THE RELATIVE ACCURACY AND
RELIABILITY OF THE CONSENSUS AND
BELIEF DIMENSIONAL MODELS AS
PREDICTORS OF COGNITIVE INTERACTION:
A REPLICATION AND EXTENSION

WILLIAM ELROY TEDRICK

Ph. D.

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
WILLIAM ELROY TEDRICK
1968

THE RELATIVE ACCURACY AND RELIABILITY OF THE CONGRUITY AND BELIEF CONGRUENCE MODELS AS PREDICTORS OF COGNITIVE INTERACTION: A REPLICATION AND EXTENSION

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
WILLIAM ELROY TEDRICK
1968

This is to certify that the

thesis entitled

The Relative Accuracy and Reliability of the Congruity and Belief Congruence Models as Predictors of Cognitive Interaction: A Replication and Extension

presented by

William E. Tedrick

has been accepted towards fulfillment of the requirements for

Ph.D. degree in Communication

Date_

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

Gerald R. Miller
Director of Thesis

Guidance Committee: Gerald R. Miller, Chairman
Mason E. Miller
Milton Rokeach
Eric M. Rogers
A. F. Camilleri
Randall P. Harrison

ABSTRACT

THE RELATIVE ACCURACY AND RELIABILITY OF THE CONGRUITY AND BELIEF CONGRUENCE MODELS AS PREDICTORS OF COGNITIVE INTERACTION: A REPLICATION AND EXTENSION

by William Elroy Tedrick

The two major objectives of this investigation were to test the relative accuracy and the relative reliability of the congruity and belief congruence models as predictors of cognitive interaction resulting from certain word combinations.

Cognitive interaction is defined as the process by which a single evaluative meaning emerges as a result of combining two stimuli, each having their separate meaning. Previous research indicated rather clearly that the belief congruence principles represent a superior explanation of the underlying cognitive processes inherent in cognitive interaction. In a sense, the present investigation represents a replication of the earlier study, as well as incorporating several important extensions designed to provide further empirical evidence relative to the two predictive models that were tested. Among these extensions were: the test of reliability, a research design improvement, the use of a certain type of word combinations not generally tested before, and certain recommendations that may help account for a specific type of overassimilation for which the models, as presently formulated cannot account.

William Elroy Tedrick

Thirty-six assertions of a specific type not generally tested before were administered to 619 high school age students who had been randomly assigned to 12 different test groups. The study was designed so that six of the 12 test groups rated assertions in which the subject was held constant and the characterization was varied. The remaining six test groups rated the same set of assertions with the subject of the assertion varied and the characterization held constant.

Appropriate semantic differential scales of the Evaluative Factor were used to obtain the relevant connotative meaning measurements required by the congruity and belief congruence procedures.

Results were analyzed in terms of predicted and obtained scores. Predicted scores were calculated by applying the semantic differential scores and the relative importance rating to the congruity and belief congruence formuli. The obtained score represented the actual evaluative meaning respondents assigned to the assertions as determined by the semantic differential scaling procedure.

The results indicate that:

1. The belief congruence model is significantly superior to the congruity model as a predictor of cognitive interaction resulting from certain word combinations. Based on gross mean error of prediction, the congruity model showed

.75 scale units of error per assertion while the belief congruence model manifested only .33 scale units per assertion. When compared to the congruity model, the belief congruence model predicted more than twice as many assertions accurately (congruity model, 25 percent of the 72 assertions; belief congruence model, 67 percent of the 72 assertions).

2. When tested by the equivalent group technique, the belief congruence model is significantly more reliable than the congruity model as a predictor of cognitive interaction.

3. For the assertions tested in this study, the relative influence of the characterization component is significantly greater than the influence of the subject component. A positive correlation of .76 was observed between the evaluative scores assigned to the characterization component in isolation and the evaluative score assigned to the combined word combination (assertion).

In fact, the evaluative scores assigned to the characterization component are themselves a reasonably good indicator of interaction effect for certain word combinations.

4. The present belief congruence procedures do not take into account a specific type of overassimilation. In order to do so, it is apparently necessary to obtain a measurement of the direction of the overassimilation relative to the characterization component, independent of the evaluative scores assigned to the characterization in isolation.

THE RELATIVE ACCURACY AND RELIABILITY OF THE CONGRUITY AND BELIEF CONGRUENCE MODELS AS PREDICTORS OF COGNITIVE INTERACTION: A REPLICATION AND EXTENSION

by

William Elroy Tedrick

A THESIS

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

DOCTOR OF PHILOSOPHY

Department of Communication

1968

ACKNOWLEDGEMENTS

I find it extremely difficult to express adequately the appreciation deserved by so many individuals who spent hours in my behalf throughout my advanced degree program. My deepest appreciation goes to Dr. Gerald Miller for the expert professional guidance and assistance offered as Chairman of my doctoral committee and Director of the dissertation. Also, to my friend and former colleague, Dr. Gary Seevers, for a great amount of help on the statistical analysis so vital to the success of the study.

For continued assistance throughout my degree program, I would like to thank Doctors Milton Rokeach, Randall Harrison, Santo Camilleri, Everett Rogers, and Mason Miller. Their counsel and guidance as members of my doctoral committee were a helpful and rewarding experience.

A note of appreciation is extended to the Michigan Cooperative Extension Service, its administrators and my fellow colleagues for their understanding support. Special thanks is reserved for those in the College of Agriculture and Natural Resources who supported and made possible my sabbatical leave and financial support that helped to make it all a reality.

For typing this manuscript, I would like to express my appreciation to Mrs. Margaret Hudson. Her cheerful and efficient work made the many revisions more acceptable.

A sincere debt of gratitude is extended to my wife, Wanda, and the children, who all too often were required to defer their fondest wishes so that their father could go about his academic endeavors.

TABLE OF CONTENTS

CHAPTER		Page
I	INTRODUCTION.	1
	The Congruity Principle and Cognitive Interaction	3
	The Belief Congruence Principle and Cognitive Interaction	4
	Empirical Test of the Congruity Versus the Belief Congruence Principles as Predictors of Cognitive Interaction . . .	5
	The Type of Assertion and Cognitive Interaction	10
	The Objectives of the Investigation and Relevant Hypotheses	11
	Objective 1	11
	Objective 2	12
II	METHOD.	14
	Subjects.	14
	The Assertions and Their Components . . .	15
	Research Design	18
	The Measurement of Evaluative Meaning . .	20
	The Measurement of Relative Importance and the Computation of Cognitive Interaction by the Belief Congruence Principle	23
	Computing Cognitive Interaction by the Congruity Principle	28
	Administering the Test Materials.	30
	Preparation of Data for Machine Processing.	32
III	RESULTS	33
	Test Group Equivalency.	33
	Test of the Hypotheses.	42
	Objective 1	42
	Objective 2	59
	The Relationship of the Assertion (CS) Components to the Ability of the Congruity and Belief Congruence Models to Predict Cognitive Interaction Accurately.	62
	The Belief Congruence Model and Overassimilation.	65

TABLE OF CONTENTS (Cont.)

CHAPTER		Page
IV	CONCLUSIONS, DISCUSSION, AND IMPLICATIONS FOR FUTURE RESEARCH	88
	Conclusions Relative to Accuracy of Prediction of Cognitive Interaction by the Congruity and Belief Congruence Models	88
	Conclusion Relative to the Reliability of Prediction of Cognitive Interaction by the Congruity and Belief Congruence Models	90
	Conclusions Relative to the Theoretical Issues Underlying the Cognitive Interaction Processes and the Operational Dynamics of the Congruity and Belief Congruence Models.	91
	Implications for Future Research	93
BIBLIOGRAPHY		97
APPENDIX A		99
Part I		99
Part II.		107
APPENDIX B		114
VERBAL INSTRUCTION GIVEN VIA CCTV.		114

LIST OF TABLES

TABLE		Page
1.	The Relationship between the Number of Subjects Administered the Appropriate Test Materials and the Number of Subjects Eliminated from the Final Analysis	15
2.	Summary of the Subjects (S) and Characterizations (C) Used to Structure the Thirty-Six Verbal Assertions (CS) Employed in the Investigation, and the Mean Evaluative Meaning Assigned to each by Subjects	17
3.	Significance Test for Difference in Mean Evaluation Scores Between Equivalent Test Groups for Subjects (S), Assertions (CS) and Characterizations (C) on all 36 Combined Configurations	34-40
4a-f.	Mean Error of Prediction and Significance Tests of Difference Between Mean Obtained Evaluation Scores for Combined Concept and Mean Predicted by the Congruity Model and the Belief Congruence Model When Subject (S) is Constant and Characterization (C) is Varied	43-48
5a-f.	Mean Error of Prediction and Significance Tests of Difference Between Obtained Evaluation Scores for Combined Concept and Mean Predicted by the Congruity Model and the Belief Congruence Model When Subject (S) is Varied and Characterization (C) is Constant	49-54
6.	The Total Absolute Error of Prediction, the Average Absolute Error of Prediction per Assertion, and the Percent and Number of Assertions Predicted Accurately by the Congruity and Belief Congruence Models across all Test Groups and Assertions	56
7.	Total Mean Error of Prediction, the Mean Error of Prediction Per Assertion, and the Number and Percent of Assertions Predicted Accurately by the Congruity and Belief Congruence Models When the Subject (S) and the Characterization	

LIST OF TABLES (Cont.)

TABLE		Page
	(C) are either Held Constant or Varied in the Combined CS Configuration	60
8.	The Frequency and Percentage Distribution of the Failures Observed in the Application of the Congruity and Belief Congruence Models to Predict Cognitive Interaction as a Function of the Subject (S) and Characterization (C) Relative to the Combined CS Configurations	64
9.	The Percent of Respondents Who Indicated a Stronger Feeling Towards the Characterized Subject (CS) than They Felt Towards Other People Characterized in the Same Way (Over-assimilation)	66
10a-f.	Mean Difference Between the Evaluation of the Combined Configuration and each of the Two Components When the Subject (S) is Held Constant and the Characterization (C) is Varied	68-73
11a-f.	Mean Difference Between the Evaluation of the Combined Configuration and each of the Two Components When the Subject (S) is Varied and the Characterization (C) is Held Constant	74-79

LIST OF FIGURES

FIGURE		Page
1.	Systematic Assertion Structure Using Six Subject Components and Six Characterization Components	19
2.	Systematic Assignment of Assertions (CS) and their Corresponding S and C Components to the Twelve Test Groups Employed in the Research Design	21
3.	An Illustration of the General Application of the Three Semantic Differential Scales as a Measurement of Evaluative Meaning of S, C, and CS as Concepts.	22
4.	An Illustration of the General Application of the Relative Importance Rating as a Function of the Belief Congruence Principle	24-25
5.	A Schematic Illustration of Overassimilation not Accounted for by the Belief Congruence Model	83
6.	Recommended Revision of the Relative Importance Rating Form to obtain the direction of the overassimilation in relationship to the characterization component in the combined CS configuration.	85-86

CHAPTER 1

INTRODUCTION

The student of communication theory is especially interested in predictive models that increase his ability to explain behavioral changes resulting from a certain communicative act. Central to communication theory are the processes by which one assigns connotative meaning to stimuli that are encountered in his environment.

One rather narrow aspect of this process deals directly with the assignment of evaluative meaning to a single symbol or combination of symbols. For example, if one perceives the word NEGRO typed on a sheet of paper, he will assign certain evaluative meanings to it. Should one perceive the words DEMONSTRATING FOR CIVIL RIGHTS apart from the word NEGRO, he would probably assign evaluative meaning to the former independent of the latter. A central problem to communication theory, then, is how the association of such words as A NEGRO, with such phrases as DEMONSTRATING FOR CIVIL RIGHTS, will alter the meaning of the two different sets of words as perceived independently. Furthermore, if a cognitive interaction effect occurs, is it predictable from knowledge of the evaluative meaning that one has assigned to the two different components of the assertion, namely, A NEGRO and DEMONSTRATING FOR CIVIL RIGHTS, or is the resultant meaning a function of some gestalt? The ability to predict such cognitive interactions resulting

from the combination of verbal stimuli is directly related to the study of certain communicative acts, particularly from the viewpoint of attitude change and measurement.

The function of assigning connotative meaning to verbal stimuli is a cognitive process that can be operationally defined in terms of the semantic differential measurement procedure developed by Osgood, Suci, and Tannenbaum (9). Cognitive interaction can thus be defined, "...as the process by means of which a single evaluative meaning emerges as a result of combining two stimuli, each having their separate meaning (12)."

The ability to predict cognitive interaction is, in one way or another, the goal of the so-called "balance theories." Included in these theories are Festinger's (3) work on cognitive dissonance, Heider's (5) interpersonal relationship studies, and Newcomb's (7) strain towards symmetry. Fishbein and Hunter (16) investigated the relative virtues of the summation and balance model in attitude organization and change. However, the congruity and the belief congruence models attempt to make specific quantitative predictions regarding the outcome of cognitive interaction when verbal stimuli are associated.

The Congruity Principle and Cognitive Interaction

The congruity principle[1] is an additive model that attempts to predict the outcome of cognitive interaction solely from knowledge of the direction and degree of polarization of the two stimuli considered in isolation. The reduction of incongruity between the source and object (in the case of source-object assertions) is said to be achieved by a compromise in which the source and object both change toward or away from one another in inverse proportion to their respective degrees of polarity.[2] It follows, then, that the congruity principle is essentially a compromise model, the only exception being when an extremely polarized stimulus is positively associated with a neutral stimulus. In this situation the meaning of the combined stimuli is assimilated to

---

[1] Although the discussion presented here relative to the congruity and belief congruence principles has been slightly altered to fit the present situation, for all practical purposes it should be considered as verbatim quotations from the Rokeach and Rothman (12) study.

[2] The formula Osgood, Suci, and Tannenbaum use to predict the outcome of cognitive interaction is:

$$d_m = \frac{/da/}{/da/ + /dn/}(da) + \frac{/dn/}{/da/ + /dn/}(dn)$$ where

/d/ is deviation or polarization from neutrality on the scales regardless of sign, d is deviation from neutrality with respect to sign. (3, p. 278).

that of the extremely polarized stimulus. In addition, the congruity model formally posits an assertion constant in the case of source-object assertions, in order to correct for the greater force assumed to be acting on the object. In all cases, the congruity principle assumes complete credulity, and uses quantitative corrections for relevance-nonrelevance, derogation-nonderogation and adjective-noun combinations to modify the predictive outcome of the model.

The Belief Congruence Principle and Cognitive Interaction

The belief congruence principle asserts that the cognitive comparison process cannot be activated until the two stimuli are linked together to form a unique gestalt (1, 6). Thus, the outcome of cognitive interaction cannot be accurately predicted solely from a knowledge of the direction and intensity of the two stimuli considered separately. Rokeach points out that all types of assertions associating two stimuli have something in common:

> ...they are unique configurations cognitively representing a characterized subject (CS)--a person, thing, or idea characterized or qualified in some unique way. The unique configuration consists of two components: a subject (S), capable of being characterized in many ways, and a characterization (C), capable of being applied to many subjects. (12, p. 129)

Rokeach goes on to state the principle of belief congruence in this way:

> Whenever two stimuli are brought into association with one another through an assertion they form a unique configuration activating two kinds of comparison processes: the stimuli will first be

> compared for mutual relevance, and if they are perceived to be at least partially relevant for one another, they will then be compared for relative importance. (12, p. 129)

The belief congruence principle thus asserts that incongruity arises not from the psychological disparity between C and S but from the disparity between C and CS, or between S and CS, or both. In contrast to the congruity principle, the belief congruence model allows for various degrees of compromise, and for assimilation and overassimilation, depending on the relative importance of C versus S and of C versus CS, in the context CS, regardless of the degree of polarization of C and S when considered separately. A detailed statement of the comparisons suggested above and the relevant formuli are given in Chapter 2.

Obviously, the development of the two different principles leads to instances of contradictory predictions, and to a concern as to which model is a more accurate predictor of cognitive interaction.

Empirical Test of the Congruity Versus the Belief Congruence Principles as Predictors of Cognitive Interaction

The theoretical rationale and the empirical evidence supporting the congruity principle and its application to the prediction of cognitive interaction are presented by Osgood, Suci, and Tannenbaum (8, 9). Their work deals with the combining of verbal stimuli commonly classified as nouns and adjectives. Specifically, their study investigated the ability

of the congruity principle to predict the interaction effects of combining eight nouns: NURSE, SCIENTIST, THUG, PROSTITUTE, HUSBAND, COMEDIAN, IMP, and SECRETARY with eight adjectives: ARTISTIC, HAIRY, LISTLESS, AVERAGE, SINCERE, SHY, TREACHEROUS, and BREEZY.

These eight nouns and adjectives were combined in all possible ways (64 possible combinations) and submitted to eight different test groups. Respondents rated all 16 concepts on three semantic differential scales, selected for their loadings on the Evaluative, Potency, and Activity factors. After rating each concept separately, the subject rated one of the eight nouns in combination with each of the adjectives; that is, each of the eight test groups rated only one series of possible noun-adjective combinations for their combined interaction meaning. Ratings were obtained on the same set of scales employed for the single noun and adjective list.

The predictive accuracy of the congruity formula was determined relative to various criteria, but perhaps the most rigorous one used was the mean error of prediction across the 64 combinations on the Evaluation, Potency, and Activity factors. The average units of error reported for the Evaluative factor was .92, or nearly one scale unit per noun-adjective combination. This error of prediction was well beyond the reliability estimate assumed on an a priori basis, and was approximately three times greater than the error of prediction for the Potency and Activity factors. In their

summary, Osgood, Suci, and Tannenbaum state:

> The results of this study show that the semantic effects of word combinations are neither haphazard nor unique. In terms of the average meaning of the word combinations, semantic effects follow expectations from a congruity principle quite closely. Analysis of the data from individual subjects, however, reveals consistent errors in prediction with the congruity formula: particularly on the evaluation scale, the measured meanings of combinations regularly deviate by being more unfavorable (bad, weak, and passive) than predicted. It was also shown that the congruity formula predicted less and less well as the angular displacement of word components in the semantic space increases. In other words, the less comparable two signs that are put in combination, in terms of sharing of characteristic attributes, the less congruity they display; and the failure of congruity under these conditions typically appears as a dominance of the unfavorably evaluated component. (9, p. 283)

In 1965, Rokeach and Rothman (12) reported the results of an investigation designed to test the theoretical implications of the belief congruence model and to compare the relative accuracy of the belief congruence and congruity models as predictors of cognitive interaction resulting from various word combinations. For their study, Rokeach and Rothman selected 12 different word combinations representing three of the four types of assertions defined by Osgood et al. (9, p. 202) Specifically, the assertions included simple linguistic qualification, statements of classification, and source-object assertions as follows: 'A WHITE PERSON who is a COMMUNIST'; 'A WHITE PERSON who is an ATHEIST'; 'A NEGRO who believes in GOD'; 'A NEGRO who is an ANTICOMMUNIST'; 'My MOTHER is INSINCERE'; 'UNIVERSITY PROFESSOR favors EXTRAMARITAL

SEXUAL RELATIONS'; 'CLARK GABLE was in favor of FIDEL CASTRO'; 'DISHONEST ATHLETE'; 'NIKITA KRUSHCHEV advocates CLOSE FAMILY TIES'; 'UNFAITHFUL ROMANCE'; 'RUSSIA extends FREEDOM OF THE PRESS'; 'A PROSTITUTE who looks like GRACE KELLY'.

