful	-04	25	60	43	85
31	passive---active	16	25	61	46	81
32	timid---bold	-32	-02	64	51	80
33	tired---energetic	24	24	64	53	78
34	slow---fast	11	31	50	36	70
Proportion of Total Variance		34.6	16.0	10.6	61.2	
Proportion of Common Variance		56.5	26.0	17.2	99.9	
Factors:		I--Safety				
		II--Qualification				
		III--Dynamism				

*The scales loading on each factor are ordered within by the factor by the purity index. The index is the ratio of the square of the variable's highest loading to its communality (h^2).

APPENDIX F

Questionnaires administered during Summer, 1967 for the main study used to obtain the source sample validation data, the background information, and the dogmatism scale data.

Department of Communication
Michigan State University

NAME _____

STUDENT NUMBER _____

INSTRUCTIONS

You are participating in a study of how people evaluate other persons. In this part of the study, you will be asked to look at the brief description of a number of persons and then to rate each on the degree to which each person has beliefs and ideas which are like your own or are different from your own.

Below are a couple examples of the kinds of descriptions of persons you will be asked to look at:

____ YOUR FAVORITE LOCAL TV NEWSCASTER

____ MAYOR OF THE CITY OF EAST LANSING,
____ GORDON THOMAS

You are to use the ladder scale on the right of each page to rate each person. Please examine this scale. You are to place each person somewhere along the scale according to which position best describes how much that person has beliefs and ideas which are either like your own or are different from your own. After you have decided what position best describes your feelings about the person described, then you would put the number of that position in the blank space to the left of the description.

For example, if you thought that "YOUR LOCAL TV NEWSCASTER" was best described by "HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN," you would mark it as follows:

7 YOUR FAVORITE LOCAL TV NEWSCASTER

Another example, if you thought that "MAYOR OF THE CITY OF EAST LANSING, GORDON THOMAS" was best described as having beliefs and ideas "Very Much Like" my own, you would mark it as follows:

____ MAYOR OF THE CITY OF EAST LANSING,
2 GORDON THOMAS

9 HAS BELIEFS AND
IDEAS EXTREMELY
DIFFERENT FROM
MY OWN

8 Very Much
Different

____ HAS BELIEFS AND
7 IDEAS QUITE A
BIT DIFFERENT
FROM MY OWN

6 Only Slightly
Different

____ Can't Decide or
Has About the
Same Amount of
5 Beliefs and Ideas
Which Are Like My
Own as Are
Different From My
Own

4 Only Slightly
Like

3 HAS BELIEFS AND
IDEAS QUITE A
BIT LIKE MY OWN

2 Very Much
Like

____ HAS BELIEFS AND
IDEAS EXTREMELY
1 LIKE MY OWN

Before you mark the scale for the first description, please glance over all of the descriptions of persons so you will get an idea of the kinds of persons you will be asked to evaluate. Then go back to the beginning of the descriptions and work your way through without looking back and forth through the items. Do not worry over or puzzle about individual descriptions. It is your immediate feelings about each person described that we want. On the other hand, please do not be careless, because we want your true impressions. Also, please write the numbers in the spaces as clearly and legibly as you can. If you have no questions, please begin.

CONVICTED KILLER OF LEE HARVEY OSWALD, JACK RUBY	9	HAS BELIEFS AND IDEAS EXTREMELY DIFFERENT FROM MY OWN
MEMBER OF THE COMMUNIST PARTY IN ENGLAND		
SECRETARY GENERAL OF THE UNITED NATIONS		
SCOTLAND YARD AGENT IN ENGLAND	8	Very Much Different
HEAVYWEIGHT BOXING CHAMPION, CASSIUS CLAY (MUHAMMAD ALI)		
THE PERSON I AM LEAST LIKELY TO GO TO FOR PERSONAL ADVICE	7	HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN
A WHITE PERSON WHO DEMONSTRATES FOR NEGRO CIVIL RIGHTS		
SPOKESMAN FOR THE GROUP OF MICHIGAN TEACHERS PICKETING THE STATE LEGIS- LATURE FOR MORE FINANCIAL SUPPORT TO EDUCATION	6	Only Slightly Different
THE LEADER OF THE COMMUNIST PARTY IN THE CITY WHERE I LIVE		
REPUBLICAN SENATE LEADER AND SENATOR FROM ILLINOIS, EVERETT DIRKSEN	5	Can't Decide or Has About the Same Amount of Beliefs and Ideas Which Are Like My Own as Are Different From My Own
LEADER OF THE AMERICAN COMMUNIST PARTY		
GOVERNOR OF A SOUTHERN STATE	4	Only Slightly Like
A UNITED STATES SECRET SERVICE AGENT		
MY MOTHER	3	HAS BELIEFS AND IDEAS QUITE A BIT LIKE MY OWN
ACCUSED KILLER OF EIGHT STUDENT NURSES IN CHICAGO, RICHARD SPECK		
FORMER RUSSIAN PREMIER, KHRUSHCHEV		
THE PERSON I AM MOST LIKELY TO GO TO FOR PERSONAL ADVICE	2	Very Much Like