The 12 assertions listed above generated 22 different concepts (the word or series of words in caps make up the two component parts of each assertion; i.e., A WHITE PERSON and COMMUNIST in the case of Assertion 1) that were rated across the same three item semantic differential scale of the Evaluative dimension used by Osgood and Ferguson and reported in Osgood, Suci, and Tannenbaum (9). In addition, a second supposedly comparable sample of subjects rated each assertion for relative importance of the component parts. Although both sets of subjects were university students enrolled in introductory psychology courses at Michigan State University, this methological procedure creates design problems that are dealt with in the present investigation and that are discussed in greater detail in this chapter.

The values predicted by the two models were then compared to the actual ratings assigned to each of the 12 assertions by the subjects. Differences between the obtained mean evaluation scores for each assertion and the predicted mean evaluation scores for each of the models were treated as "error of prediction."

Tolerance for acceptable error of prediction was assumed to be no greater than "chance error" and was

operationally defined as a function of a t-test for matched or correlated groups (4). That is, if the difference between the predicted evaluative meaning scores and the obtained evaluative meaning scores was greater than zero at the .05 level, it was assumed that the model was a poor predictor of the interaction effect between the two component parts of the assertions. Although Rokeach and Rothman (12) considered several different criteria to determine accuracy of prediction, they concluded that a criterion based on the amount of absolute error between the obtained scores and the predicted scores as computed for each model was the most rigorous test of accuracy. Using this test of accuracy, then, it was assumed that when the difference between the obtained mean evaluation scores and the predicted mean evaluation scores for the two models was large enough to be evaluated as significant at the .05 level, the two models differed in their predictive accuracy.

Based on this criterion, the results revealed that the belief congruence principle reduced the average error of prediction over the 12 assertions by about two-thirds when compared to the congruity principle. Rokeach and Rothman reported an average error of 1.07 units per assertion for the congruity model, but only .34 units of error for the belief congruence model. In addition, the belief congruence model correctly predicted nine of the 12 assertions, while the congruity principle correctly predicted only four of the

12 assertions. Thus, the belief congruence principle not only reduced the total error of prediction, it predicted over twice as many assertions correctly.

The Type of Assertion and Cognitive Interaction

As indicated above, Osgood *et al* (9) have specified four types of assertions in which one may perceive a relationship between two stimuli, each with their own evaluative meaning. It is further assumed that the assertion associates the two stimuli in such a way that a new evaluative meaning is assigned to them. The assertions might be in the form of verbal statements written or printed on sheets of paper or of nonverbal symbols associated in some manner; e.g., a photograph of George Wallace, former governor of Alabama, shaking hands with Cassius Clay, former heavyweight boxing champion. No matter what their form, Osgood *et al* suggest that the assertions can be categorized into four general types: (1) simple linguistic qualification, (2) simple perceptual contiguity (as suggested above with Wallace shaking hands with Clay), (3) statements of classification, and (4) source-object assertions. The studies reviewed above, as well as the present study, deal only with word combinations utilizing assertions that associate two independent sets of printed verbal stimuli of types 1, 3, and 4.

Rokeach and Rothman (12) viewed the assertion as composed of two component parts, known as the *subject* (S) and the

characterization (C); therefore, the assertion was defined as the subject characterized (CS) in some unique manner. This general formulation is used in the present study.

However, one form of assertion was not used at all in the Osgood and Ferguson Study, and was used only moderately by Rokeach and Rothman. This is the form in which the copula or action itself is capable of being assigned evaluative meaning apart from the assertion's associative or disassociative function. For instance, the assertion, A NEGRO DEMONSTRATING FOR CIVIL RIGHTS illustrates how the copula or assertive action (DEMONSTRATING) has a meaning apart from the assertion A NEGRO IS FOR CIVIL RIGHTS. In a general sense, the copula 'DEMONSTRATING' places the subject in a specific activity or situation that serves to characterize him somewhat differently than most of the assertions employed by Rokeach and Rothman. This distinction is central to the present study, since only assertions of the activity or situational form were employed in the research.

The Objectives of the Investigation and Relevant Hypotheses

The present investigation sought to achieve two broad objectives. In addition, three hypotheses based on the theoretical rationale and empirical results reported in the 1965 study by Rokeach and Rothman (12) were tested.

Objective 1

The first objective was to test the relative accuracy of the congruity and belief congruence models as predictors

of cognitive interaction resulting from word combinations of a specific type not generally tested before; i.e., combinations in which the copula or action itself is capable of being assigned evaluative meaning. It was assumed that the results of this test would either support or refute the earlier reported (Rokeach and Rothman, 12) general superiority of the belief congruence model over the congruity model. Specifically, the following two hypotheses were tested:

Hypothesis No. 1:

When assertions that express a situation or activity are tested under identical conditions, the belief congruence model will manifest significantly less mean error of prediction per word combination than will the congruity model.

Hypothesis No. 2:

When assertions that express a situation or activity are tested under identical conditions, the belief congruence model will accurately predict a significantly greater number of word combinations than will the congruity model.

Objective 2

A second objective of this investigation was to test the relative reliability of the congruity and belief congruence models as predictors of cognitive interaction resulting from word combinations, when the same combinations are tested across equivalent groups of subjects. Obviously, the ability of a model to predict accurately across different groups is a useful test of reliability. Specifically, the following hypothesis was tested:

Hypothesis No. 3:

When assertions that express a situation or activity are tested under identical conditions, the belief congruence principle will manifest significantly greater reliability of prediction than the congruity principle when the same word combinations are tested across different but equivalent groups.

CHAPTER 2

METHOD

Subjects

Subjects were 849 high school age youth attending the State 4-H Club Week program at Michigan State University in June, 1967. Most subjects were junior and senior level high school students selected to attend the event from about every Michigan county. The ratio of girls to boys was about 2 to 1.

Prior to completing the test materials, the 849 subjects were randomly assigned to 12 different test groups. There was considerable attrition of subjects. Of the 849 who responded to the test materials, 230 were eliminated because they obviously did not understand the instructions. Most of the difficulty stemmed from the relative importance rating required by the belief congruence model: Either subjects left one or more of the questions unanswered, the two required percentage estimates did not add up to 100, or subjects answered question 1b when they should have answered question 2c, or vice versa. Table 1 summarizes the actual breakdown on subject assignment to test groups and the number of usable tests obtained from subjects in each group.

While the loss of 27.1 percent of the subjects may seem excessive, it does not differ greatly from the nearly 20 percent loss reported by Rokeach and Rothman (12, p. 129). Unlike the present study, Rokeach and Rothman were working

with college level subjects who might be expected to deal more effectively with the rather difficult relative importance rating. Also Rokeach and Rothman administered their test materials in a classroom situation, while in the present investigation, the materials were administered using closed circuit television and room monitors. These considerations further explain the relatively large number of improperly marked questionnaires.

Table 1. The Relationship between the Number of Subjects Administered the Appropriate Test Materials and the Number of Subjects Eliminated from the Final Analysis

Test Group Number	Subjects Assigned Test Forms	Subjects Completing Usable Forms	Percent of Subjects Eliminated
1	68	55	19.2
2	69	43	37.7
3	66	50	24.3
4	70	49	30.0
5	73	47	35.6
6	69	54	21.8
7	78	55	29.5
8	72	56	22.2
9	69	55	20.3
10	71	55	22.6
11	71	52	26.8
12	73	48	24.3
Total	849	619	Ave. 27.1

The Assertions and Their Components

Development of the assertions used in this study was guided by three major criteria: (1) the component parts--

i.e., the subject (S) and the characterization (C)--had to be selected so that each component part could logically be combined or associated with all other component parts; (2) each assertion had to be designed so that the subject (S) was always combined with a characterization (C) which specified an action or situation, and (3) the subject (S) and characterization (C) components had to generate a reasonably wide range of connotative meanings. As was the case in prior word combination studies, the word combinations (assertions) used in this investigation were assumed to have complete credulity (8, 9, 12).

The six subjects (S) and six characterizations (C) included in this investigation are summarized in Table 2. A pilot study revealed that the 36 different assertions (CS's) structured from the set of six subjects (S) and six characterizations (C) satisfied the three criteria given above reasonably well.

The 36 assertions (CS's) were formed by systematically associating each of the six subjects (S) with each of the characterizations (C). As Table 2 shows, it was possible to associate a highly positive S with a relatively negative C [MY FATHER (+2.56) with USING A HABIT FORMING DRUG (-2.57)] or a relatively negative S with a relatively positive C [A COMMUNIST (-1.93) with PUNISHING A CHILD (+1.73)]. The remaining CS's form associations falling in between these two extremes.

Table 2. Summary of the Subjects (S) and Characterizations (C) Used to Structure the Thirty-Six Verbal Assertions (CS) Employed in the Investigation, and the Mean Evaluative Meaning Assigned to each by Subjects

Assertion Components	Mean Evaluative Meaning Assigned by Subjects Rating Component*	Number of Subjects Rating Component
SUBJECTS (S)		
MY FATHER	6.53	376
A PROTESTANT	5.59	368
A CATHOLIC	5.49	375
A WHITE PERSON	5.26	364
A NEGRO	5.20	371
A COMMUNIST	2.61	370
CHARACTERIZATIONS (C)		
PUNISHING A CHILD	5.73	353
ATTENDING A FUNERAL	5.26	350
FIGHTING THE VIET CONG	5.03	354
PROMOTING BIRTH CONTROL	4.61	353
DEMONSTRATING FOR CIVIL RIGHTS	3.87	353
USING A HABIT FORMING DRUG	1.43	346

*The components were rated on a three item semantic differential scale, using bipolar adjectives loading highly on the evaluative factor. Mean scores were calculated on a 1 through 7 basis which is equivalent to a range from -3 to +3. The + or - scale score can be obtained by subtracting 4.00 from the scores in the table.

The mean evaluation score was obtained by averaging the individual scores assigned by the respondents who actually rated the concept in the investigation. For example, 376 of the 849 respondents who participated in the study rated the concept MY FATHER.

Although the evaluative scores assigned to the six subjects (S) ranged from -1.39 to +2.53, four of the six clustered between +1.20 to +1.59, which does not represent as much variation as would be optimally desirable. The range of evaluative meaning scores assigned to the characterizations (C) was more satisfactory, except that the most positive characterization was at the +1.73 level, representing an upper positive limit that was less extreme than optimally desirable.

Research Design

The 36 different assertions used in this study are summarized in Figure 1. Each assertion is structured for each cell by combining the corresponding S and C. For example, Assertion C_1S_1 is MY FATHER PROMOTING BIRTH CONTROL, and Assertion C_6S_6 is A CATHOLIC USING A HABIT FORMING DRUG. All other cells are read in a like manner.

In Figure 1 the assertions across rows have the S component held constant, while the assertions across columns have the C component held constant. This particular design made it possible to assign the six assertions in each of the six rows in Figure 1 to six different, but equivalent test groups, and to assign each of the six assertions in each of the six columns in Figure 1 to six different, but equivalent test groups. Thus, a total of 12 different, but equivalent test groups were employed in the study design. The design is illustrated more clearly in Figure 2.

Subject Component*	Characterization Component**					
	C_1	C_2	C_3	C_4	C_5	C_6
S_1	C_1S_1	C_2S_1	C_3S_1	C_4S_1	C_5S_1	C_6S_1
S_2	C_1S_2	C_2S_2	C_3S_2	C_4S_2	C_5S_2	C_6S_2
S_3	C_1S_3	C_2S_3	C_3S_3	C_4S_3	C_5S_3	C_6S_3
S_4	C_1S_4	C_2S_4	C_3S_4	C_4S_4	C_5S_4	C_6S_4
S_5	C_1S_5	C_2S_5	C_3S_5	C_4S_5	C_5S_5	C_6S_5
S_6	C_1S_6	C_2S_6	C_3S_6	C_4S_6	C_5S_6	C_6S_6

* S_1 - My Father
S_2 - A White Person
S_3 - A Negro
S_4 - A Communist
S_5 - A Protestant
S_6 - A Catholic

** C_1 - Promoting Birth Control
C_2 - Fighting the Viet Cong
C_3 - Demonstrating for Civil Rights
C_4 - Punishing a Child
C_5 - Attending a Funeral
C_6 - Using a Habit Forming Drug

Figure 1. Systematic Assertion Structure Using Six Subject Components and Six Characterization Components.

From Figure 2, the S and C components and the corresponding CS's that were presented to each test group can be determined. For example, subjects in Test Group 1 rated S_1 (MY FATHER) and C_1 through C_6 (PROMOTING BIRTH CONTROL, FIGHTING VIET CONG, DEMONSTRATING FOR CIVIL RIGHTS, PUNISHING A CHILD, ATTENDING A FUNERAL, USING A HABIT FORMING DRUG) as independent concepts. They then rated the CS configuration

when S_1 was associated with each characterization C_1 through C_6. The latter measurement was defined operationally as the obtained evaluative meaning score, and served as the basis for determining the accuracy of the predicted scores. The predictive scores were obtained by the application of the S and C evaluation scores secured independently of each other and independently of the CS rating, and applied to the congruity and belief congruence formuli. Each cell in Figure 2 can be interpreted in the same manner. It should be noted, however, that Test Groups 1 through 6 have the S constant and the C varied, while Test Groups 7 through 12 have the S varied and the C constant.

It should also be noted that in this design each assertion and its corresponding components are rated by two independent but equivalent test groups. Thus, one can determine the relative reliability of the two models in predicting cognitive interaction across independently selected groups as well as within a single group. This design characteristic provides the basis for dealing with Objective 2 of the study.

The Measurement of Evaluative Meaning

As stated in Chapter 1, one purpose of the present research was to attempt to replicate the results obtained in two earlier studies on word combinations and cognitive interaction. In both the Osgood (9) and the Rokeach and Rothman (12) studies, semantic differential scales were used to obtain

Test group	Components and Corresponding Assertions Rated by the Test Group*					
1	C_1S_1	C_2S_1	C_3S_1	C_4S_1	C_5S_1	C_6S_1
2	C_1S_2	C_2S_2	C_3S_2	C_4S_2	C_5S_2	C_6S_2
3	C_1S_3	C_2S_3	C_3S_3	C_4S_3	C_5S_3	C_6S_3
4	C_1S_4	C_2S_4	C_3S_4	C_4S_4	C_5S_4	C_6S_4
5	C_1S_5	C_2S_5	C_3S_5	C_4S_5	C_5S_5	C_6S_5
6	C_1S_6	C_2S_6	C_3S_6	C_4S_6	C_5S_6	C_6S_6
7	C_1S_1	C_1S_2	C_1S_3	C_1S_4	C_1S_5	C_1S_6
8	C_2S_1	C_2S_2	C_2S_3	C_2S_4	C_2S_5	C_2S_6
9	C_3S_1	C_3S_2	C_3S_3	C_3S_4	C_3S_5	C_3S_6
10	C_4S_1	C_4S_2	C_4S_3	C_4S_4	C_4S_5	C_4S_6
11	C_5S_1	C_5S_2	C_5S_3	C_5S_4	C_5S_5	C_5S_6
12	C_6S_1	C_6S_2	C_6S_3	C_6S_4	C_6S_5	C_6S_6

* S_1 - My Father

S_2 - A White Person

S_3 - A Negro

S_4 - A Communist

S_5 - A Protestant

S_6 - A Catholic

*C_1 - Promoting Birth Control

C_2 - Fighting the Viet Cong

C_3 - Demonstrating for Civil Rights

C_4 - Punishing a Child

C_5 - Attending a Funeral

C_6 - Using a Habit Forming Drug

Figure 2. Systematic Assignment of Assertions (CS) and their Corresponding S and C Components to the Twelve Test Groups Employed in the Research Design.

measurements of the evaluative meanings assigned to the concepts studied. These researchers used three scales loading highly on the evaluative factor: good-bad, deplorable-admirable, and worthless-valuable, and employed the same procedural techniques used in the present study.

In the present investigation the concepts rated were the six different C's, the six different S's, and their corresponding 36 different CS's. The general form of the semantic differential scale used is given in Figure 3. The complete test booklet is found in Appendix A.

MY FATHER (S)

good___:___:___:___:___:___bad

deplorable___:___:___:___:___:___admirable

valuable___:___:___:___:___:___worthless

PROMOTING BIRTH CONTROL (C)

good___:___:___:___:___:___bad

deplorable___:___:___:___:___:___admirable

valuable___:___:___:___:___:___worthless

MY FATHER PROMOTING BIRTH CONTROL (CS)

bad___:___:___:___:___:___good

deplorable___:___:___:___:___:___admirable

worthless___:___:___:___:___:___valuable

Figure 3. An Illustration of the General Application of the Three Semantic Differential Scales as a Measurement of Evaluative Meaning of S, C, and CS as Concepts.

The Measurement of Relative Importance and the Computation of Cognitive Interaction by the Belief Congruence Principle

To fulfill the requirements of the belief congruence principle, it was necessary to measure the relative importance the respondent assigned to the subject (S) and characterization (C), both in relationship to one another, and also in the context of CS versus C. The procedure for obtaining these responses was developed by Rokeach and Rothman (12) and was employed in the present investigation with two minor alterations that increased the subject's ability to understand how to respond to the instrument.