___ A STRIP-TEASE DANCER

___ "YANKEE GO HOME" DEMONSTRATORS
___ IN A LATIN AMERICAN COUNTRY

___ CONVICTED GERMAN WAR CRIMINAL
AND ONE TIME ADOLF HITLER'S
___ DEPUTY, RUDOLF HESS

1 HAS BELIEFS AND
IDEAS EXTREMELY
LIKE MY OWN

___ CUBAN PRIME MINISTER	
___ A TEACHER IN THE SCHOOL SYSTEM WHERE I LIVE	9 HAS BELIEFS AND IDEAS EXTREMELY DIFFERENT FROM MY OWN
___ THE PERSON I KNOW WHOM I DISLIKE THE MOST	
___ LOCAL DIRECTOR OF CIVIL DEFENSE	
___ COMMANDER IN CHIEF OF THE RUSSIAN ARMY	8 Very Much Different
___ BUDDHIST MONK IN SOUTH VIETNAM	
___ MEMBER OF THE COMMUNIST PARTY IN RED CHINA	7 HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN
___ MEMBER OF THE GOVERNMENT OF FRANCE WHO IS A COMMUNIST	
___ A PERSON I KNOW WHO WAS DRAFTED	6 Only Slightly Different
___ RED CHINESE STUDENTS DEMONSTRATING IN MOSCOW IN PROTEST TO RUSSIA'S POLICIES TOWARD RED CHINA	
___ SOCIAL WORKER WHO WORKS IN THE SLUMS OF NEW YORK OR CHICAGO	5 Can't Decide or Has About the Same Amount of Beliefs and Ideas Which Are Like My Own as Are Different From My Own
___ A PRINCIPAL IN THE SCHOOL SYSTEM WHERE I LIVE	
___ THE POPE, SPIRITUAL LEADER OF THE CATHOLIC CHURCH	4 Only Slightly Like
___ NUMBER ONE MAN IN THE NATION-WIDE CRIME SYNDICATE, COSA NOSTRA	
___ GRAND DRAGON OF THE KLU KLUX KLAN	3 HAS BELIEFS AND IDEAS QUITE A BIT LIKE MY OWN
___ COMMUNIST PARTY LEADER OF NORTH VIETNAM	
___ A MINISTER, PRIEST, OR RABBI THAT I KNOW PERSONALLY	2 Very Much Like
___ DICTATOR OF A LATIN AMERICAN COUNTRY	

REPORTER FOR THE OFFICIAL NEWSPAPER OF THE RED GUARD IN COMMUNIST CHINA	
LEADER OF THE AMERICAN NAZI PARTY, GEORGE LINCOLN ROCKWELL	9 HAS BELIEFS AND IDEAS EXTREMELY DIFFERENT FROM MY OWN
THE PERSON I MARRIED OR AM GOING TO MARRY	
A YOUNG MAN WHO DEMONSTRATES AGAINST THE WAR IN SOUTH VIETNAM AND BURNS HIS DRAFT CARD	8 Very Much Different
GOVERNOR OF A NEIGHBORING STATE	
THE MEDICAL DOCTOR I MOST OFTEN GO TO	7 HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN
A CHAPLAIN IN THE MILITARY	
A FEDERAL DIRECTOR OF CIVIL DEFENSE	
EDITORIAL WRITER OF PRAVDA, THE RUSSIAN NATIONAL NEWSPAPER	6 Only Slightly Different
NATIONAL RELIGIOUS LEADER OF MY FAITH	
MICHIGAN STATE UNIVERSITY STUDENTS PICKETING THE EAST LANSING CITY HALL FOR ALLEGED RACIAL DISCRIMINATION IN HOUSING	5 Can't Decide or Has About the Same Amount of Beliefs and Ideas Which are Like My Own as Are Different From My Own
HEAD OF THE RUSSIAN SECRET POLICE	
EDITOR-IN-CHIEF OF THE NEW YORK TIMES	
FORMER PRESIDENT OF THE UNITED STATES AND GENERAL OF THE ARMY, DWIGHT D. EISENHOWER	4 Only Slightly Like
COMMANDER OF THE NORTH VIETNAMESE COMMUNIST TROOPS FIGHTING IN SOUTH VIETNAM	3 HAS BELIEFS AND IDEAS QUITE A BIT LIKE MY OWN
HEAD OF A COMMUNIST FRONT ORGANI- ZATION IN THE UNITED STATES	2 Very Much Like
LOCAL RELIGIOUS LEADER OF MY FAITH	
PRESIDENT OF FRANCE	
A NETWORK NEWS COMMENTATOR ON TV	1 HAS BELIEFS AND IDEAS EXTREMELY LIKE MY OWN
A PERSON WHOSE OPINION I HIGHLY RESPECT	

PRESIDENT OF MICHIGAN STATE
UNIVERSITY, JOHN HANNAH

REPORTER ON THE NEWSPAPER I
REGULARLY READ

HAS BELIEFS AND IDEAS
1 EXTREMELY LIKE MY
OWN

____ HEAD OF THE NATIONAL EDUCATION ASSOCIATION	9	HAS BELIEFS AND IDEAS EXTREMELY DIFFERENT FROM MY OWN
____ HEAD OF THE AMERICAN MEDICAL ASSOCIATION		
____ COMMUNIST PARTY CHAIRMAN OF RED CHINA	8	Very Much Different
____ MY FAVORITE LOCAL TV NEWSCASTER		
____ MY FATHER		
____ A CONVICTED DOPE PEDDLER	7	HAS BELIEFS AND IDEAS QUITE A BIT DIFFERENT FROM MY OWN
____ A PROSTITUTE		
____ SPOKESMAN FOR THE JOHN BIRCH SOCIETY, JOSEPH WELCH		
____ STATE DIRECTOR OF CIVIL DEFENSE	6	Only Slightly Different
____ A PERSON WHOSE OPINION I HAVE VERY LITTLE RESPECT FOR		
____ MEMBER OF THE COMMUNIST PARTY IN RUSSIA	5	Can't Decide or Has About the Same Amount of Beliefs and Ideas Which are Like My Own as Are Different From My Own
____ GOVERNOR OF THE STATE OF MICHIGAN, GEORGE ROMNEY		
____ MEMBER OF THE CITY COUNCIL WHERE I LIVE	4	Only Slightly Like
____ A MEMBER OF THE COMMUNIST PARTY IN MY HOMETOWN		
____ MY BEST FRIEND	3	HAS BELIEFS AND IDEAS QUITE A BIT LIKE MY OWN
____ CHIEF JUSTICE OF THE UNITED STATES SUPREME COURT, EARL WARREN		
____ A HINDU HOLYMAN IN INDIA	2	Very Much Like
____ A POLICEMAN IN MY COMMUNITY		

REPORTER ON THE LONDON TIMES,
A LEADING BRITISH NEWSPAPER

U.S. SECRETARY OF STATE, DEAN RUSK

HAS BELIEFS AND
 1 IDEAS EXTREMELY
 LIKE MY OWN

Please Complete the Following:

Age: ____

Sex: Male Female (please circle)

Year in School: Freshman Sophomore Junior Senior Master's Ph.D.

Major: _____

Do your parents live in Michigan? yes no (circle one)

Have you traveled in a foreign country outside the United States and Canada? yes no (circle one)

How do you consider yourself politically? ____ liberal
(check one) ____ conservative
____ neither

Marital Status: Married Single (circle one)

On how many days out of the last seven have you looked at or read a newspaper? ____

On how many days out of the last seven have you looked at or read a magazine? ____

On how many days out of the last seven have you watched TV for recreational purposes? ____

On how many days out of the last seven have you listened to radio? ____

On how many days out of the last seven have you looked at or read a book for recreational purposes? ____

How many times in the last month have you attended a movie? ____

Please check the income range which you estimate would cover your parent's total income last year:

____ under \$1,500
____ 1,500 to 2,999
____ 3,000 to 4,499
____ 4,500 to 5,999
____ 6,000 to 7,999

____ 8,000 to 9,999
____ 10,000 to 14,999
____ 15,000 to 19,999
____ 20,000 to 29,999
____ 30,000 and over

What is your father's occupation? _____

Department of Communication
Michigan State University

NAME _____

Student Number _____

We are interested now in what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

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

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

Please write both the number and the sign in the margin left of each statement.