Figure 4 illustrates the general form of this measurement. As can be noted from the complete test booklet in Appendix A, the Relative Importance rating was labeled as Part II and was preceded by appropriate verbal instructions and by the CS rating pages. The form was so structured that the respondent was forced to again indicate how he felt towards each assertion (CS) on a 1 to 7 scale. Rokeach and Rothman (12) reported that the addition of the evaluative rating of CS immediately prior to the required comparison ratings increased significantly the ability of the subjects to understand the instructions on how to make the comparisons.

Question 2 sets the framework which enables the respondents to make the C vs S comparison rating. If the respondent felt that C did not completely influence his feelings about the complete CS configuration, he simply moved to Question

1. How do you feel about: MY FATHER PROMOTING BIRTH CONTROL

   STRONGLY ___:___:___:___:___:___:___:STRONGLY
   DISAPPROVE 1 2 3 4 5 6 7 APPROVE

2. In rating MY FATHER PROMOTING BIRTH CONTROL the way you did, how important, that is, how much weight did the words PROMOTING BIRTH CONTROL have in determining your rating of the statement, MY FATHER PROMOTING BIRTH CONTROL? Did you feel about the combination MY FATHER PROMOTING BIRTH CONTROL the same way you felt about the words PROMOTING BIRTH CONTROL or the same way you felt about MY FATHER? Estimate how much weight PROMOTING BIRTH CONTROL and MY FATHER had in determining the way you actually rated the combination MY FATHER PROMOTING BIRTH CONTROL.

   a. My feelings about PROMOTING BIRTH CONTROL completely (100%) determined the way I rated MY FATHER PROMOTING BIRTH CONTROL. (Check the one that applies).

      YES___Now go to question b. Do not answer question c.

      NO ___Now go to question c. Do not answer question b.

   b. In fact, my feelings about MY FATHER PROMOTING BIRTH CONTROL are even more extreme than my feelings about other people PROMOTING BIRTH CONTROL.

      Answer those that apply to you:

      ___No, my feelings about MY FATHER PROMOTING BIRTH CONTROL and PROMOTING BIRTH CONTROL are about equal strength.

      ___Yes, my feelings about MY FATHER PROMOTING BIRTH CONTROL are even stronger than my feelings about other people PROMOTING BIRTH CONTROL.

      How much stronger? Check the one that would be closest to your best guess:
      ___Slightly stronger (1% stronger)?

      ___Quite a bit stronger (50% stronger)?

      ___Much, much stronger (100% stronger)?

   c. My feelings about PROMOTING BIRTH CONTROL did not completely determine my rating of the combination MY FATHER PROMOTING BIRTH CONTROL. Indicate on the scales below how much you think each part of

the statement influenced you:

Assume that each scale equals 100%. Check the point on each scale which you think best describes the amount of influence that part of the statement had on your rating of the statement on the whole. Remember that the percentage checked on each scale when added together must be equal to 100 percent.

MY FATHER: ___:___:___:___:___:___:___:___:___:___:___:
0 10 20 30 40 50 60 70 80 90 100

PROMOTING BIRTH CONTROL

:___:___:___:___:___:___:___:___:___:___:___:
0 10 20 30 40 50 60 70 80 90 100

Please Check: Add the two percentages together that you have checked. Do they equal 100%? If not, readjust your rating so that they sum to 100%.

Figure 4. An Illustration of the General Application of the Relative Importance Rating as a Function of the Belief Congruence Principle.

c where he indicated on the two scales what percent influence the C and S contributed to his overall feeling about CS. The addition of the equal interval scale used in this study represents a change from the Rokeach and Rothman format. They requested the respondent to indicate the percent he assigned to the C and S in the combined CS configuration. It was felt that the scale used in this study would facilitate understanding on the part of respondents. The second modification of Rokeach and Rothman's procedures consisted of the addition of the instructions in Question 2a following the response categories "Yes" and "No." The respondent was instructed not to answer Question c if he had responded "Yes" to Question 2a, or not to answer Question b if he had responded "No" to Question 2a. This alteration was suggested by the results of a pilot study using high school youth, and appeared to increase the ability of the youth to respond appropriately to the forms.

Next consider the obtained ratings of relative importance in relationship to the formuli used to compute the interaction evaluative meaning assigned to the CS from the individual ratings of C and S.

First, consider formula one:

$$d_{cs} = (w)\ d_c + (1-w)\ d_s \quad [1]$$

where (w) and (1-w) refer to the perceived importance of d_c and d_s in the context of CS. Operationally, then, if a

respondent checked Question 2a as "No" and moved to 2c and indicated a 40 percent importance for the S and a 60 percent importance for the C, d_c was weighted by the value of .6 and d_s = (1-.6) or .4. Thus, by inserting the evaluative meaning value the respondent assigned to the C and the S, it was possible to compute the d_{cs} (CS) and obtain the predicted value based on the belief congruence principle.

Second, consider formula two:

$$d_{cs} = d_c + (v)\ d_c \quad [2]$$

where (v) is the coefficient assigned according to how much more negatively or positively the respondent indicated he felt toward the CS than he did toward the C alone. This measurement was used when the respondent checked "No" to Question 2a and "Yes" to Question 2b, with the coefficient being either .1, .5, or 1.0. If the respondent indicated "No" on Question 2b, (v) becomes 0 and $d_{cs} = d_c$. Operationally, then, the evaluative rating for d_c (C) was inserted in the formula and the weighted value of d_c, obtained from Question 2b, was added to account for the overassimilation towards the C component of the CS configuration. It must be noted, however, that the overassimilation is restricted to the extremes of the measurement scale being employed. In the present study, the scale was based on a -3 to +3 range; thus, the weighted evaluative meaning of the d_{cs} cannot exceed -3 or +3 due to limitations imposed by the measurement procedures.

Predicted CS scores were computed on the basis of either formula 1 or 2 above for each subject for each assertion rated. These individual scores were then averaged over all subjects rating each assertion (CS).

Computing Cognitive Interaction by the Congruity Principle

Operationally, the congruity principle requires only the measurement of the evaluative meaning the subject assigns to the C and S in the CS configuration. These measurements are obtained by the semantic differential method discussed above.

Assuming that no corrective constants are employed, the evaluative meaning ratings are inserted into the formula below:

$$d_{cs} = \frac{/dc/}{/d_c/ + /d_s/} (d_c) + \frac{/d_s/}{/d_c/ + /d_s/} (d_s)$$

where /d/ is deviation or polarization from neutrality on the scale regardless of sign, and (d) is deviation from neutrality with respect to sign (1, p. 287). Assuming that across the three scales the respondent had assigned the evaluative meaning ratings of -1.5 to the d_c and +2.3 to the d_s then:

$$d_{cs} = \frac{1.5}{1.5 + 2.3} (-1.5) + \frac{2.3}{1.5 + 2.3} (+2.3)$$

Therefore, $d_{cs} = .86$ as a function of cognitive interaction between the C and S components of the assertion based on the congruity principle.

Predicted CS scores were computed for each subject for each assertion rated. These individual predicted scores were then averaged over all subjects rating each assertion (CS).

Given the present research design, it was necessary to construct 12 different sets of test materials, one for each of the 12 different test groups. Each set was designed to enable the subject to rate 13 different concepts on the same three semantic differential scales, with each concept rated independently of the others insofar as possible. In addition, each subject was required to make relative importance ratings of the same six assertions (CS) he had already rated on the semantic differential scales.

The problem of keeping each concept rating independent of the others was handled by placing only one concept at a time on a half sheet of paper. Thus, each set of test materials contained 13 half sheets of paper.

To control for order effects, the half sheets of paper were rotated in a systematic order. That is, in the case of subject (S) and characterization (C), about one-seventh of the respondents received the test materials with the concepts presented in the same order. In the case of the CS ratings, about one-sixth of the respondents received the test sets with the CS's in the same order. This ordering effect was accomplished by numbering the half-sheets from one to 13 and then rotating the order in which they were assembled to conform to the control specifications.

The relative importance rating sheets were also rotated on a one-sixth basis, and in the same order used in the case of the CS's rated as concepts on the semantic differential scales.

The usual procedure of alternating the semantic differential adjective pairs was carried out, with one set of adjectives being reversed for each of the 13 sets of scales. Since the random assignment of adjective pairs both in terms of polarity and vertical location in the set of three scales would have made machine processing very difficult, the scales were not rotated vertically.

Overall, then, the complete test booklet was constructed as follows: The standard semantic differential instructions appeared on the first page (blue) of the test booklet. These instructions were followed by 13 half-sheets of paper on which the individual concepts appeared along with the three semantic differential scales. Immediately following the 13 concept rating forms, a yellow instruction sheet for Part II was inserted. This sheet was followed by the six relative importance rating sheets. The Test Group number and individual respondent identification number were placed on the cover page.

Administering the Test Materials

In the organization of the Club Week Program, the 849 subjects had been randomly placed in 30 different sub-groups and assigned separate rooms in Bessey Hall. Each room was

equipped with closed circuit television sets.

The investigator recruited room monitors and trained them to assist with the administration of the test materials used in the investigation. These room monitors were for the most part professional Extension 4-H - Youth agents assisting with the programs.

The test materials were divided into 30 different packets in which approximately the same number of each of the 12 different sets were placed. The room monitors were instructed to hand the test materials out randomly to the subjects.

Prior to the actual administration of the test, the investigator made a videotape recording of the instructions for completing the test forms. This recording enabled the investigator to administer the test materials to all groups under the same conditions and to administer test materials to a relatively large number of subjects in a period of about one hour.

Room monitors were in position to give additional assistance to individual subjects if they did not fully understand the video presentation. However, it was the investigator's observation that little additional assistance was required by the subjects, and the monitors' main role was to distribute the test forms and collect them when the subjects had finished.

Preparation of Data for Machine Processing

The 849 forms were reviewed for completeness to determine if the respondent had followed the instructions. From this review a total of 619 forms were found to be complete and were retained for analysis.

Each form was then re-assembled into its base form so that the data processing card column numbers pre-assigned to the forms were in consecutive order. Each form was coded according to the format required for punching the data cards. The data were then transferred to punch cards and processed by the Computer Center at Michigan State University.

CHAPTER 3

RESULTS

Test Group Equivalency

In the study design, subjects in two independently composed groups assigned evaluation scores to each assertion and its component parts as illustrated in Table 3. To some extent, the analysis presented in this chapter depends upon the equivalency of the mean evaluation scores for the two groups. Equivalency is particularly essential in the test of Hypothesis 3, the hypothesis dealing with relative reliability of the two predictive models.

Table 3 contains the mean evaluation scores assigned by respondents in the two groups to the subjects (S), characterizations (C), and combined configurations (CS) for all 36 assertions employed in the study. A simple analysis of variance was computed for each pair of group mean scores to determine if they were significantly different. The results of the analysis appear in Table 3. Pairs for which the mean evaluation scores differ at the .05 level are viewed as significantly different, while pairs which do not differ at the .05 level are considered equivalent.

The design allowed a total of 108 comparisons of mean scores: 36 comparisons between the six subject (S) components used in the study, 36 comparisons between the six characterization (C) components used in the study, and 36 comparisons between the 36 different combined (CS) configurations tested.

Table 3. Significance Test for Difference in Mean Evaluation Scores Between Equivalent Test Groups for Subjects (S), Assertions (CS) and Characterizations (C) on all 36 Combined Configurations

Assertion and Component		Mean Evaluation Scores				
		Subject Constant Characterization Varied		Subject Varied Characterization Constant		
		Mean	N	Mean	N	P
1.	MY FATHER	6.56	55	6.46	55	NS
	MY FATHER PROMOTING BIRTH CONTROL	3.81		3.81		NS
	PROMOTING BIRTH CONTROL	4.55		4.58		NS
2.	MY FATHER	6.56	55	6.49	56	NS
	MY FATHER FIGHTING THE VIET CONG	4.85		4.39		NS
	FIGHTING THE VIET CONG	4.93		4.68		NS
3.	MY FATHER	6.56	55	6.69	55	NS
	MY FATHER DEMONSTRATING FOR CIVIL RIGHTS	3.62		3.84		NS
	DEMONSTRATING FOR CIVIL RIGHTS	4.09		3.91		NS
4.	MY FATHER	6.56	55	6.51	55	NS
	MY FATHER PUNISHING A CHILD	5.49		5.75		NS
	PUNISHING A CHILD	5.66		5.68		NS
5.	MY FATHER	6.56	55	6.64	52	NS
	MY FATHER ATTENDING A FUNERAL	5.43		5.60		NS
	ATTENDING A FUNERAL	5.34		5.14		NS

Table 3 (Cont.)

Assertion and Component		Mean Evaluation Score				
		Sk Cv		Sv Ck		
		Mean	N	Mean	N	P
6.	MY FATHER	6.56	55	6.40	48	NS
	MY FATHER USING A HABIT FORMING DRUG	1.44		1.39		NS
	USING A HABIT FORMING DRUG	1.44		1.35		NS
7.	A WHITE PERSON	4.84	43	5.13	55	NS
	A WHITE PERSON PROMOTING BIRTH CONTROL	4.82		4.57		NS
	PROMOTING BIRTH CONTROL	5.00		4.58		NS
8.	A WHITE PERSON	4.84	43	5.38	56	$<.05$
	A WHITE PERSON FIGHTING THE VIET CONG	5.37		5.28		NS
	FIGHTING THE VIET CONG	5.08		4.68		NS
9.	A WHITE PERSON	4.84	43	5.58	55	$<.05$
	A WHITE PERSON DEMONSTRATING FOR CIVIL RIGHTS	4.49		4.35		NS
	DEMONSTRATING FOR CIVIL RIGHTS	4.15		3.91		NS
10.	A WHITE PERSON	4.84	43	5.42	55	$<.05$
	A WHITE PERSON PUNISHING A CHILD	5.34		5.58		NS
	PUNISHING A CHILD	5.53		5.68		NS
11.	A WHITE PERSON	4.84	43	5.35	52	$<.05$
	A WHITE PERSON ATTENDING A FUNERAL	5.19		5.23		NS
	ATTENDING A FUNERAL	5.00		5.14		NS

Table 3 (Cont.)

Assertion and Component		Mean Evaluation Score				
		Sk Cv		Sv Ck		
		Mean	N	Mean	N	P
12.	A WHITE PERSON	4.84	43	5.18	48	NS
	A WHITE PERSON USING A HABIT FORMING DRUG	1.66		1.60		NS
	USING A HABIT FORMING DRUG	1.43		1.35		NS
13.	A NEGRO	5.78	50	5.16	55	$<.05$
	A NEGRO PROMOTING BIRTH CONTROL	5.10		4.56		NS
	PROMOTING BIRTH CONTROL	5.10		4.58		NS
14.	A NEGRO	5.78	50	5.00	56	$<.05$
	A NEGRO FIGHTING THE VIET CONG	6.09		5.52		$<.05$
	FIGHTING THE VIET CONG	5.36		4.68		.05
15.	A NEGRO	5.78	50	5.27	55	$<.05$
	A NEGRO DEMONSTRATING FOR CIVIL RIGHTS	4.18		4.52		NS
	DEMONSTRATING FOR CIVIL RIGHTS	4.01		3.91		NS
16.	A NEGRO	5.78	50	5.30	55	$<.05$
	A NEGRO PUNISHING A CHILD	5.70		5.42		NS
	PUNISHING A CHILD	5.97		5.68		NS
17.	A NEGRO	5.78	50	4.98	52	$<.05$
	A NEGRO ATTENDING A FUNERAL	5.69		5.41		NS
	ATTENDING A FUNERAL	5.40		5.14		NS

Table 3 (Cont.)

Assertion and Component		Mean Evaluation Score Sk Cv Mean	N	Sv Ck Mean	N	P
18.	A NEGRO	5.78	50	4.94	48	<.05
	A NEGRO USING A HABIT FORMING DRUG	1.32		1.56		NS
	USING A HABIT FORMING DRUG	1.37		1.35		NS
19.	A COMMUNIST	2.67	49	2.52	55	NS
	A COMMUNIST PROMOTING BIRTH CONTROL	4.32		4.09		NS
	PROMOTING BIRTH CONTROL	4.59		4.58		NS
20.	A COMMUNIST	2.67	49	2.95	56	NS
	A COMMUNIST FIGHTING THE VIET CONG	4.17		3.80		NS
	FIGHTING THE VIET CONG	4.82		4.68		NS
21.	A COMMUNIST	2.67	49	2.71	55	NS
	A COMMUNIST DEMONSTRATING FOR CIVIL RIGHTS	3.67		2.93		<.05
	DEMONSTRATING FOR CIVIL RIGHTS	3.77		3.91		NS
22.	A COMMUNIST	2.67	49	2.85	55	NS
	A COMMUNIST PUNISHING A CHILD	4.77		4.92		NS
	PUNISHING A CHILD	5.59		5.68		NS
23.	A COMMUNIST	2.67	49	2.34	52	NS
	A COMMUNIST ATTENDING A FUNERAL	4.57		4.38		NS
	ATTENDING A FUNERAL	5.31		5.14		NS

Table 3 (Cont.)

Assertion and Component		Mean Evaluation Score Sk Cv Mean	Sk Cv N	Sv Ck Mean	Sv Ck N	P
24.	A COMMUNIST	2.67	49	2.29	48	NS
	A COMMUNIST USING A HABIT FORMING DRUG	2.43		1.97		NS
	USING A HABIT FORMING DRUG	1.62		1.35		NS
25.	A PROTESTANT	5.33	47	5.64	55	NS
	A PROTESTANT FIGHTING THE VIET CONG	3.75		4.24		NS
	FIGHTING THE VIET CONG	4.19		4.58		NS
26.	A PROTESTANT	5.33	47	5.50	56	NS
	A PROTESTANT PROMOTING BIRTH CONTROL	5.41		5.15		NS
	PROMOTING BIRTH CONTROL	5.29		4.68		NS
27.	A PROTESTANT	5.33	47	5.63	55	NS
	A PROTESTANT DEMONSTRATING FOR CIVIL RIGHTS	3.67		4.19		NS
	DEMONSTRATING FOR CIVIL RIGHTS	3.59		3.91		NS
28.	A PROTESTANT	5.33	47	5.57	55	NS
	A PROTESTANT PUNISHING A CHILD	5.36		5.57		NS
	PUNISHING A CHILD	5.85		5.68		NS
29.	A PROTESTANT	5.33	47	5.60	52	NS
	A PROTESTANT ATTENDING A FUNERAL	5.28		5.28		NS
	ATTENDING A FUNERAL	5.43		5.14		NS

Table 3 (Cont.)