____ The United States and Russia have just about nothing in common.

____ It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

____ Man on his own is a helpless and miserable creature.

____ In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.

____ I'd like it if I could find someone who would tell me how to solve my personal problems.

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

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

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

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

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

— In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

— Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

— It is better to be a dead hero than be a live coward.

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

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

— It is only when a person devotes himself to an ideas or cause that life becomes meaningful.

— Most people just don't give a "damn" for others.

— The main thing in life is for a person to want to do something important.

— Most people just don't know what's good for them.

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

APPENDIX G

The source evaluation questionnaire used during the main study: includes the instructions with a sample page used to obtain the semantic differential evaluation of the sample of source descriptions.

Department of Communication
Michigan State University

NAME _____

STUDENT NUMBER _____

INSTRUCTIONS

You are participating for the second time in a study of how people evaluate other persons. Again, we will ask you to look at the brief descriptions of a number of persons and then mark on a series of scales under each. This time you will be asked to look at fewer descriptions of persons but you will mark each on a number of scales instead of only one. When you evaluate each of the persons described, think of some communication situation in which the person could have something to say to you. This could be a face-to-face conversation, a speech, something the person has written in a letter, newspaper, magazine, or other written document, news film on TV, or some other kind of situation in which the person could communicate something to you. Also, the thing that the person would be communicating should be a reasonable thing for that person to be doing.

On each page of this booklet, you will find a different description of a person whom you are to consider as the source of some kind of message or information. You are to judge each with the set of scales beneath it. You are to rate the person on each of these scales in order.

An example of such a scale might be:

Interesting: ___:___:___:___:___:___:___:___:___:___: Boring

First, look at the description of the person carefully. Consider that person in some kind of meaningful communication situation. Then, if you feel that the person would be extremely interesting, or extremely boring, you should place your checkmarks as follows:

Interesting: X :___:___:___:___:___:___:___:___: Boring

OR

Interesting: ___:___:___:___:___:___:___: X : Boring

If you feel the person would be very interesting but not extremely so, then:

Interesting: ___: X :___:___:___:___:___:___: Boring

If you feel the person would be fairly interesting, then:

Interesting: ___:___: X :___:___:___:___:___: Boring

1

1

1

1

1

1

1

- 1

1

1

LOCAL RELIGIOUS LEADER OF MY FAITH

ACCUSED KILLER OF EIGHT STUDENT
NURSES IN CHICAGO, RICHARD SPECK

LEADER OF THE AMERICAN COMMUNIST
PARTY

A WHITE PERSON WHO DEMONSTRATES
FOR NEGRO CIVIL RIGHTS

A PERSON WHOSE OPINION I HAVE
VERY LITTLE RESPECT FOR

COMMANDER OF THE NORTH VIETNAMESE
COMMUNIST TROOPS FIGHTING IN SOUTH
VIETNAM

MICHIGAN STATE UNIVERSITY STUDENTS
PICKETING THE EAST LANSING CITY
HALL FOR ALLEGED RACIAL DIS-
CRIMINATION IN HOUSING

MY BEST FRIEND

HEAD OF THE RUSSIAN SECRET POLICE

SOCIAL WORKER WHO WORKS IN THE
SLUMS OF NEW YORK OR CHICAGO

A CONVICTED DOPE PEDDLER

HEAD OF A COMMUNIST FRONT ORGANI-
ZATION IN THE UNITED STATES

A TEACHER IN THE SCHOOL SYSTEM WHERE
I LIVE

MEMBER OF THE GOVERNMENT OF FRANCE
WHO IS A COMMUNIST

A NETWORK NEWS COMMENTATOR ON TV

MEMBER OF THE COMMUNIST PARTY OF
RED CHINA

PRESIDENT OF MICHIGAN
STATE UNIVERSITY, JOHN
HANNAH

SPOKESMAN FOR THE GROUP
OF MICHIGAN TEACHERS
PICKETING THE STATE
LEGISLATURE FOR MORE
FINANCIAL SUPPORT TO
EDUCATION

LEADER OF THE AMERICAN
NAZI PARTY, GEORGE LINCOLN
ROCKWELL

REPUBLICAN SENATE LEADER
AND SENATOR FROM ILLINOIS,
EVERETT DIRKSEN

MEMBER OF THE COMMUNIST
PARTY IN RUSSIA

MY MOTHER

COMMUNIST PARTY LEADER
OF NORTH VIETNAM

A PERSON WHOSE OPINION
I HIGHLY RESPECT

NATIONAL RELIGIOUS
LEADER OF MY FAITH

CONVICTED KILLER OF
LEE HARVEY OSWALD,
JACK RUBY

EDITORIAL WRITER OF
PRAVDA, THE RUSSIAN
NATIONAL NEWSPAPER

NUMBER ONE MAN IN THE
NATION-WIDE CRIME
SYNDICATE, COSA NOSTRA

GOVERNOR OF A SOUTHERN STATE

CUBAN PRIME MINISTER

REPORTER FOR THE OFFICIAL NEWSPAPER
OF THE RED GUARD IN COMMUNIST CHINA

A PERSON I KNOW WHO WAS DRAFTED

SPOKESMAN FOR THE JOHN BIRTH SOCIETY,
JOSEPH WELCH

THE PERSON I AM MOST LIKELY TO GO TO
FOR PERSONAL ADVICE

A MINISTER, PRIEST, OR RABBI THAT I
KNOW PERSONALLY

COMMUNIST PARTY CHAIRMAN OF RED CHINA

GOVERNOR OF THE STATE
OF MICHIGAN, GEORGE
ROMNEY

CONVICTED GERMAN WAR
CRIMINAL AND ONE TIME
ADOLF HITLER'S DEPUTY,
RUDOLF HESS

GRAND DRAGON OF THE KLU
KLUX KLAN

MEMBER OF THE COMMUNIST
PARTY IN ENGLAND

THE PERSON I AM LEAST
LIKELY TO GO TO FOR
PERSONAL ADVICE

THE PERSON I MARRIED OR
AM GOING TO MARRY

MY FAVORITE LOCAL TV
NEWSCASTER

REPORTER ON THE NEWSPAPER
I REGULARLY READ

CHIEF JUSTICE OF THE
UNITED STATES SUPREME
COURT, EARL WARREN

SECRETARY GENERAL OF THE
UNITED NATIONS

MY FATHER

THE MEDICAL DOCTOR I
MOST OFTEN GO TO

A MINISTER, PRIEST, OR RABBI THAT
I KNOW PERSONALLY

unselfish:__:__:__:__:__:__:__:__:selfish
 dangerous:__:__:__:__:__:__:__:__:safe
 inexperienced:__:__:__:__:__:__:__:__:experienced
 harsh:__:__:__:__:__:__:__:__:gentle
 friendly:__:__:__:__:__:__:__:__:unfriendly
 aggressive:__:__:__:__:__:__:__:__:meek
 energetic:__:__:__:__:__:__:__:__:tired
 authoritative:__:__:__:__:__:__:__:__:unauthoritative
 unjust:__:__:__:__:__:__:__:__:just
 inhospitable:__:__:__:__:__:__:__:__:hospitable
 bold:__:__:__:__:__:__:__:__:timid
 hesitant:__:__:__:__:__:__:__:__:emphatic
 cool:__:__:__:__:__:__:__:__:warm
 untrained:__:__:__:__:__:__:__:__:trained
 intelligent:__:__:__:__:__:__:__:__:unintelligent
 unpleasant:__:__:__:__:__:__:__:__:pleasant
 reserved:__:__:__:__:__:__:__:__:frank
 slow:__:__:__:__:__:__:__:__:fast
 able:__:__:__:__:__:__:__:__:inept
 cheerful:__:__:__:__:__:__:__:__:gloomy
 calm:__:__:__:__:__:__:__:__:upset