Assertion and Component		Mean Evaluation Score Sk Cv Mean	Sk Cv N	Sv Ck Mean	Sv Ck N	P
30.	A PROTESTANT	5.33	47	5.88	48	NS
	A PROTESTANT USING A HABIT FORMING DRUG	1.71		1.64		NS
	USING A HABIT FORMING DRUG	1.44		1.35		NS
31.	A CATHOLIC	5.26	54	5.61	55	NS
	A CATHOLIC PROMOTING BIRTH CONTROL	4.06		3.96		NS
	PROMOTING BIRTH CONTROL	4.30		4.58		NS
32.	A CATHOLIC	5.26	54	5.50	56	NS
	A CATHOLIC FIGHTING THE VIET CONG	5.54		5.32		NS
	FIGHTING THE VIET CONG	5.09		4.68		NS
33.	A CATHOLIC	5.26	54	5.70	55	NS
	A CATHOLIC DEMONSTRATING FOR CIVIL RIGHTS	3.91		4.16		NS
	DEMONSTRATING FOR CIVIL RIGHTS	3.59		3.91		NS
34.	A CATHOLIC	5.26	54	5.53	55	NS
	A CATHOLIC PUNISHING A CHILD	5.79		5.42		NS
	PUNISHING A CHILD	5.88		5.68		NS
35.	A CATHOLIC	5.26	54	5.42	53	NS
	A CATHOLIC ATTENDING A FUNERAL	5.47		5.37		NS
	ATTENDING A FUNERAL	5.22		5.14		NS

Table 3 (Cont.)

Assertion and Component		Mean Evaluation Score Sk Cv		Sv Ck		
		Mean	N	Mean	N	P
36.	A CATHOLIC	5.26	54	5.47	48	NS
	A CATHOLIC USING A HABIT FORMING DRUG	1.80		1.71		NS
	USING A HABIT FORMING DRUG	1.40		1.35		NS

As Table 3 indicates, 13 of the 108 group mean comparisons yielded significant differences. Overall, only two of the 36 combined CS configurations differed significantly. In just one instance did the mean evaluation scores on the characterization (C) component differ significantly, but scores assigned to the subject (S) components varied significantly in 10 of the 36 comparisons tested.

The subjects, A WHITE PERSON, and A NEGRO, accounted for all 10 of the significant differences obtained across all subjects tested, while the characterization, FIGHTING THE VIET CONG, accounted for the only significant difference obtained between characterizations tested. The subjects, A NEGRO, and A COMMUNIST, were common to the two assertions (CS) found to differ significantly between the test groups.

It is not clear why the two test groups varied so greatly on the subjects, A WHITE PERSON, and A NEGRO, while demonstrating a high degree of equivalency for the other subjects and characterizations. On the whole, however, the two independently drawn test groups rated most of the subjects (S), characterizations (C), and configurations (CS) quite similarly. This fact adds considerable strength to the results reported for Hypotheses 1, 2, and 3.

Test of the Hypotheses

Objective 1

The first objective of this study was to test empirically the relative accuracy of the congruity and belief congruence models as predictors of cognitive interaction resulting from word combinations of a specific type not generally tested before. The results of this empirical test should either support or refute the general superiority of the belief congruence model over the congruity model reported by Rokeach and Rothman (12).

Hypothesis 1:

When assertions that express a situation or activity are tested under identical conditions, the belief congruence model will manifest significantly less mean error of prediction per word combination than will the congruity model.

The basic data comparing the two models are contained in Tables 4a through 4f and Tables 5a through 5f. Tables 4a through 4f contain data relevant to the situation in which the characterization (C) was varied and the subject (S) was held constant, while Tables 5a-f contain data relative to the situation in which the subject (S) was varied and the characterization (C) was held constant in each of the 36 different word combinations or assertions employed in the study. In all tables, the data consist of a comparison of the predicted scores for each model with the obtained scores resulting from the actual evaluative meaning scores assigned

Table 4a. Mean Error of Prediction and Significance Tests of Difference Between Mean Obtained Evaluation Scores for Combined Concept and Mean Predicted by the Congruity Model and the Belief Congruence Model When Subject (S) is Constant and Characterization (C) is Varied

N=35

Assertion			M	SD	Mean Error	t
MY FATHER	Predicted:	congruity	6.02	.90	2.22	10.93*
PROMOTING BIRTH CONTROL	Obtained		3.81	1.91	1.09	6.04*
	Predicted:	belief congruence	4.90	1.87		
MY FATHER	Predicted:	congruity	6.22	.86	1.37	6.20*
FIGHTING THE VIET CONG	Obtained		4.85	1.73	.70	3.21*
	Predicted:	belief congruence	5.55	1.41		
MY FATHER	Predicted:	congruity	5.84	1.16	2.23	10.29*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		3.61	1.91	1.07	5.46*
	Predicted:	belief congruence	4.68	1.70		
MY FATHER	Predicted:	congruity	6.31	.76	.82	5.08*
PUNISHING A CHILD	Obtained		5.49	1.23	.42	2.31*
	Predicted:	belief congruence	5.91	1.39		
MY FATHER	Predicted:	congruity	6.36	.77	.93	5.41*
ATTENDING A FUNERAL	Obtained		5.43	1.35	.19	1.14
	Predicted:	belief congruence	5.62	1.42		
MY FATHER	Predicted:	congruity	4.00	.98	2.57	15.48*
USING A HABIT FORMING DRUG	Obtained		1.43	.96	.74	2.88*
	Predicted:	belief congruence	2.17	1.69		

*=significant at $< .05$

Table 4b N=43

Assertion			M	SD	Mean Error	t
A WHITE PERSON	Predicted:	congruity	5.20	1.37	.38	2.57*
PROMOTING BIRTH CONTROL	Obtained		4.82	1.72	.28	2.15*
	Predicted:	belief congruence	5.10	1.42		
A WHITE PERSON	Predicted:	congruity	5.12	1.41	.25	1.59
FIGHTING THE VIET CONG	Obtained		5.37	1.74	.25	1.49
	Predicted:	belief congruence	5.12	1.57		
A WHITE PERSON	Predicted:	congruity	4.54	1.69	.04	.24
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		4.50	1.95	.32	1.62
	Predicted:	belief congruence	4.18	1.67		
A WHITE PERSON	Predicted:	congruity	5.64	.78	.30	1.83
PUNISHING A CHILD	Obtained		5.34	1.36	.23	1.62
	Predicted:	belief congruence	5.57	.91		
A WHITE PERSON	Predicted:	congruity	5.22	1.14	.03	.21
ATTENDING A FUNERAL	Obtained		5.19	1.35	.16	1.62
	Predicted:	belief congruence	5.03	1.34		
A WHITE PERSON	Predicted:	congruity	2.27	1.35	.62	3.41*
USING A HABIT FORMING DRUG	Obtained		1.65	1.15	.11	.56
	Predicted:	belief congruence	1.76	1.39		

*=significant at $<.05$

Table 4c. N=50

Assertion			M	SD	Mean Error	t
A NEGRO	Predicted:	congruity	5.82	.97	.71	3.77*
PROMOTING BIRTH CONTROL	Obtained		5.11	1.53	.02	.08
	Predicted:	belief congruence	5.09	1.73		
A NEGRO	Predicted:	congruity	5.85	1.17	.24	1.36
FIGHTING THE VIET CONG	Obtained		6.09	1.25	.57	3.35*
	Predicted:	belief congruence	5.52	1.39		
A NEGRO	Predicted:	congruity	5.14	1.65	.95	4.75*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		4.19	1.88	.16	.83
	Predicted:	belief congruence	4.35	1.70		
A NEGRO	Predicted:	congruity	6.21	.65	.50	3.59*
PUNISHING A CHILD	Obtained		5.71	1.20	.25	2.29*
	Predicted:	belief congruence	5.96	.85		
A NEGRO	Predicted:	congruity	5.88	1.00	.19	1.45
ATTENDING A FUNERAL	Obtained		5.69	1.01	.26	2.39*
	Predicted:	belief congruence	5.43	1.19		
A NEGRO	Predicted:	congruity	3.13	1.41	1.81	9.14*
USING A HABIT FORMING DRUG	Obtained		1.32	.77	.20	1.53
	Predicted:	belief congruence	1.52	.94		

*=significant at $< .05$

Table 4d. N=49

Assertion			M	SD	Mean Error	t
A COMMUNIST	Predicted:	congruity	3.58	1.91	.75	3.24*
PROMOTING BIRTH CONTROL	Obtained		4.33	2.17	.04	1.19
	Predicted:	belief congruence	4.37	1.94		
A COMMUNIST	Predicted:	congruity	3.68	1.79	.49	1.53
FIGHTING THE VIET CONG	Obtained		4.17	1.96	.01	.03
	Predicted:	belief congruence	4.16	1.65		
A COMMUNIST	Predicted:	congruity	2.89	1.42	.76	2.87*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		3.65	1.82	.21	.75
	Predicted:	belief congruence	3.44	1.54		
A COMMUNIST	Predicted:	congruity	4.26	1.40	.54	2.39*
PUNISHING A CHILD	Obtained		4.78	1.70	.32	1.89
	Predicted:	belief congruence	5.10	1.50		
A COMMUNIST	Predicted:	congruity	3.93	1.38	.65	2.67*
ATTENDING A FUNERAL	Obtained		4.58	1.55	.14	.67
	Predicted:	belief congruence	4.72	1.36		
A COMMUNIST	Predicted:	congruity	1.63	.86	.80	3.32*
USING A HABIT FORMING DRUG	Obtained		2.43	1.60	.73	3.21*
	Predicted:	belief congruence	1.70	1.07		

*=significant at $<.05$

Table 4è. N=47

Assertion			M	SD	Mean Error	t
A PROTESTANT	Predicted:	congruity	4.75	1.91	1.00	4.38*
PROMOTING BIRTH CONTROL	Obtained		3.75	1.72	.55	2.99*
	Predicted:	belief congruence	4.30	1.89		
A PROTESTANT	Predicted:	congruity	5.73	1.10	.32	1.44
FIGHTING THE VIET CONG	Obtained		5.41	1.46	.13	.57
	Predicted:	belief congruence	5.28	1.53		
A PROTESTANT	Predicted:	congruity	4.71	1.62	.38	4.37*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		4.33	1.58	.67	.05
	Predicted:	belief congruence	3.66	1.61		
A PROTESTANT	Predicted:	congruity	5.88	1.13	.51	2.88*
PUNISHING A CHILD	Obtained		5.37	1.42	.47	2.87*
	Predicted:	belief congruence	5.84	.99		
A PROTESTANT	Predicted:	congruity	5.72	1.33	.44	2.05*
ATTENDING A FUNERAL	Obtained		5.28	1.37	.14	.70
	Predicted:	belief congruence	5.42	1.16		
A PROTESTANT	Predicted:	congruity	2.88	1.53	1.18	4.49*
USING A HABIT FORMING DRUG	Obtained		1.70	1.34	.00	.01
	Predicted:	belief congruence	1.70	1.17		

*=significant at $<.05$

Table 4f. N-54

Assertion			M	SD	Mean Error	t
A CATHOLIC	Predicted:	congruity	5.16	1.72	1.10	4.88*
PROMOTING BIRTH CONTROL	Obtained		4.06	1.88	.34	1.56
	Predicted:	belief congruence	4.40	1.87		
A CATHOLIC	Predicted:	congruity	5.51	1.58	.03	.16
FIGHTING THE VIET CONG	Obtained		5.54	1.66	.37	1.94
	Predicted:	belief congruence	5.17	1.73		
A CATHOLIC	Predicted:	congruity	4.39	1.94	.48	2.22*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		3.91	1.84	.04	.23
	Predicted:	belief congruence	3.95	1.89		
A CATHOLIC	Predicted:	congruity	6.00	.96	.20	1.93
PUNISHING A CHILD	Obtained		5.80	1.07	.03	.31
	Predicted:	belief congruence	5.83	1.12		
A CATHOLIC	Predicted:	congruity	5.59	1.21	.11	.98
ATTENDING A FUNERAL	Obtained		5.48	1.19	.19	1.58
	Predicted:	belief congruence	5.29	1.19		
A CATHOLIC	Predicted:	congruity	2.74	1.48	.95	4.04*
USING A HABIT FORMING DRUG	Obtained		1.79	1.23	.07	.40
	Predicted:	belief congruence	1.72	1.17		

*=significant at $<.05$

Table 5a. Mean Error of Prediction and Significance Tests of Difference Between Obtained Evaluation Scores for Combined Concept and Mean Predicted by the Congruity Model and the Belief Congruence Model When Subject (S) is Varied and Characterization (C) is Constant

N=55

Assertion			M	SD	Mean Error	t
MY FATHER	Predicted:	congruity	5.93	1.06	2.12	9.86*
PROMOTING BIRTH CONTROL	Obtained		3.81	1.86	1.23	5.18*
	Predicted:	belief congruence	5.04	1.81		
A WHITE PERSON	Predicted:	congruity	4.96	1.44	.38	2.25*
PROMOTING BIRTH CONTROL	Obtained		4.58	1.57	.06	.50
	Predicted:	belief congruence	4.64	1.54		
A NEGRO	Predicted:	congruity	5.05	1.46	.49	2.26*
PROMOTING BIRTH CONTROL	Obtained		4.56	1.63	.04	.25
	Predicted:	belief congruence	4.60	1.60		
A COMMUNIST	Predicted:	congruity	3.41	1.62	.68	3.04*
PROMOTING BIRTH CONTROL	Obtained		4.09	1.74	.41	1.9
	Predicted:	belief congruence	3.68	1.62		
A PROTESTANT	Predicted:	congruity	5.46	1.31	1.22	4.81*
PROMOTING BIRTH CONTROL	Obtained		4.24	1.83	.52	2.46*
	Predicted:	belief congruence	4.76	1.64		
A CATHOLIC	Predicted:	congruity	5.37	1.34	1.41	5.48*
PROMOTING BIRTH CONTROL	Obtained		3.96	2.03	.85	3.45*
	Predicted:	belief congruence	4.81	1.53		

*=significant at $<.05$

Table 5b. N=56

Assertion			M	SD	Mean Error	t
MY FATHER	Predicted:	congruity	5.93	1.15	1.54	5.91*
FIGHTING THE VIET CONG	Obtained		4.39	1.81	.91	3.03*
	Predicted:	belief congruence	5.30	2.04		
A WHITE PERSON	Predicted:	congruity	5.22	1.58	.07	.32
FIGHTING THE VIET CONG	Obtained		5.29	1.56	.46	1.88
	Predicted:	belief congruence	4.83	1.82		
A NEGRO	Predicted:	congruity	4.91	1.77	.61	2.58*
FIGHTING THE VIET CONG	Obtained		5.52	1.48	.83	3.62*
	Predicted:	belief congruence	4.69	1.86		
A COMMUNIST	Predicted:	congruity	3.84	1.74	.04	.13
FIGHTING THE VIET CONG	Obtained		3.80	1.92	.28	.89
	Predicted:	belief congruence	4.08	1.92		
A PROTESTANT	Predicted:	congruity	5.35	1.63	.25	.86
FIGHTING THE VIET CONG	Obtained		5.15	1.49	.29	1.23
	Predicted:	belief congruence	4.86	1.78		
A CATHOLIC	Predicted:	congruity	5.22	1.62	.11	.46
FIGHTING THE VIET CONG	Obtained		5.33	1.52	.57	2.23*
	Predicted:	belief congruence	4.76	1.80		

*=significant at $< .05$

Table 5c. N=55

Assertion			M	SD	Mean Error	t
MY FATHER	Predicted:	congruity	5.88	1.20	2.05	10.00*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		3.83	1.75	1.28	4.85*
	Predicted:	belief congruence	5.11	1.72		
A WHITE PERSON	Predicted:	congruity	5.04	1.49	.69	3.21*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		4.35	1.66	.05	.26
	Predicted:	belief congruence	4.40	1.53		
A NEGRO	Predicted:	congruity	4.82	1.61	.29	1.39
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		4.53	1.58	.22	1.22
	Predicted:	belief congruence	4.31	1.66		
A COMMUNIST	Predicted:	congruity	3.17	1.79	.24	.97
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		2.93	1.65	.45	2.04*
	Predicted:	belief congruence	3.38	1.59		
A PROTESTANT	Predicted:	congruity	5.02	1.56	.83	3.89*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		4.19	1.64	.22	1.02
	Predicted:	belief congruence	4.41	1.69		
A CATHOLIC	Predicted:	congruity	5.03	1.53	.87	4.47*
DEMONSTRATING FOR CIVIL RIGHTS	Obtained		4.16	1.61	.16	1.64
	Predicted:	belief congruence	4.32	1.44		

*=significant at $<.05$

Table 5d. N=55

Assertion			M	SD	Mean Error	t
MY FATHER	Predicted:	congruity	6.34	.72	.58	3.81*
PUNISHING A CHILD	Obtained		5.76	1.21	.32	2.60*
	Predicted:	belief congruence	6.08	.87		
A WHITE PERSON	Predicted:	congruity	5.95	.85	.36	2.49*
PUNISHING A CHILD	Obtained		5.59	1.18	.16	1.36
	Predicted:	belief congruence	5.75	1.04		
A NEGRO	Predicted:	congruity	5.92	.85	.49	2.67*
PUNISHING A CHILD	Obtained		5.43	1.31	.28	1.87
	Predicted:	belief congruence	5.71	1.05		
A COMMUNIST	Predicted:	congruity	4.40	1.61	.53	2.47*
PUNISHING A CHILD	Obtained		4.93	1.68	.15	1.15
	Predicted:	belief congruence	5.08	1.56		
A PROTESTANT	Predicted:	congruity	5.97	.89	.39	3.05*
PUNISHING A CHILD	Obtained		5.58	1.24	.22	1.96
	Predicted:	belief congruence	5.80	1.04		
A CATHOLIC	Predicted:	congruity	6.01	.81	.58	3.71*
PUNISHING A CHILD	Obtained		5.43	1.35	.35	2.64*
	Predicted:	belief congruence	5.78	1.02		

*=significant at $<.05$

Table 5e. N=52

Assertion			M	SD	Mean Error	t
MY FATHER	Predicted:	congruity	6.36	.69	.76	4.69*
ATTENDING A FUNERAL	Obtained		5.60	1.27	.03	.19
	Predicted:	belief congruence	5.57	1.19		
A WHITE PERSON	Predicted:	congruity	5.68	1.04	.44	2.40*
ATTENDING A FUNERAL	Obtained		5.24	1.33	.10	.58
	Predicted:	belief congruence	5.34	1.21		
A NEGRO	Predicted:	congruity	5.44	1.07	.02	.12
ATTENDING A FUNERAL	Obtained		5.42	1.33	.23	1.40
	Predicted:	belief congruence	5.19	1.10		
A COMMUNIST	Predicted:	congruity	3.51	1.43	.87	3.92*
ATTENDING A FUNERAL	Obtained		4.38	1.60	.03	.09
	Predicted:	belief congruence	4.41	1.77		
A PROTESTANT	Predicted:	congruity	5.85	.95	.56	3.26*
ATTENDING A FUNERAL	Obtained		5.29	1.34	.01	.07
	Predicted:	belief congruence	5.30	1.16		
A CATHOLIC	Predicted:	congruity	5.80	.87	.42	2.38*
ATTENDING A FUNERAL	Obtained		5.38	1.47	.08	.48
	Predicted:	belief congruence	5.30	1.20		

*=significant at $< .05$

Table 5f. N=48

Assertion			M	SD	Mean Error	t
MY FATHER	Predicted:	congruity	3.82	.92	2.43	15.58*
USING A HABIT FORMING DRUG	Obtained		1.39	.88	.87	3.04*
	Predicted:	belief congruence	2.26	1.94		
A WHITE PERSON	Predicted:	congruity	2.62	1.34	1.02	4.69*
USING A HABIT FORMING DRUG	Obtained		1.60	1.13	.04	.23
	Predicted:	belief congruence	1.64	1.04		
A NEGRO	Predicted:	congruity	2.49	1.32	.93	4.88*
USING A HABIT FORMING DRUG	Obtained		1.56	1.03	.15	.92
	Predicted:	belief congruence	1.71	1.18		
A COMMUNIST	Predicted:	congruity	1.53	.79	.44	1.79
USING A HABIT FORMING DRUG	Obtained		1.97	1.75	.55	2.46*
	Predicted:	belief congruence	1.42	.84		
A PROTESTANT	Predicted:	congruity	3.21	1.27	1.57	8.64*
USING A HABIT FORMING DRUG	Obtained		1.64	1.18	.00	.04
	Predicted:	belief congruence	1.64	1.15		
A CATHOLIC	Predicted:	congruity	2.95	1.22	1.24	5.98*
USING A HABIT FORMING DRUG	Obtained		1.71	1.32	.08	.65
	Predicted:	belief congruence	1.63	.97		

*=significant at $< .05$

by the respondents to each of the 36 assertions. In both instances, the t test for correlated measures (4) was used to determine if the mean difference between predicted and obtained scores was greater than zero for both models. The resulting t value and its significance is indicated for each of the 36 different assertions resulting from the two test situations.

Table 6 presents a composite of the data contained in Tables 4a-f and 5a-f without regard to the individual assertions. These results are relevant to the testing of Hypothesis 1. The data provide support for the hypothesis that the belief congruence model manifests significantly less total error of prediction, thus, less error per assertion. Table 6 indicates that the congruity model predictions resulted in over two times as much error as did predictions based on the belief congruence model. The congruity model error totaled 54.37 scale units compared with 23.95 scale units for the belief congruence model. When averaged across the 72 assertions, the average error of prediction is .75 scale units and .33 scale units for the congruity and belief congruence models respectively. The average error of prediction for the belief congruence model parallels very closely that reported by Rokeach and Rothman (12). These researchers reported an average error per assertion of .34 for the belief congruence model and 1.07 for the congruity model. Thus, average error of prediction for the belief congruence model

Table 6. The Total Absolute Error of Prediction, the Average Absolute Error of Prediction per Assertion, and the Percent and Number of Assertions Predicted Accurately by the Congruity and Belief Congruence Models across all Test Groups and Assertions

Test Group Number	Number of Subjects	Total Absolute Error of Prediction		Average Absolute Error per Assertion		Assertions Predicted Accurately[1]				
		Congruity	Belief Congr.	Congruity	Belief Congr.	Congruity No.	Congruity %	Belief No.	Belief Congruence %	Number of Assertions[1]
1	55	10.14	4.21	1.69	.70	0	0.0	1	16.6	6
2	43	1.62	1.35	.27	.22	4	66.6	5	80.3	6
3	50	4.40	1.46	.73	.24	2	33.2	3	49.8	6
4	49	3.99	1.45	.66	.25	1	16.6	5	80.3	6
5	47	3.83	1.96	.64	.33	1	16.6	4	66.4	6
6	54	2.87	1.04	.48	.17	3	49.8	6	100.0	6
7	55	6.30	3.11	1.05	.52	0	0.0	3	49.8	6
8	56	2.62	3.34	.44	.56	4	66.4	3	49.8	6
9	55	4.97	2.38	.83	.40	2	33.2	4	66.4	6
10	55	2.93	1.48	.49	.25	0	0.0	4	66.4	6
11	52	3.07	.48	.51	.08	1	16.6	6	100.0	6
12	48	7.63	1.69	1.27	.28	1	16.6	4	66.4	6
Total	619	54.37	23.95	.75	.33	19	26.3	48	66.02	72

[1]The criterion for accuracy of prediction is based on results obtained when the t-test for correlated measures is applied to the mean difference between the mean evaluation score predicted and the mean evaluation score as contained in Tables 3 and 4. When the mean difference is determined to be "0" difference by the t-test, it is assumed that the model predicted the interaction effect accurately. Each test group rated 6 assertions, with the same assertions being rated by test groups 7 through 12 as were rated by test groups 1 through 6, but in a different order.

varied only .01 scale units in the two studies, while average error for the congruity model varied .32 scale units. On the other hand, when compared with the Rokeach and Rothman findings, the congruity model showed a 40 percent decrease in average error of prediction in the present study. Although the reduction of .32 scale units per assertion is substantial, it evidently had little or no effect on the overall ability of the congruity model to predict cognitive interaction accurately, as is shown under Hypothesis 2.

The design of the study made it possible to test whether varying or holding constant either subject (S) or characterization (C) in regard to the total CS configuration affected the average error of prediction per assertion for both models. Evidently, differences in the variable and constant elements of the CS configuration do not affect the dynamics of either model. As Table 7 shows, the average error of prediction per assertion between the two test situations were not significantly different. The congruity model showed a .74 and .76 average error of prediction per assertion, while the belief congruence model showed a .32 and .34 error per assertion.

Thus, the present data clearly support the results reported by Rokeach and Rothman (12) illustrating significant superiority of the belief congruence model over the congruity model as predictors of cognitive interaction. Moreover, the data clearly support Hypothesis 1: that the belief congruence

model will manifest significantly less average error of prediction per assertion than will the congruity model when tested under comparable situations.

Hypothesis 2:

When assertions that express a situation or activity are tested under identical conditions, the belief congruence model will predict accurately a significantly greater number of word combinations than will the congruity model.

Table 6 indicates that for the 72 different tests of the two models the relative superiority of the belief congruence model is readily apparent. Each of the 12 test groups responded to six assertions and their appropriate subject (S) and characterization (C) components. Thus, it was possible to obtain six independent tests of both models in each test group. If the mean difference between the predicted and obtained model scores as listed in Tables 4a-f and 5a-f did not differ at $<.05$, it was assumed that the model predicted the cognitive interaction accurately. Hypothesis 2 is designed to test directly the relative efficacy of the two models based on accuracy of prediction across assertions.

The results summarized in Table 6 support Hypothesis 2. Of the 72 independent tests, the belief congruence model accurately predicted 48, or 66.02 percent of the assertions, while the congruity model accurately predicted only 19, or 26.3 percent. This relative predictive superiority of the belief congruence model is not significantly altered when the structure of the assertion is taken into consideration.

Table 7 shows that the belief congruence model predicted equally well for both types of configurations; i.e., 24 of the 36 predictions were correct when the subject (S) was varied and the characterization (C) was held constant and 24 of the 36 predictions were correct when the characterization (C) was varied and the subject (S) was held constant.

When compared with the Rokeach-Rothman (12) results, the percentage of accurate predictions by the two models is similar. Rokeach and Rothman found that the belief congruence model predicted accurately 75 percent of the assertions they tested while the congruity model predicted accurately only 25 percent of assertions tested. Their findings compare almost exactly to the congruity model results reported above and differ only slightly from the 66.02 percent accurate predictions of the belief congruence model obtained in this study.

Objective 2

The second objective of this investigation was to test the relative reliability of the congruity and belief congruence models as predictors of cognitive interaction resulting from word combinations when the same combinations are tested across equivalent groups of subjects. Obviously, the ability of a model to accurately predict across different groups is a significant test of reliability.

Table 7. Total Mean Error of Prediction, the Mean Error of Prediction Per Assertion, and the Number and Percent of Assertions Predicted Accurately by the Congruity and Belief Congruence Models When the Subject (S) and the Characterization (C) are either Held Constant or Varied in the Combined CS Configuration

	Nature of Test Situation Relative to Assertion Tested							
	S held constant, C varied in combined CS configuration				S varied, C held constant in combined CS configuration			
	Total Mean Error of Pred.	Mean Error Per Asser-tion	Number of Assertions Predicted Accurately		Total Mean Error of Pred.	Mean Error Per Asser-tion	Number of Assertions Predicted Accurately	
Model			No.	%			No.	%
Congruity	26.85	.74	11	30.5	27.52	.76	9	25.0
Belief Congruence	11.47	.32	24	66.6	12.48	.35	24	66.6

Hypothesis 3:

When assertions that express a situation or activity are tested under identical conditions, the belief congruence principle will manifest significantly greater reliability of prediction when compared to the congruity principle.

To test Hypothesis 3, it was necessary to assume that test groups in which the assertion subject (S) was held constant and the characterization (C) was varied were equivalent to the test groups in which the subject (S) was varied and the characterization (C) was held constant. Since it has been pointed out that this change in the assertion structure had little or no effect on the relative ability of the two models to predict cognitive interaction accurately, or on the average error per assertion, it seemed reasonable to make the equivalence assumption.

As Tables 4a-f and 5a-f indicate, only five (26.3% of the 19 accurate predictions were common to both test groups for the congruity model, while 40 (83.3%) of the 48 accurately predicted assertions were common to both test groups for the belief congruence model. In other words, only five of the 11 assertions predicted accurately by the congruity model in the test groups where the assertion subject (S) was held constant and the characterization (C) varied were again predicted accurately when the reverse was true. However, in the case of the belief congruence model, 20 of the 24 assertions predicted accurately in the first test situation were again predicted accurately in the second test situation. This result

supports the position that the belief congruence model is significantly more reliable in predicting across equivalent test groups, a finding consistent with Hypothesis 3.

The Relationship of the Assertion (CS) Components to the Ability of the Congruity and Belief Congruence Models to Predict Cognitive Interaction Accurately

As reported above, the congruity model predicted accurately only 19 of the 72 word combinations tested, while the belief congruence model predicted 48 of the 72 word combinations correctly. The present discussion examines how the component parts of the CS configurations are related to the models' failure to predict cognitive interaction. Obviously, the congruity model failed to predict correctly on 53 occasions, while the belief congruence model failed only 24 times. Table 10 contains a summary of how these failures to predict are related to the subject (S) and characterization (C) components of the assertions tested.

Examination of Table 10 reveals that the nature of the components of the assertions appears to be related to the ability of the models to predict accurately the cognitive interaction outcome. For example, in the assertion where the subject (S) is MY FATHER, neither model was very successful in predicting cognitive interaction. The congruity model failed 100 percent of the time, and the belief congruence model 83 percent. On the other hand, in the assertions where the subject (S) component is A PROTESTANT, the belief congruence model failed

25 percent of the time, but the congruity model showed an 83 percent failure.

The data show that the 12 assertions in which MY FATHER serves as the subject (S) contributed nearly twice as much to the total predictive failures of the belief congruence model (42%) as they did to the failures of the congruity model (22%). This difference is further illustrated by the fact that the percentage contribution to total predictive errors by the subject (S) component ranges from four percent, (A WHITE PERSON) to 42 percent, (MY FATHER) in the case of the belief congruence model, but from only 13 percent, (A WHITE PERSON), to 22 percent, (MY FATHER) in the case of the congruity model. It is interesting to note that the same subject (S) components contributed both the largest and smallest percentages to the overall number of predictive failures in both models.

When individual characterizations are considered, it is evident that PROMOTING BIRTH CONTROL was the most difficult characterization for both models to predict accurately. The congruity model failed on all 12 assertions (100% failure) in which this characterization appeared, while the belief congruence predicted only six (50% failure) correctly.

As further indicated in Table 8, when the characterization (C) components were considered, the relative differences of rate of failure between the two models are not as pronounced as they were in the case of the subject (S) component. Still, in only one instance did the congruity model equal or exceed

Table 8: The Frequency and Percentage Distribution of the Failures Observed in the Application of the Congruity and Belief Congruence Models to Predict Cognitive Interaction as a Function of the Subject (S) and Characterization (C) Relative to the Combined CS Configurations

Component	Number and Percent of Times Models Failed to Predict Cognitive Interaction When Component on Left was Part of the CS Configuration					
	Congruity Model			Belief Congruence Model		
SUBJECT (S)	Number Failures	*Percent of Failures in 12 CS's Tested	**Percent of Failures across all CS's Tested	Number Failures	*Percent of Failures in 12 CS's Tested	**Percent of Failures across all CS's Tested
MY FATHER	12	100	22	10	83	42
A WHITE PERSON	7	58	13	1	8	4
A NEGRO	8	67	15	4	33	16
A COMMUNIST	8	67	15	3	25	13
A PROTESTANT	10	83	20	3	25	13
A CATHOLIC	8	67	15	3	25	12
Total	53	XX	100	24	XX	100
CHARACTERIZATION (C)						
PROMOTING BIRTH CONTROL	12	100	22	6	50	25
FIGHTING THE VIET CONG	3	25	6	5	41	21
DEMONSTRATING FOR CIVIL RIGHTS	9	75	17	3	25	13
PUNISHING A CHILD	10	83	19	5	42	21
ATTENDING A FUNERAL	8	67	15	1	8	4
USING A HABIT FORMING DRUG	11	92	21	4	33	16
Total	53	XX	100	24	XX	100

*This column denotes the percent of times the model failed to predict in 12 different tests on the same component.

**This column denotes the percent of times a specific component (S or C) was associated with a prediction failure in terms of the total number of failures observed.

The ability of the belief congruence model to predict cognitive interaction. This was in the instance when FIGHTING THE VIET CONG served as the characterization in the assertions. In this case, the characterization contributed only six percent to the total failures manifested by the congruity model, while it contributed 21 percent of the failures of the belief congruence model. Unlike the subject (S) components, the overall range in percentage of failures contributed by the characterizations is nearly the same for both models: six percent to 22 percent for the congruity model and four percent to 25 percent for the belief congruence model.

The Belief Congruence Model and Overassimilation

Rokeach and Rothman (12, p. 130) refer to a process whereby a stimulus not only takes on the valence of another stimulus with which it is associated, but in addition, takes on an even stronger valence. This process is sometimes referred to as overassimilation. Although the belief congruence model is designed to account for this possibility, there are evidently certain cases where the present formulation does not function adequately.

The data in Table 9 clearly show that after the CS comparisons are carried out under the belief congruence principle the respondent may overassimilate towards either the subject (S) or the characterization (C) component. Based on the relative influence of the C component, it appears that overassimilation is most often in the direction of the evaluation score

Table 9. The Percent of Respondents Who Indicated a Stronger Feeling Towards the Characterized Subject (CS) than They Felt Towards Other People Characterized in the Same Way (Overassimilation)

Subject Component	Characterization Component					
	PROMOTING BIRTH CONTROL	FIGHTING THE VIET CONG	DEMONSTRATING FOR CIVIL RIGHTS	PUNISHING A CHILD	ATTENDING A FUNERAL	USING A HABIT FORMING DRUG
	Percent*					
MY FATHER	20	31	15	21	19	39
A WHITE PERSON	6	9	9	1	5	11
A NEGRO	10	5	12	2	2	5
A COMMUNIST	8	14	11	8	8	9
A PROTESTANT	6	9	6	2	4	12
A CATHOLIC	7	6	8	3	4	5

*Percentages were obtained by dividing the total number of respondents rating each assertion by the number of respondents who overassimilated towards the C when making the C vs CS comparison on the Relative Importance Form. For example, of the 110 respondents rating the assertion, MY FATHER PROMOTING BIRTH CONTROL, 22 or 20 percent indicated that they felt more strongly towards their father promoting birth control than they felt towards other people promoting birth control (overassimilation towards the C in the C vs CS comparison).

assigned to that component. This observation is supported to some extent by the relatively high correlation coefficient (r=.76) observed between the C and the combined CS configuration.[2] In other words, the evaluation score assigned to the characterization by the respondents is in itself highly related to the CS evaluation regardless of what subject (S) is associated with the characterization (C). In fact, data in Tables 10a-f and 11a-f indicate that if the C evaluation scores are compared with the CS, applying the same criterion used to determine accuracy of prediction between the two models, 43 of the 72 assertions are predicted accurately. This represents only five fewer accurate predictions than were achieved by use of the entire belief congruence procedures.

Based on a criterion of total mean error of prediction across all 72 assertions (36 tested twice), the congruity model error totaled 54.37 units and the belief congruence model 23.96 units. When the characterization evaluation scores only are used as the predictor, the total mean error of prediction is 25.62 units. Thus, for this set of data, the application of the overall belief congruence procedures reduced the total

---

[2]A Pearson Product-Moment correlation was used to determine the relationship between the C and S, the S and CS, and the C and CS. The resulting r's were: r=.04; r=.13 and 4=.76 respectively. Correlations were computed over the entire 3,679 observations without regard to assertion or group differentiation.