A MINISTER, PRIEST, OR RABBI THAT
I KNOW PERSONALLY

informed:__:__:__:__:__:__:__:__:uninformed
 ethical:__:__:__:__:__:__:__:__:unethical
 patient:__:__:__:__:__:__:__:__:impatient
 congenial:__:__:__:__:__:__:__:__:quarrelsome
 fair:__:__:__:__:__:__:__:__:unfair
 agreeable:__:__:__:__:__:__:__:__:disagreeable
 skilled:__:__:__:__:__:__:__:__:unskilled
 active:__:__:__:__:__:__:__:__:passive
 forgiving:__:__:__:__:__:__:__:__:unforgiving
 kind:__:__:__:__:__:__:__:__:cruel
 qualified:__:__:__:__:__:__:__:__:unqualified
 unsociable:__:__:__:__:__:__:__:__:sociable
 forceful:__:__:__:__:__:__:__:__:forceless

APPENDIX H

Overall Factor Analyses of the Source Evaluation Data

The question might be asked: Would the present source evaluation data produce essentially the same results and conclusions if it were analyzed in the same way Berlo analyzed his data? The following three tables of factor loadings present the results of such an analysis. Three overall factor analyses were performed for this data of the type Berlo used for his data. These included one for all sources, and one each for the 24 belief sources and the 24 disbelief sources. The analysis procedure was identical to Berlo's. Unities were used in the diagonals of the correlation matrix. The principal axis model was used followed by a Varimax rotation. The criterion for stopping the rotation procedure was the Kiel-Wrigley criterion set at three. For all three factor analyses, the stopping point was the three factor solution, identical to Berlo's results. (See Appendix E for the three factor solution resulting from Berlo's analysis.) The grouping of scales on all three factor solutions is nearly identical to Berlo's. The only exception is the unauthoritative-authoritative scale. For the 48 sources and 24 disbelief sources solutions, this scale's primary loadings are split between the qualification and dynamism factors instead of being primarily on only the qualification factor. One minor difference is that for all three of the solutions, the variance accounted for by the qualification and dynamism factors is more nearly equal than

it is for the Berlo solution. The two solutions involving only 24 sources have a qualification factor accounting for about the same amount of variance as Berlo's solution. For the solution involving all 48 sources, the qualification factor is somewhat larger than for the other solutions. The two 24 source solutions and the Berlo one accounted for about slightly more than 60% of the total variance. The 48 source solution accounted for about 10% more variance, primarily due to the larger qualification factor. The Berlo solution was compared with the three solutions from this study on a factor to factor basis using the index of factorial similarity. The results are in the following table. It is obvious that all three solutions map into the Berlo results very satisfactorily. When analysis of this study's source evaluation data is made in the same way that Berlo analyzed his data, the results of this study would very satisfactorily replicate the results of Berlo's study.

Belief Sources	Safety	Qualif.	Dynamism	01	02	03	04	05	06	07	08	09	10	11	12
All Sources	Safety	Qualif.	Dynamism	01	02	03	04	05	06	07	08	09	10	11	12
	01	02	03	04	05	06	07	08	09	10	11	12			
	01	02	03	04	05	06	07	08	09	10	11	12			
24 Belief Sources	Safety	Qualif.	Dynamism	01	02	03	04	05	06	07	08	09	10	11	12
	01	02	03	04	05	06	07	08	09	10	11	12			
	01	02	03	04	05	06	07	08	09	10	11	12			
24 Disbelief Sources	Safety	Qualif.	Dynamism	01	02	03	04	05	06	07	08	09	10	11	12
	01	02	03	04	05	06	07	08	09	10	11	12			
	01	02	03	04	05	06	07	08	09	10	11	12			

Three Factor Varimax Rotated Solution for All Sources
(34 variable, 4752 observations)