Table 10a. Mean Difference Between the Evaluation of the Combined Configuration and each of the Two Components When the Subject (S) is Held Constant and the Characterization (C) is Varied N-55

	M	Mean Diff.	t
MY FATHER	6.56		
		2.68	9.46*
MY FATHER PROMOTING BIRTH CONTROL	3.81		
		.75	4.69*
PROMOTING BIRTH CONTROL	4.55		
MY FATHER	6.56		
		1.71	6.51*
MY FATHER FIGHTING THE VIET CONG	4.85		
		.08	.44*
FIGHTING THE VIET CONG	4.93		
MY FATHER	6.56		
		2.94	10.62*
MY FATHER DEMONSTRATING FOR CIVIL RIGHTS	3.62		
		.47	3.36*
DEMONSTRATING FOR CIVIL RIGHTS	4.09		
MY FATHER	6.56		
		1.07	6.85*
MY FATHER PUNISHING A CHILD	5.49		
		.17	.91
PUNISHING A CHILD	5.66		
MY FATHER	6.56		
		1.13	5.24*
MY FATHER ATTENDING A FUNERAL	5.43		
		.09	.56
ATTENDING A FUNERAL	5.34		
MY FATHER	6.56		
		5.12	28.93*
MY FATHER USING A HABIT FORMING DRUG	1.44		
		.00	.00
USING A HABIT FORMING DRUG	1.44		

* =significant at $<.05$

Table 10b N=43

	M	Mean Diff.	t
A WHITE PERSON	4.84		
		.02	.08
A WHITE PERSON PROMOTING BIRTH CONTROL	4.82		
		.18	1.40
PROMOTING BIRTH CONTROL	5.00		
A WHITE PERSON	4.84		
		.53	2.23*
A WHITE PERSON FIGHTING THE VIET CONG	5.37		
		.29	1.71
FIGHTING THE VIET CONG	5.08		
A WHITE PERSON	4.84		
		.35	1.20
A WHITE PERSON DEMONSTRATING FOR CIVIL RIGHTS	4.49		
		.34	1.75
DEMONSTRATING FOR CIVIL RIGHTS	4.15		
A WHITE PERSON	4.84		
		.50	2.04*
A WHITE PERSON PUNISHING A CHILD	5.34	.19	1.59
PUNISHING A CHILD	5.53		
A WHITE PERSON	4.84		
		1.75	1.65
A WHITE PERSON ATTENDING A FUNERAL	5.19		
		.19	1.53
ATTENDING A FUNERAL	5.00		
A WHITE PERSON	4.84		
		2.18	14.65*
A WHITE PERSON USING A HABIT FORMING DRUG	1.66		
		.23	1.85
USING A HABIT FORMING DRUG	1.43		

* = significant at $<.05$

Table 10c. N=50

	M	Mean Diff.	t
A NEGRO	5.78	.67	2.41*
A NEGRO PROMOTING BIRTH CONTROL	5.10	.00	.00
PROMOTING BIRTH CONTROL	5.10		
A NEGRO	5.78	.31	1.42
A NEGRO FIGHTING THE VIET CONG	6.09	..73	2.72*
FIGHTING THE VIET CONG	5.36		
A NEGRO	5.78	1.60	6.73*
A NEGRO DEMONSTRATING FOR CIVIL RIGHTS	4.18	.17	.90
DEMONSTRATING FOR CIVIL RIGHTS	4.01		
A NEGRO	5.78	..08	.39
A NEGRO PUNISHING A CHILD	5.70	.27	2.27*
PUNISHING A CHILD	5.97		
A NEGRO	5.78	.09	.53
A NEGRO ATTENDING A FUNERAL	5.69	..29	2.55*
ATTENDING A FUNERAL	5.40		
A NEGRO	5.78	4.46	22.33*
A NEGRO USING A HABIT FORMING DRUG	1.32	.05	.45
USING A HABIT FORMING DRUG	1.37		

* = significant at $< .05$

Table 10d. N=49

	M	Mean Diff.	t
A COMMUNIST	2.67		
		1.65	5.92*
A COMMUNIST PROMOTING BIRTH CONTROL	4.32		
		.27	1.28
PROMOTING BIRTH CONTROL	4.59		
A COMMUNIST	2.67		
		1.50	4.91*
A COMMUNIST FIGHTING THE VIET CONG	4.17		
		.65	2.18*
FIGHTING THE VIET CONG	4.82		
A COMMUNIST	2.67		
		.99	3.19*
A COMMUNIST DEMONSTRATING FOR CIVIL RIGHTS	3.67		
		.11	.41
DEMONSTRATING FOR CIVIL RIGHTS	3.77		
A COMMUNIST	2.67		
		2.10	7.71*
A COMMUNIST PUNISHING A CHILD	4.77		
		.82	3.71*
PUNISHING A CHILD	5.59		
A COMMUNIST	2.67		
		1.90	7.24*
A COMMUNIST ATTENDING A FUNERAL	4.57		
		.74	2.92*
ATTENDING A FUNERAL	5.31		
A COMMUNIST	2.67		
		.24	.78
A COMMUNIST USING A HABIT FORMING DRUG	2.43		
		1.19	3.49*
USING A HABIT FORMING DRUG	1.62		

* = significant at $< .05$

Table 10e. N=47

	M	Mean Diff.	t
A PROTESTANT	5.33		
		1.58	5.53*
A PROTESTANT PROMOTING BIRTH CONTROL	3.75		
		.44	2.81*
PROMOTING BIRTH CONTROL	4.19		
A PROTESTANT	5.33		
		.08	.26
A PROTESTANT FIGHTING THE VIET CONG	5.41		
		.15	.54
FIGHTING THE VIET CONG	5.29		
A PROTESTANT	5.33		
		1.66	5.01*
A PROTESTANT DEMONSTRATING FOR CIVIL RIGHTS	3.67		
		.08	.47
DEMONSTRATING FOR CIVIL RIGHTS	3.59		
A PROTESTANT	5.33		
		.03	.16
A PROTESTANT PUNISHING A CHILD	5.36		
		.49	2.80*
PUNISHING A CHILD	5.85		
A PROTESTANT	5.33		
		.05	.21
A PROTESTANT ATTENDING A FUNERAL	5.28		
		.15	.78
ATTENDING A FUNERAL	5.43		
A PROTESTANT	5.33		
		3.62	11.92*
A PROTESTANT USING A HABIT FORMING DRUG	1.71		
		.27	1.75
USING A HABIT FORMING DRUG	1.44		

* = significant at $< .05$

Table 10f. N=54

	M	Mean Diff.	t
A CATHOLIC	5.26		
		1.20	3.53*
A CATHOLIC PROMOTING BIRTH CONTROL	4.06		
		.24	1.52
PROMOTING BIRTH CONTROL	4.30		
A CATHOLIC	5.26		
		.28	1.07
A CATHOLIC FIGHTING THE VIET CONG	5.54		
		.45	2.23*
FIGHTING THE VIET CONG	5.09		
A CATHOLIC	5.26		
		1.35	5.08*
A CATHOLIC DEMONSTRATING FOR CIVIL RIGHTS	3.91		
		.32	1.88
DEMONSTRATING FOR CIVIL RIGHTS	3.59		
A CATHOLIC	5.26		
		.53	2.45*
A CATHOLIC PUNISHING A CHILD	5.79		
		.09	.78
PUNISHING A CHILD	5.88		
A CATHOLIC	5.26		
		.21	1.23
A CATHOLIC ATTENDING A FUNERAL	5.47		
		.25	2.02
ATTENDING A FUNERAL	5.22		
A CATHOLIC	5.26		
		3.46	12.69*
A CATHOLIC USING A HABIT FORMING DRUG	1.80		
		.40	2.91*
USING A HABIT FORMING DRUG	1.40		

* = significant at $<.05$

Table 11a. Mean Difference between the Evaluation of the Combined Configuration and each of the Two Components When the Subject (S) is Varied and the Characterization (C) is Held Constant N=55

	M	Mean Diff.	t
MY FATHER	6.46	2.65	10.13*
MY FATHER PROMOTING BIRTH CONTROL	3.81	.77	3.75*
PROMOTING BIRTH CONTROL	4.58		
A WHITE PERSON	5.13	.56	2.37*
A WHITE PERSON PROMOTING BIRTH CONTROL	4.57	.01	.04
PROMOTING BIRTH CONTROL	4.58		
A NEGRO	5.16	.60	2.38*
A NEGRO PROMOTING BIRTH CONTROL	4.56	.02	.12
PROMOTING BIRTH CONTROL	4.58		
A COMMUNIST	2.52	1.47	5.68*
A COMMUNIST PROMOTING BIRTH CONTROL	4.09	.49	2.57*
PROMOTING BIRTH CONTROL	4.58		
A PROTESTANT	5.64	1.40	4.43*
A PROTESTANT PROMOTING BIRTH CONTROL	4.24	.34	1.95
PROMOTING BIRTH CONTROL	4.58		
A CATHOLIC	5.61	1.97	5.04*
A CATHOLIC PROMOTING BIRTH CONTROL	3.64	.94	2.80*
PROMOTING BIRTH CONTROL	4.58		

* = significant at $< .05$

Table 11b. N=56

	M	Mean Diff.	t
MY FATHER	6.49	2.10	6.97*
MY FATHER FIGHTING THE VIET CONG	4.39	.29	1.07
FIGHTING THE VIET CONG	4.68		
A WHITE PERSON	5.38	.10	.44
A WHITE PERSON FIGHTING THE VIET CONG	5.28	.60	2.50*
FIGHTING THE VIET CONG	4.68		
A NEGRO	5.00	.52	2.46*
A NEGRO FIGHTING THE VIET CONG	5.52	.84	3.27*
FIGHTING THE VIET CONG	4.68		
A COMMUNIST	2.95	.85	2.74*
A COMMUNIST FIGHTING THE VIET CONG	3.80	.88	3.04*
FIGHTING THE VIET CONG	4.68		
A PROTESTANT	5.50	.35	1.55
A PROTESTANT FIGHTING THE VIET CONG	5.15	.47	1.81
FIGHTING THE VIET CONG	4.68		
A CATHOLIC	5.50	.18	.97
A CATHOLIC FIGHTING THE VIET CONG	5.32	.64	2.34*
FIGHTING THE VIET CONG	4.68		

* = significant at $< .05$

Table 11c. N=55

	M	Mean Diff.	t
MY FATHER	6.69	2.85	11.95*
MY FATHER DEMONSTRATING FOR CIVIL RIGHTS	3.84	.07	.41
DEMONSTRATING FOR CIVIL RIGHTS	3.91		
A WHITE PERSON	5.58	1.23	4.34*
A WHITE PERSON DEMONSTRATING FOR CIVIL RIGHTS	4.35	.44	2.55*
DEMONSTRATING FOR CIVIL RIGHTS	3.91		
A NEGRO	5.27	.75	2.67*
A NEGRO DEMONSTRATING FOR CIVIL RIGHTS	4.52	.61	4.10*
DEMONSTRATING FOR CIVIL RIGHTS	3.91		
A COMMUNIST	2.71	.22	.98
A COMMUNIST DEMONSTRATING FOR CIVIL RIGHTS	2.93	.98	3.56*
DEMONSTRATING FOR CIVIL RIGHTS	3.91		
A PROTESTANT	5.63	1.44	5.22*
A PROTESTANT DEMONSTRATING FOR CIVIL RIGHTS	4.19	.28	.28
DEMONSTRATING FOR CIVIL RIGHTS	3.91		
A CATHOLIC	5.70	1.54	6.20*
A CATHOLIC DEMONSTRATING FOR CIVIL RIGHTS	4.16	.25	1.53
DEMONSTRATING FOR CIVIL RIGHTS	3.91		

* = significant at $< .05$

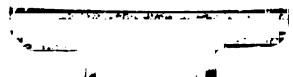


Table 11d. N=55

	M	Mean Diff.	t
MY FATHER	6.51	.76	4.14*
MY FATHER PUNISHING A CHILD	5.75	.07	.66
PUNISHING A CHILD	5.68		
A WHITE PERSON	5.42	.16	.75
A WHITE PERSON PUNISHING A CHILD	5.58	.10	.87
PUNISHING A CHILD	5.68		
A NEGRO	5.30	.12	.48
A NEGRO PUNISHING A CHILD	5.42	.26	1.68
PUNISHING A CHILD	5.68		
A COMMUNIST	2.85	2.07	8.11*
A COMMUNIST PUNISHING A CHILD	4.92	.76	3.89*
PUNISHING A CHILD	5.68		
A PROTESTANT	5.57	.00	.03
A PROTESTANT PUNISHING A CHILD	5.57	.11	1.06
PUNISHING A CHILD	5.68		
A CATHOLIC	5.53	.11	.49
A CATHOLIC PUNISHING A CHILD	5.54	.26	1.69
PUNISHING A CHILD	5.68		

* = significant at $< .05$

Table 11e. N=52

	M	Mean Diff.	t
MY FATHER	6.64	1.04	5.63*
MY FATHER ATTENDING A FUNERAL	5.60	.46	2.90*
ATTENDING A FUNERAL	5.14		
A WHITE PERSON	5.35	.12	.44
A WHITE PERSON ATTENDING A FUNERAL	5.23	.09	.55
ATTENDING A FUNERAL	5.14		
A NEGRO	4.98	.43	1.93
A NEGRO ATTENDING A FUNERAL	5.41	.27	1.53
ATTENDING A FUNERAL	5.14		
A COMMUNIST	2.34	2.04	8.41*
A COMMUNIST ATTENDING A FUNERAL	4.38	.76	2.94*
ATTENDING A FUNERAL	5.14		
A PROTESTANT	5.60	.32	1.44
A PROTESTANT ATTENDING A FUNERAL	5.28	.14	.76
ATTENDING A FUNERAL	5.14		
A CATHOLIC	5.42	.05	.17
A CATHOLIC ATTENDING A FUNERAL	5.37	.23	1.24
ATTENDING A FUNERAL	5.14		

* = significant at $< .05$

Table 11f. N=48

	M	Mean Diff.	t
MY FATHER	6.40	5.01	24.13*
MY FATHER USING A HABIT FORMING DRUG	1.39	.04	.27
USING A HABIT FORMING DRUG	1.35		
A WHITE PERSON	5.18	3.58	13.09*
A WHITE PERSON USING A HABIT FORMING DRUG	1.60	.25	2.25*
USING A HABIT FORMING DRUG	1.35		
A NEGRO	4.94	3.38	13.99*
A NEGRO USING A HABIT FORMING DRUG	1.56	.21	2.01
USING A HABIT FORMING DRUG	1.35		
A COMMUNIST	2.29	.32	.99
A COMMUNIST USING A HABIT FORMING DRUG	1.97	.62	.32
USING A HABIT FORMING DRUG	1.35		
A PROTESTANT	5.88	4.24	20.59*
A PROTESTANT USING A HABIT FORMING DRUG	1.64	.29	2.35*
USING A HABIT FORMING DRUG	1.35		
A CATHOLIC	5.47	3.76	13.27*
A CATHOLIC USING A HABIT FORMING DRUG	1.71	.36	3.07*
USING A HABIT FORMING DRUG	1.35		

* = significant at $<.05$

mean error by only 1.67 units over 72 assertions tested. However, this small reduction did result in five additional accurate predictions.

Given the relatively high correlation between the C and CS, it seemed appropriate to determine if the C evaluation score could be improved upon as a predictor of cognitive interaction by generating some constant correction factor. The data were submitted to a simple linear regression technique in order to obtain a constant factor by the least squares method. This factor was then applied to the group mean evaluation scores assigned to the C components in Tables 10a-f and 11a-f. Contrary to expectations, the total mean error of prediction actually increased slightly after the correction factor was applied. It appeared, then, that the error was not a constant factor, as might be assumed from a cursory examination of the data.

It was further observed that in eight of the 12 tests made, the mean evaluation score assigned to the C component would have accurately predicted the cognitive interaction resulting in the assertions where MY FATHER served as the subject (S) component. For these assertions, this rate of predictive accuracy far exceeded both the congruity model, which failed 100 percent of the time, and the belief congruence model, which failed 83 percent of the time.

As indicated in Table 9, the respondents showed the greatest tendency to overassimilate towards the C component

for the set of assertions where MY FATHER functioned as the subject (S) component. It was apparent that the procedures used in the belief congruence model were not adequately accounting for this overassimilation.

If one considers the formula designed to account for overassimilation in the belief congruence model, it becomes apparent why this set of statements produced a number of errors.

The formula states that:

$$d_{cs} = d_c + (v)d_c \quad [2]$$

where d_c represents the effect of the first comparison process (C versus S) and where $(v)d_c$ represents the additional effect of the second comparison process (CS versus C), and where v represents the extent to which the person attaches greater importance to the CS than he does to C. When the person judges CS to exceed C in importance, v will equal some coefficient expressing the extent to which CS is perceived to exceed C in importance, and d_{cs} will exceed d_c by the amount $(v)d_c$: When d_c is positive, d_{cs} will be more positive, and when d_c is negative d_{cs} will be more negative.

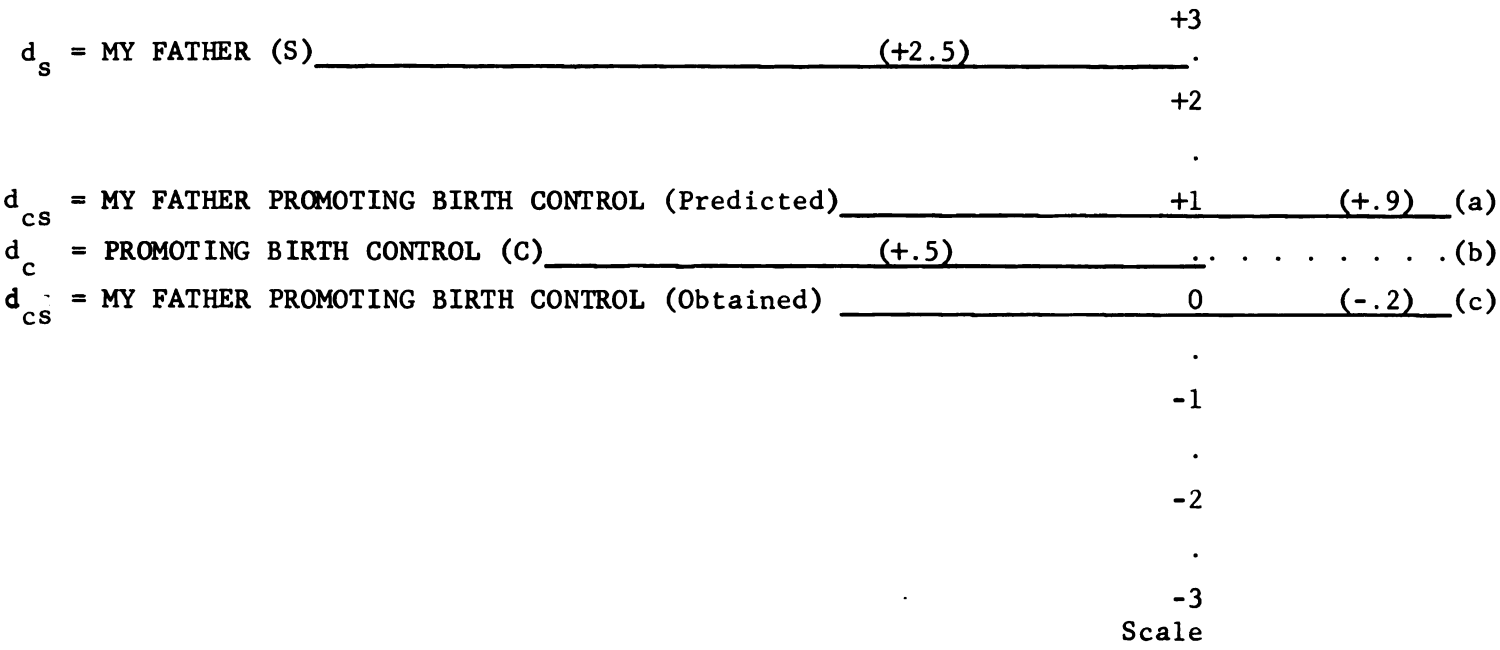
The type of overassimilation referred to above is illustrated by the data taken from Table 10 for Assertion 1, and visualized in Figure 5. In this case, the subject, MY FATHER, was evaluated +2.56 and the characterization, PROMOTING BIRTH CONTROL, was evaluated +0.55. The combined CS was evaluated -0.19 which is 0.74 scale units more negative than the

characterization, PROMOTING BIRTH CONTROL, and 2.75 scale units more negative than the subject, MY FATHER.

When the evaluation scores were assigned by the belief congruence procedure, the predicted evaluative score was +0.90. This obviously is 1.09 scale units above the obtained CS evaluation score of -0.19. The discrepancy results at least in part from the inability of the belief congruence model to take into account the direction of the overassimilation relative to the characterization component. Formula [2] above posits that:

> When a person judges CS to equal C in importance, v=0 and $d_{cs}=d_c$. When the person judges CS to exceed C in importance, v will equal some coefficient expressing the extent to which CS is perceived to exceed C in importance, and d_{cs} will exceed d_c by the amount $(v)d_c$. When d_c is positive, d_{cs} will be more positive; when d_c is negative d_{cs} will be more negative. (12, p. 131).

Based on the data given for Assertion 1 above, it is possible for a person to judge the CS as being more negative than a positive d_c or more positive than a negative d_c. When this type of assimilation is manifested, it is essential that a valence be assigned to v to indicate the direction of the importance of the d_c in relationship to the CS. Thus, in the case illustrated in Figure 5, the v would have been assigned a negative valence and subtracted from the positive d_c evaluation, rather than added to it, as is the case in the present procedure.



. The scale units between line a and c represent the total error of prediction in the case of Assertion 1, MY FATHER PROMOTING BIRTH CONTROL. The area between lines b and c represents the overassimilation in a negative (less positive) direction from a positively (+.5) rated C component. The formula $d_{cs} = d_c + (v)d_c$ cannot take into account the area between lines b and c because it assumes that the valence assigned to v is always in the direction of the evaluation assigned to the C component. In the present study a total of 48 of the 72 assertions tested manifested the type of overassimilation illustrated above. This fact leads to the conclusion that a method of obtaining a measurement of the direction of the overassimilation independent of the evaluation assigned to the C component is essential to the Importance Rating Procedure.

Fig. 5. A Schematic Illustration of Overassimilation not Accounted for by the Belief Congruence Model.

One possible way to correct this weakness would be to have the respondents indicate the direction of their feelings on the importance rating form. Figure 6 illustrates how the present procedure could be altered so that, in effect, it would determine the valence to be assigned to the v, regardless of the d_c evaluation score. If the respondent feels more negatively towards CS than towards C, v is negative, if he feels more positively towards the CS than towards the C, v is positive. In the first instance, the negative v coefficient multiplied by the positive d_c would be subtracted from d_c thus moving the prediction towards the less positive position, and thus accounting for at least part of the type of over-assimilation illustrated above.

Based on the results of this investigation, certain alterations in the construction of the Importance Rating Form used with the belief congruence model are suggested in Figure 6. Included in this suggested form is a question for obtaining measurements of the direction of the respondents' feelings toward the characterization independent of their feelings toward the characterization in isolation. It appears that the suggested revision illustrated in Figure 6 might also reduce the number of subjects eliminated because they could not operationally respond to the importance rating instrument.

Overall, the present study provides substantial support for the basic theoretical rationale underlying the belief congruence principle. It is evident that the congruity model,

1. How do you feel about MY FATHER PROMOTING BIRTH CONTROL?

Strongly disapprove ___:___:___:___:___:___:___ Strongly approve
1 2 3 4 5 6 7

2. In rating MY FATHER PROMOTING BIRTH CONTROL the way you did, indicate on the scale below how important, that is how much weight did the words PROMOTING BIRTH CONTROL and MY FATHER have on how you felt about MY FATHER PROMOTING BIRTH CONTROL? Indicate just how much influence you feel each part of the statement had on how you actually rated MY FATHER PROMOTING BIRTH CONTROL.

MY FATHER

:___:___:___:___:___:___:___:___:___:___:___:
0 10 20 30 40 50 60 70 80 90 100 Percent

PROMOTING BIRTH CONTROL

:___:___:___:___:___:___:___:___:___:___:___:
0 10 20 30 40 50 60 70 80 90 100 Percent

Please check: Add the two percentages together. Do they total to 100 percent? If not, readjust your ratings so they total 100 percent when added together.

If you indicated above that PROMOTING BIRTH CONTROL completely (100%) determined the way you rated MY FATHER PROMOTING BIRTH CONTROL, go to question 3 below. Otherwise continue to the next rating sheet.

3. Since you felt that the words, PROMOTING BIRTH CONTROL, completely determined how you feel about MY FATHER PROMOTING BIRTH CONTROL, do you feel even more strongly towards MY FATHER PROMOTING BIRTH CONTROL than you feel about other people PROMOTING BIRTH CONTROL?

   a. Yes___my feelings about MY FATHER PROMOTING BIRTH CONTROL are even stronger than my feelings about other people PROMOTING BIRTH CONTROL. (complete c and d below)

   b. No ___my feelings about MY FATHER PROMOTING BIRTH CONTROL and PROMOTING BIRTH CONTROL are about of equal strength. (omit c and d below and go to next rating sheet)

   c. Since you do feel more strongly towards MY FATHER PROMOTING BIRTH CONTROL than you feel towards other

people PROMOTING BIRTH CONTROL, do you feel more favorable___or less favorable___towards MY FATHER PROMOTING BIRTH CONTROL?

d. How much more strongly do you feel?

Slightly stronger: ___:___:___:___:___:___:___:___:___:___: Much,much more strongly
1 2 3 4 5 6 7 8 9 10

Fig. 6 Recommended Revision of the Relative Importance Rating Form to obtain the direction of the over-assimilation in relationship to the character-ization component in the combined CS configuration.

which assumes that cognitive interaction resulting from word combinations can be predicted from an evaluation of the words in isolation, does not predict as well as the more gestalt-like belief congruence model. It is obvious that any model which purports to predict cognitive interactions of the type investigated in this study must allow for various degrees of assimilation and overassimilation much in the manner that it is manifested by the belief congruence model.

Although the Rokeach and Rothman (12) work and the present study provide considerable empirical evidence in support of the dynamics of the processes involved in cognitive interaction under the belief congruence model, the model appears to need further procedural refinements to improve its accuracy. In particular, procedures for dealing with the overassimilation phenomenon should be used in future tests of the model.

CHAPTER 4

CONCLUSIONS, DISCUSSION, AND IMPLICATIONS FOR FUTURE RESEARCH

The purpose of the present investigation was to test empirically the relative accuracy and reliability of the congruity and belief congruence models in predicting cognitive interaction resulting from certain word combinations. The investigation was guided by two broad objectives and a series of three working hypotheses designed to make specific the empirical data and their relationship to the conclusions drawn from the analysis.

It is believed that, when considered within the limitations of the characteristics of the respondents and word combinations employed in this investigation, the conclusions presented in this chapter are reasonable in light of the data presented in Chapter 3.

Conclusions Relative to Accuracy of Prediction of Cognitive Interaction by the Congruity and Belief Congruence Models

(1) It is concluded on the basis of the present investigation that the belief congruence model is significantly superior to the congruity model as a predictor of cognitive interaction resulting from certain word combinations, both in terms of total mean error of prediction per word combination tested and in total number of word combinations predicted accurately.

These findings and conclusions are consistent with those reported by Rokeach and Rothman (12) in their 1965 study which used a different set of word combinations and a different type of respondents. The fact that comparable results were obtained under the two different situations gives additional support to the general superiority of the belief congruence procedure as a more accurate predictor of cognitive interaction.

It would appear that the underlying theoretical rationale of the belief congruence principle--which takes into account various degrees of assimilation and overassimilation towards the characterization component of the combined CS configuration--is the major reason for the increased accuracy of prediction manifested by the belief congruence model. However, as was pointed out above, the present belief congruence formulation apparently does not deal adequately with at least one type of overassimilation manifested in the present investigation.

(2) It is further concluded that whether the subject (S) or the characterization (C) is varied in a series of combined CS configurations has no effect on the mean evaluation scores assigned to the CS, nor does it affect the predictive outcome of the two models. In other words, it makes little difference to the respondent whether or not he is responding to a series of assertions in which the subject (S) of the assertion is the same or varied in relationship to the characterization (C) applied to the subject (S) of the assertion (CS) being tested.

This particular finding may be of methodological utility in future research dealing with cognitive interaction. In the series being assessed for evaluative meaning, it appears that the subject is responding to each assertion rather independently of the others. The fact that subjects do apparently respond to a variety of word combinations without biasing interaction effect is of potential methodological importance.

Conclusion Relative to the Reliability of Prediction of Cognitive Interaction by the Congruity and Belief Congruence Models

(1) It is concluded that the belief congruence model is significantly more reliable than the congruity model in predicting cognitive interaction resulting from certain word combinations.

This conclusion is based on the results obtained when identical word combinations were tested across independent, but equivalent test groups. Although the total number of assertions predicted accurately by the congruity and belief congruence models varied widely (19 vs. 48 out of 72 tested) the reliability test showed that only five of the word combinations were common between the two test groups for the congruity model, while 20 of the 24 word combinations predicted accurately in one test group were also predicted accurately in the second test group by the belief congruence model. This result indicates that the belief congruence formulation represents a more reliable explanation of the underlying cognitive interaction processes that are apparently

common to different but equivalent groups of subjects who are asked to assess the same word combinations.

Conclusions Relative to the Theoretical Issues Underlying the Cognitive Interaction Processes and the Operational Dynamics of the Congruity and Belief Congruence Models

(1) It is concluded that the characteristics of the component parts of the combined CS configuration are significantly related to the ability of either model to accurately predict cognitive interaction.

This conclusion is based on the results which show that the models could more accurately predict the cognitive interaction outcomes on some assertions than on others used in this study. Two subject (S) components were particularly difficult for both models to predict accurately; namely, MY FATHER and A WHITE PERSON. The characterization (C), PROMOTING BIRTH CONTROL, was found to contribute to prediction error most often in both models. In other words, almost without exception, any word combination that contained the subjects (S's) MY FATHER or A WHITE PERSON in association with any of the six characterizations was likely to result in cognitive interaction different than the outcome predicted by the models. This same relationship was also noted in the case of the characterization (C) PROMOTING BIRTH CONTROL.

(2) It is concluded that at least for certain word combinations tested the major reason for the models' inability to predict cognitive interaction accurately is directly related

to a specific type of overassimilation that cannot be adequately accomodated by the present procedures.

Since, from an operational viewpoint, the present procedures are basically additive, neither model can adequately deal with overassimilation in which the respondent assigns an evaluative meaning score to the CS configuration that is less positive than a positively rated characterization (C), or less negative than a negatively rated characterization (C). The data clearly indicate that in many of the word combinations (48 of 72) the mean CS evaluation scores assigned were either less positive than a positive rating assigned to the characterization in isolation, or more positive than the negative evaluative scores assigned to the characterization in isolation.

This situation makes it essential that the direction of the overassimilation be obtained independently of the evaluative rating assigned to the characterization (C) in isolation. The possibility of using such a corrective measure in conjunction with the belief congruence procedure is discussed on Pages 82 and 84 in Chapter 3.

(3) A high positive correlation between the characterization (C) evaluative scores and the combined CS configuration evaluative scores leads to the conclusion that the characterization evaluative scores alone are reasonably good predictors of cognitive interaction between certain word combinations.

In the present investigation, a significant correlation of .76 was found between the C and CS evaluation scores. Although an attempt to generate a corrective constant by linear regression methods failed to increase the predictive accuracy of the characterization rating alone, the relatively high relationship is of interest and merits more investigation.

In general, what this finding indicates is that when compared with the characterization (C) component, the subject (S) of the word combination is of relatively little value in determining cognitive interaction effects. The fact that the subject (S) has a very low correlation (r=.13) with the combined CS evaluation scores further supports these apparent differences in the importance of the two components. Evidently, it makes little difference what subject is associated with a particular issue, activity, or event as determined by the characterization (C) in the combined CS configuration; instead, the relative influence of the characterization evaluation will apparently dominate the interaction effect. Although the exact correlations of the Rokeach and Rothman study were not available to the author, it would appear that comparable relationships were also manifested in their data.

Implications for Future Research

The present investigation extended the results of the Rokeach and Rothman study in several significant ways.

In addition to replicating their results, the present study: (1) tested the relative reliability of the two models by employing an equal group technique; (2) strengthened the research design by obtaining all relevant measurements on the same subjects[3]; (3) recommended a possible measurement technique that will deal with one type of overassimilation which the present belief congruence procedures do not take into account; (4) defined more specifically the relative influence of the subject (S) and characterization (C) components on cognitive interaction resulting from certain word combinations, and (5) tested a series of word combinations of the type not generally tested in prior word combination studies; i.e., combinations in which the copula itself is capable of eliciting evaluative meaning.

The study suggests that cognitive interaction, even of the least complex types, remains a complicated problem. In terms of predictive accuracy, the various attempts to quantify such behavior have left much to be desired. Most certainly one must give credit to the originators of the congruity and belief congruence principles for the inroads and new insight they have contributed to the area of cognitive interaction research.

---

[3]The Rokeach and Rothman study design employed an equivalent group technique in which one group of subjects assigned evaluative ratings to the assertions and their component parts, while another group of subjects rated the assertions and their component parts for relative importance. The present study obtained both measurements on the same subjects.

Both the prior research reported in this study and the present investigation itself have been devoted to only a very small aspect of the broader dimensions of cognitive interaction. However, it seems appropriate to suggest that if the congruity or belief congruence principles can be empirically supported in the narrow aspects of the cognitive research area, it might well be the first step toward generalization of the principles.

The findings of the present study indicate that additional research is needed to reformulate the belief congruence model as an operational, predictive model. The present operational procedures appear to rely on the presence at the time of measurement of the cognitive interaction event to be predicted. The present investigation offers no specific suggestions or leads as to how this might be accomplished, except to point out that there is a relatively high correlation between the characterization (C) component of the combined CS configuration and the actual cognitive interaction effect assigned by the 619 respondents employed in the study. This finding suggests the possibility of future research to determine if the close relationship exists across a variety of word combinations and populations, and how the relationship may manifest itself under different test situations.

The operational value of the close relationship observed between the C and CS evaluative scores lies in the fact that it is relatively simple to obtain measurement on a single

component as compared to the total operational procedure required by the belief congruence model. The data of this study reveal that the C evaluative scores closely approximate the predictive outcome of the entire belief congruence procedure, and thus appear to give a reasonably good estimate of cognitive interaction effects. Based on this finding, it seems appropriate to suggest that future research could well be directed toward determining how generalized this relationship may be across different types of word combinations, and to explore ways to increase the methodological utility of this single measurement as an estimate of cognitive interaction.

In addition, the present investigation suggests the possibility of an empirical study to test the corrective measurement technique suggested to help account for a certain type of overassimilation that the present belief congruence procedure does not take into account. This technique is discussed in detail on pages 84 to 87 in Chapter 3. Does the addition of the direction measurement of the overassimilation on the C vs. CS comparison increase the predictive accuracy of the belief congruence model? Questions such as this one are fair game for future research.

BIBLIOGRAPHY

1. Asch, S. E. Social Psychology, New York: Prentice-Hall, 1952.

2. Edwards, A. L. Experimental Design in Psychological Research, New York: Holt, 1960.

3. Festinger, L. A Theory of Cognitive Dissonance. Standard, California: Stanford University Press, 1957.

4. Games, P. A. and Klare, G. R. Elemtary Statistics. New York: McGraw-Hill, 1967.

5. Heider, F. The Psychology of Interpersonal Relations. New York: John Wiley and Sons, 1958.

6. Lewin, K. Field theory and experiment in social psychology. In Field theory in social science, Harper, 1951.

7. Newcomb, T. An Approach to the Study of Communication Acts. Psychological Review, 1958, 393-404.

8. Osgood, C. E. and Tannenbaum, P. H. The Principle of Congruity in the Prediction of Attitude Change. Psychological Review, 1955, 62, 42-55.

9. Osgood, C. E., Suci, G. J., and Tannenbaum, P. H. The Measurement of Meaning. Urbana: University of Illinois Press, 1957.

10. Rokeach, M., The Nature of Attitudes. In International Encyclopedia of Social Science. New York: McMillan, 1965.

11. Rokeach, M. The Open and Closed Mind. New York: Basic Books, 1960.

12. Rokeach, M. and Rothman, G. The Principle of Belief Congruency and the Congruity Principle as Models of Cognitive Interaction. Psychological Review, 1965, 72, 128-142.

13. Rokeach, M. The Three Christs of Ypsilanti: a Psychological Study. New York: Knopf, 1964.

14. Sherif, C., Sherif, M., and Nebergall, R. Attitude and Attitude Change. Philadelphia: Saunders, 1965.

15. Walker, H. H. and Lev, J. Statistical Inference. New York: Holt and Company, 1953.

16. Fishbein, M. and Hunter, R. Summation Versus Balance in Attitude Organization and Change. Journal of Abnormal Social Psychology, 1964, 69, 505-510.