I--Safety

II--Qualification

III--Dynamism

		I	II	III	h ²	FACTOR PURITY*
01	selfish---unselfish	80	18	-01	67	95
02	cruel---kind	92	15	-02	87	97
03	unfriendly---friendly	89	16	06	82	96
04	dangerous---safe	86	16	-07	77	96
05	unpleasant---pleasant	90	21	03	85	95
06	quarrelsome---congenial	85	19	-04	76	95
07	harsh---gentle	88	13	-11	80	96
08	cool---warm	84	11	03	71	99
09	disagreeable---agreeable	86	19	-02	78	94
10	unforgiving---forgiving	88	15	-03	80	96
11	unjust---just	88	23	01	83	93
12	gloomy---cheerful	81	22	13	72	91
13	inhospitable---hospitable	86	18	06	78	94
14	upset---calm	64	37	-06	55	74
15	unsociable---sociable	81	21	10	72	91
16	unfair---fair	89	20	03	83	95
17	inpatient---patient	74	27	-12	65	84
18	unethical---ethical	86	23	01	80	92
19	inexperienced---experienced	24	78	23	75	81
20	untrained---trained	26	82	24	80	84
21	unskilled---skilled	31	80	24	80	80
22	unqualified---qualified	41	76	23	80	72
23	uninformed---informed	40	69	26	70	68
24	unauthoritative---authoritative	-03	47	47	44	50
25	inept---able	41	73	29	79	67
26	unintelligent---intelligent	45	69	23	74	64
27	meek---aggressive	-25	08	78	68	89
28	reserved---frank	06	00	64	41	99
29	hesitant---emphatic	04	23	70	55	89
30	forceless---forceful	-12	28	72	61	84
31	passive---active	07	24	76	64	90
32	timid---bold	-20	09	80	69	92
33	tired---energetic	18	25	69	57	83
34	slow---fast	-01	12	65	44	96
Proportion of Total Variance		41.0	15.4	14.3	70.7	
Proportion of Common Variance		58.0	21.8	20.2	100.0	

Three Factor Varimax Rotated Solution for the 24 Belief Sources
(34 variable, 2376 observations)

		I--Safety II--Qualification III--Dynamism			h ²	FACTOR PURITY*
		I	II	III		
01	selfish---unselfish	65	13	10	45	93
02	cruel---kind	82	15	12	71	94
03	unfriendly---friendly	79	18	22	70	89
04	dangerous---safe	64	30	-01	51	80
05	unpleasant---pleasant	80	30	14	75	85
06	quarrelsome---congenial	75	23	00	62	90
07	harsh---gentle	78	12	-10	64	95
08	cool---warm	73	09	09	54	98
09	disagreeable---agreeable	74	23	03	61	89
10	unforgiving---forgiving	77	17	05	62	95
11	unjust---just	69	36	20	64	74
12	gloomy---cheerful	74	15	20	62	88
13	inhospitable---hospitable	77	16	20	65	91
14	upset---calm	55	39	-11	47	64
15	unsociable---sociable	67	20	27	57	78
16	unfair---fair	70	31	22	63	77
17	impatient---patient	64	31	-14	53	77
18	unethical---ethical	65	38	19	60	70
19	inexperienced---experienced	30	79	16	72	86
20	untrained---trained	26	81	15	74	88
21	unskilled---skilled	29	80	19	76	84
22	unqualified---qualified	40	78	18	80	76
23	uninformed---informed	33	66	31	63	69
24	unauthoritative---authoritative	05	52	38	41	65
25	inept---able	46	67	26	72	62
26	unintelligent---intelligent	38	67	24	65	69
27	meek---aggressive	-06	09	80	65	98
28	reserved---frank	-01	03	63	39	100
29	hesitant---emphatic	11	24	65	49	86
30	forceless---forceful	07	37	65	57	74
31	passive---active	22	19	71	58	86
32	timid---bold	-06	09	78	63	96
33	tired---energetic	33	17	61	51	72
34	slow---fast	14	10	63	42	94
Proportion of Total Variance		31.9	16.3	13.7	61.9	
Proportion of Common Variance		51.5	26.3	22.2	100.0	

*The factor purity index is the ratio of the square of the variable's highest loading to its communality (h²).

Three Factor Varimax Rotated Solution for the 24 Disbelief Sources
(34 variable, 2376 observations)

I--Safety

II--Qualification

III--Dynamism

		I	II	III	h^2	FACTOR PURITY*
01	selfish---unselfish	64	18	-12	46	89
02	cruel---kind	85	07	-12	74	97
03	unfriendly---friendly	82	06	05	67	100
04	dangerous---safe	71	02	-19	54	93
05	unpleasant---pleasant	84	12	-00	72	98
06	quarrelsome---congenial	77	11	-10	62	95
07	harsh---gentle	80	02	-21	69	92
08	cool---warm	74	+01	02	54	100
09	disagreeable---agreeable	78	12	-09	62	98
10	unforgiving---forgiving	80	07	-13	66	96
11	unjust---just	78	19	-12	66	92
12	gloomy---cheerful	71	20	14	56	90
13	inhospitable---hospitable	78	12	04	63	96
14	upset---calm	49	38	-11	40	60
15	unsociable---sociable	74	15	10	58	94
16	unfair---fair	81	15	-08	68	96
17	impatient---patient	62	27	-21	50	76
18	unethical---ethical	74	17	-10	59	92
19	inexperienced---experienced	12	76	35	72	80
20	untrained---trained	14	83	29	79	87
21	unskilled---skilled	16	82	27	77	87
22	unqualified---qualified	23	79	27	75	83
23	uninformed---informed	24	73	26	66	81
24	unauthoritative---authoritative	-03	44	52	46	42
25	inept---able	21	78	33	77	79
26	unintelligent---intelligent	29	75	26	71	79
27	meek---aggressive	-22	16	78	68	89
28	reserved---frank	-02	03	65	42	100
29	hesitant---emphatic	-06	25	71	57	88
30	forceless---forceful	-14	27	74	64	86
31	passive---active	-04	28	77	67	88
32	timid---bold	-18	15	81	72	91
33	tired---energetic	01	29	71	59	85
34	slow---fast	-11	17	63	44	90
Proportion of Total Variance		31.0	15.4	15.8	62.2	
Proportion of Common Variance		49.9	24.7	25.4	100.0	

*The factor purity index is the ratio of the square of the variable's highest loading to its communality (h^2).

APPENDIX I

Additional Comments on the Generality
of the Berlo Dimensions Across Subjects

The emphasis of the conclusions summarized in this section was on the relative degree of generality of the Berlo dimensions across the two kinds of sources. They do not take into account the level of the degree of generality. If the level of generality is examined, one might be able to make some additional comments on the generality across the people of Berlo's three dimensions in the individual dimensions of source evaluation.

It would seem reasonable that in comparing the individual three factor rotated solutions to the Berlo solution that if no more than half of the individual solutions exhibit the characteristic under consideration, the generality across people of that characteristic of the Berlo dimensions of source evaluation was at an unacceptable level. The conclusions in the last section can be re-examined applying this gross standard. There were a number of comparisons involving the degree to which all three Berlo factors were represented in the individual three factor solutions. None of these exceeded the gross standard of fifty percent of all solutions for either belief or disbelief sources. One comparison approached this but did not exceed it. For belief sources only, forty-nine percent of all individual solutions had factors which could be characterized as each representing one of the Berlo dimensions (see Table 45). The

similar percentage for disbelief sources dropped to thirty percent. One can not infer a very high degree of generality on a multi-dimensional basis of the Berlo results across the persons in this study. For certain other similar comparisons, the generality across people is even lower.

There were a number of comparisons using each Berlo dimension one at a time. The generality across people was highest for the safety dimension (78%). This held for both kinds of sources. For the other two dimensions (qualification and dynamism), it was only for belief sources that the gross standard of fifty percent was exceeded (63% and 69%, respectively). For disbelief sources, the generality across people dropped to unacceptable levels for both qualification and dynamism (45% and 39%, respectively). Even comparisons involving a single dimension at a time, generality across people is lacking in places.

Certainly Berlo's overall results based on a factor analysis across all persons in his sample and all sources was not an adequate summarization of the individual factor analysis results obtained by factoring data individually for each subject in this study. Would an overall factor analysis across all persons in this sample across all sources be an adequate summarizations of the individual factor analyses? Such an overall factor analysis was done for this data. It is reported in Appendix H. One was done for all sources as

well as one for each of the two kinds of sources. The results of all three analyses were not interpretively different from the Berlo analysis. The implication certainly would be that the overall factor analysis of a set of data of the kind obtained for this study is not necessarily highly representative or constitutes a very meaningful average of the factor analyses done separately on the data that was obtained for each subject. Such an analysis is planned for the data in this study.

The primary purpose for doing the overall factor analysis is for index construction. In other words, what scales should be summed over to produce a small set of indices which are relatively uncorrelated and exhaust most of the variance. There always has been a tendency with the semantic differential studies to make the leap that the overall factor structure is somehow representative of the cognitive structure of the persons participating in the study. This study certainly contains implications for questioning the tenability of such a leap.

MICHIGAN STATE UNIV. LIBRARIES



31293101819633