APPENDICES

APPENDIX A

TP NO. 12
c1-2

FORM NO. ____
c3-7

PART I

A STUDY OF WORD MEANING

The purpose of the study is to explore ways people think about individual words and combinations of words within a single statement. In PART I of this FORM you will be presented a series of ideas made up of either two words or a series of words (a phrase). We want you to consider each of these ideas separately and to judge them against a series of descriptive scales. We want you to make your judgments on the basis of what these ideas mean to <u>you</u>. There are no <u>right</u> or <u>wrong</u> answers, it is your <u>personal opinion</u> that you are to use to make your judgments.

Under each idea to be judged you will find a set of three scales like the one below:

MY FRIEND

IMPORTANT ____:____:____:____:____:____:____ UNIMPORTANT

Here's how it works:

First look at the adjectives at each end of the scale and decide which one fits best. If you felt that MY FRIEND was very IMPORTANT, you would put an "X" in the space closest to IMPORTANT. If you felt that MY FRIEND was very UNIMPORTANT, you would place the "X" in the space closest to UNIMPORTANT.

The middle space along the scale stands for NO OPINION, and the other spaces mean stronger and stronger feelings as they get closer to the ends of the scale.

You might think of the spaces as being labeled like this:

MY FRIEND

very quite a little neutral a little quite very

:___:_____:_____:_____:_____:_____:_____:

IMPORTANT UNIMPORTANT

IMPORTANT: (1) Consider each idea separately, and check the three scales under it and move to the next. Do not try to remember how you check similar items earlier in the test. Make each idea a separate and independent judgment.

(2) Place your check-mark ("X") <u>in the middle of the space</u>, not over the colons or near the boundaries:

This Not This
____:__X__:____:____:____X____:____:

(3) Be sure to check all three scales for each idea...<u>do not omit any</u>.

(4) Never put more than <u>one</u> check-mark on any single scale.

If any of the instructions were not clear please request the person who handed out the test FORM to help you. If not, go ahead and complete PART I of this FORM. After you finish PART I, please wait for further instructions before turning to PART II. You will have about 10 minutes to complete PART I.

12-1

USING A HABIT FORMING DRUG

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE c8___

WORTHLESS___:___:___:___:___:___:___VALUABLE c9___

GOOD___:___:___:___:___:___:___BAD c10___

12-2

MY FATHER

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE c11___

VALUABLE___:___:___:___:___:___:___WORTHLESS c12___

BAD___:___:___:___:___:___:___GOOD c13___

12-3

A WHITE PERSON

DEPLORABLE___:___:___:___:___:___:___ADMIRABLE	c14___
VALUABLE___:___:___:___:___:___:___WORTHLESS	c15___
GOOD___:___:___:___:___:___:___BAD	c16___

12-4

A NEGRO

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE	c17___
WORTHLESS___:___:___:___:___:___:___VALUABLE	c18___
GOOD___:___:___:___:___:___:___BAD	c19___

12-5

A COMMUNIST

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE	c20___
VALUABLE___:___:___:___:___:___:___WORTHLESS	c21___
BAD___:___:___:___:___:___:___GOOD	c22___

12-6

A PROTESTANT

DEPLORABLE___:___:___:___:___:___:___ADMIRABLE	c23___
VALUABLE___:___:___:___:___:___:___WORTHLESS	c24___
GOOD___:___:___:___:___:___:___BAD	c25___

12-7

A CATHOLIC

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE c26___

WORTHLESS___:___:___:___:___:___:___VALUABLE c27___

GOOD___:___:___:___:___:___:___BAD c28___

12-8

MY FATHER USING A HABIT FORMING DRUG

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE c29___

VALUABLE___:___:___:___:___:___:___WORTHLESS c30___

BAD___:___:___:___:___:___:___GOOD c31___

12-9

A WHITE PERSON USING A HABIT FORMING DRUG

DEPLORABLE___:___:___:___:___:___:___ADMIRABLE c32___

VALUABLE___:___:___:___:___:___:___WORTHLESS c33___

GOOD___:___:___:___:___:___:___BAD c34___

12-10

A NEGRO USING A HABIT FORMING DRUG

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE c35___

WORTHLESS___:___:___:___:___:___:___VALUABLE c36___

GOOD___:___:___:___:___:___:___BAD c37___

12-11

A COMMUNIST USING A HABIT FORMING DRUG

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE	c38___
VALUABLE___:___:___:___:___:___:___WORTHLESS	c39___
BAD___:___:___:___:___:___:___GOOD	c40___

12-12

A PROTESTANT USING A HABIT FORMING DRUG

DEPLORABLE___:___:___:___:___:___:___ADMIRABLE	c41___
VALUABLE ___:___:___:___:___:___:___WORTHLESS	c42___
GOOD ___:___:___:___:___:___:___BAD	c43___

12-13

A CATHOLIC USING A HABIT FORMING DRUG

ADMIRABLE___:___:___:___:___:___:___DEPLORABLE c44___

WORTHLESS___:___:___:___:___:___:___VALUABLE c45___

GOOD___:___:___:___:___:___:___BAD c46

PART II

In PART I you rated a series of statements to indicate how you felt about their meaning. PART II is somewhat more difficult to understand and do. It will take your careful attention to the instructions.

At the top of the next six pages, the same statements are given again that you just completed rating in PART I. This time, however, we want you to judge the statements in a somewhat different way:

STEP I

First, we want you to consider each statement again and indicate on the scale below it how strong you approve or disapprove of the idea. Just place a check-mark above the number on the scale that you feel best describes how you feel about the idea. If you check "1" that means you strongly disapprove and if you check "7" that means you strongly approve. The numbers between "1" and "7" may be used to indicate degrees between strongly disapprove and strongly approve. Again be sure to check each scale, and check each scale only once.

STEP II

After you have indicated how you approve or disapprove of the statement, move immediately to number 2 on the same page. To help you complete this part of the rating, we think it will be helpful if you will think of each statement as having two parts. The first part is made up of the first two words and the second part is made up of the remaining words in the statement.

It will become more clear when you read the first paragraph for number 2 as to just exactly what kind of a rating you are to make. It may be necessary for you to re-read this first paragraph two or three times to get the full understanding of how to proceed with a. b. or c. parts in number 2.

Now turn to the next page. Complete each page in turn. Please consider each statement separately, even though they seem to be related. Do not look back to your former ratings as this might confuse you on this part.

Thank you very much for your cooperation in this study.

12-11

1. How do you feel about: MY FATHER USING A HABIT FORMING DRUG

STRONGLY DISAPPROVE ___:___:___:___:___:___:___: STRONGLY APPROVE
1 2 3 4 5 6 7 c47

2. In rating MY FATHER USING A HABIT FORMING DRUG the way you did, how important, that is, how much weight did the words USING A HABIT FORMING DRUG have in determining your rating of the statement, MY FATHER USING A HABIT FORMING DRUG? Did you feel about the combination MY FATHER USING A HABIT FORMING DRUG the same way you felt about the words USING A HABIT FORMING DRUG or the same way you felt about MY FATHER? Estimate how much weight USING A HABIT FORMING DRUG and MY FATHER had in determining the way you actually rated the combination MY FATHER USING A HABIT FORMING DRUG.

a. My feelings about USING A HABIT FORMING DRUG <u>completely</u> (100%) determined the way I rated MY FATHER USING A HABIT FORMING DRUG. Check the one that applies.

YES_____Now go to question b. <u>Do not</u> answer question c. c48

NO_____Now go to question c. <u>Do not</u> answer question b.

b. In fact, my feelings about MY FATHER USING A HABIT FORMING DRUG are even more extreme than my feelings about other people USING A HABIT FORMING DRUG.

Answer those that apply to you:

_____No, my feelings about MY FATHER USING A HABIT FORMING DRUG and USING A HABIT FORMING DRUG are about of equal strength. c49

_____Yes, my feelings about MY FATHER USING A HABIT FORMING DRUG are even stronger than my feelings about other people USING A HABIT FORMING DRUG.

How much stronger? Check the <u>one</u> that would be closest to your best guess:

_____Slightly stronger (1% stronger)?

_____Quite a bit stronger (50% stronger)? c50

_____Much, much stronger (100% stronger)?

c. My feelings about USING A HABIT FORMING DRUG did not completely determine my rating of the combination MY FATHER USING A HABIT FORMING DRUG. Indicate on the scales below how much you think each part of the statement influenced you:

Assume that each scale equals 100%. Check the point on each scale which you think best describes the amount of influence that part of the statement had on your rating of the statement on the whole. Remember that the percentage checked on each scale when added together must be equal to <u>100</u> percent.

MY FATHER ___:___:___:___:___:___:___:___:___:___:___: c51
0 10 20 30 40 50 60 70 80 90 100
USING A HABIT FORMING DRUG

___:___:___:___:___:___:___:___:___:___:___: c52
0 10 20 30 40 50 60 70 80 90 100

<u>Please Check</u>: Add the two percentages together that you have checked. Do they equal 100% If not, readjust your rating so that they sum to 100%.

2-15

1. How do you feel about A WHITE PERSON USING A HABIT FORMING DRUG

STRONGLY DISAPPROVE	1	2	3	4	5	6	7	STRONGLY APPROVE

053

2. In rating A WHITE PERSON USING A HABIT FORMING DRUG the way you did, how important, that is, how much weight did the words USING A HABIT FORMING DRUG have in determining your rating of the statement A WHITE PERSON USING A HABIT FORMING DRUG? Did you feel about the combination A WHITE PERSON USING A HABIT FORMING DRUG the same way you felt about USING A HABIT FORMING DRUG or the same way you felt about A WHITE PERSON? Estimate how much weight USING A HABIT FORMING DRUG and A WHITE PERSON had in determining the way you actually rated the combination A WHITE PERSON USING A HABIT FORMING DRUG.

a. My feelings about USING A HABIT FORMING DRUG completely (100%) determined the way I rated A WHITE PERSON USING A HABIT FORMING DRUG. (Check the one that applies)

YES_____Now go to question b. Do not answer question c. 054

NO _____Now go to question c. Do not answer question b.

b. In fact, my feelings about A WHITE PERSON USING A HABIT FORMING DRUG are even more extreme than my feelings about other people USING A HABIT FORMING DRUG. Answer those that apply to you.

___ No. my feelings about A WHITE PERSON USING A HABIT FORMING DRUG and USING A HABIT FORMING DRUG are of about equal strength;

055

_____Yes, my feelings about A WHITE PERSON USING A HABIT FORMING DRUG are even stronger than my feelings about other people USING A HABIT FORMING DRUG.

How much stronger? Check the one that would be closest to your best guess.

_____Slightly stronger (1% stronger)?

_____Quite a bit stronger (50% stronger)? 056

_____Much, much stronger (100% stronger)?

c. My feelings about USING A HABIT FORMING DRUG did not completely determine my rating of the combination A WHITE PERSON USING A HABIT FORMING DRUG. Indicate on the scales below how much you think each part of the statement influenced you:

Assume that each scale equals 100%. Check the point on each scale which you think best describes the amount of influence that part of the statement had on your rating of the statement on the whole. Remember that the percentage checked on each scale when added together must be equal to 100 percent.

A WHITE PERSON

0	10	20	30	40	50	60	70	80	90	100	

USING A HABIT FORMING DRUG 057

0	10	20	30	40	50	60	70	80	90	100	

058

Please Check: Add the two percentages together that you have checked. Do they equal 100%? If not readjust your rating so that they sum to 100?

12-16

1. How do you feel about: A NEGRO USING A HABIT FORMING DRUG

STRONGLY ____:____:____:____:____:____:____ STRONGLY
DISAPPROVE 1 2 3 4 5 6 7 APPROVE

c59—

2. In rating A NEGRO USING A HABIT FORMING DRUG the way you did, how important, that is, how much weight did the words USING A HABIT FORMING DRUG have in determining your rating of the statement, A NEGRO USING A HABIT FORMING DRUG? Did you feel about the combination A NEGRO USING A HABIT FORMING DRUG the same way you felt about the words USING A HABIT FORMING DRUG or the same way you felt about A NEGRO? Estimate how much weight USING A HABIT FORMING DRUG and A NEGRO had in determining the way you actually rated the combination A NEGRO USING A HABIT FORMING DRUG.

a. My feelings about USING A HABIT FORMING DRUG completely (100%) determined the way I rated A NEGRO USING A HABIT FORMING DRUG. (Check the one that applies.)

YES____Now go to question b. Do not answer question c. c60_

NO____Now go to question c. Do not answer question b.

b. In fact, my feelings about A NEGRO USING A HABIT FORMING DRUG are even more extreme than my feelings about other people USING A HABIT FORMING DRUG. Answer those that apply to you.

____No, my feelings about A NEGRO USING A HABIT FORMING DRUG and USING A HABIT FORMING are of about equal strength.

c61—

____Yes, my feelings about A NEGRO USING A HABIT FORMING DRUG are even stronger than my feelings about other people USING A HABIT FORMING DRUG.

How much stronger? Check the one that would be closest to your best guess.

____Slightly stronger (1% stronger)?

____Quite a bit stronger (50% stronger)?

c62—

____Much, much stronger (100% stronger)?

c. My feelings about USING A HABIT FORMING DRUG did not completely determine my rating of the comgination A NEGRO USING A HABIT FORMING DRUG. Indicate on the scales below how much you think each part of the statement influenced you.

Assume that each scale equals 100%. Check the point on each scale which you think best describes the amount of influence that part of the statement had on your rating of the statement on the whole. Remember that the percentage checked on each scale when added together must be equal to 100 percent.

A NEGRO ___:___:___:___:___:___:___:___:___:___:___ c63—
0 10 20 30 40 50 60 70 80 90 100

USING A HABIT FORMING DRUG
___:___:___:___:___:___:___:___:___:___:___ c64__
0 10 20 30 40 50 60 70 80 90 100

Please Check: Add the two percentages together that you have checked. Do they equal 100%? If not readjust your rating so that they sum to 100%.

12-17

1. How do you feel about: A COMMUNIST USING A HABIT FORMING DRUG

STRONGLY DISAPPROVE ____:____:____:____:____:____:____ STRONGLY APPROVE

c65__

2. In rating A COMMUNIST USING A HABIT FORMING DRUG the way you did, how important, that is, how much weight did the words USING A HABIT FORMING DRUG have in determining your rating of the statement, A COMMUNIST USING A HABIT FORMING DRUG? Did you feel about the combination A COMMUNIST USING A HABIT FORMING DRUG the same way you felt about the words USING A HABIT FORMING DRUG or the same way you felt about A COMMUNIST? Estimate how much weight USING A HABIT FORMING DRUG and A COMMUNIST had in determining the way you actually rated the combination A COMMUNIST USING A HABIT FORMING DRUG.

   a. My feelings about USING A HABIT FORMING DRUG <u>completely</u> (100%) determined the way I rated A COMMUNIST USING A HABIT FORMING DRUG. Check the one that applies.

      YES____Now go to question b. <u>Do not</u> answer question c. c67__

      NO____Now go to question c. <u>Do not</u> answer question b.

   b. In fact, my feelings about A COMMUNIST USING A HABIT FORMING DRUG are even more extreme than my feelings about other people USING A HABIT FORMING DRUG. Answer those that apply to you.

      ____No, my feelings about A COMMUNIST USING A HABIT FORMING DRUG and USING A HABIT FORMING DRUG are of about equal strength. c68__

      ____Yes, my feelings about A COMMUNIST USING A HABIT FORMING DRUG are even stronger than my feelings about other people USING A HABIT FORMING DRUG.

      How much stronger? Check the <u>one</u> that would be closest to your best guess.

      ____Slightly stronger (1% stronger)? c69__

      ____Quite a bit stronger (50% stronger)?

      ____Much, much stronger (100% stronger)?

   c. My feelings about USING A HABIT FORMING DRUG did not completely determine my rating of the combination A COMMUNIST USING A HABIT FORMING DRUG. Indicate on the scales below how much you think each part of the statement influenced you.

      Assume that each scale equals 100%. Check the point on each scale which you think best describes the amount of influence that part of the statement had on your rating of the statement on the whole. Remember that the percentage checked on each scale when added together must be equal to <u>100</u> percent.

      A COMMUNIST ____:____:____:____:____:____:____:____:____:____:____ c70__
      0 10 20 30 40 50 60 70 80 90 100

      USING A HABIT FORMING DRUG

      ____:____:____:____:____:____:____:____:____:____:____
      0 10 20 30 40 50 60 70 80 90 100 c71__

      <u>Please Check</u>: Add the two percentages together that you have checked. Do they equal 100%? If not readjust your rating so that they sum to 100%.

12-18

1. How do you feel about: A PROTESTANT USING A HABIT FORMING DRUG

STRONGLY DISAPPROVE	1	2	3	4	5	6	7	STRONGLY APPROVE

Card #2

c72 _

2. In rating A PROTESTANT USING A HABIT FORMING DRUG the way you did, how important, that is, how much weight did the words USING A HABIT FORMING DRUG have in determining your rating of the statement, A PROTESTANT USING A HABIT FORMING DRUG? Did you feel about the combination A PROTESTANT USING A HABIT FORMING DRUG the same way you felt about the words USING A HABIT FORMING DRUG or the same way you felt about A PROTESTANT? Estimate how much weight USING A HABIT FORMING DRUG and A PROTESTANT had in determining the way you actually rated the combination A PROTESTANT USING A HABIT FORMING DRUG.

   a. My feelings about USING A HABIT FORMING DRUG <u>completely</u> (100%) determined the way I rated A PROTESTANT USING A HABIT FORMING DRUG. Check the one that applies.

      YES____Now go to question b. <u>Do not</u> answer question c. c73_

      NO_____Now go to question c. <u>Do not</u> answer question b.

   b. In fact, my feelings about A PROTESTANT USING A HABIT FORMING DRUG are even more extreme than my feelings about other people USING A HABIT FORMING DRUG. Answer those that apply to you.

      _____No, my feelings about A PROTESTANT USING A HABIT FORMING DRUG and USING A HABIT FORMING DRUG are of about equal strength. c74__

      _____Yes, my feelings about A PROTESTANT USING A HABIT FORMING DRUG are even stronger than my feelings about other people USING A HABIT FORMING DRUG.

      How much stronger? Check the <u>one</u> that would be closest to your best guess.

      _____Slightly stronger (1% stronger)? c75__

      _____Quite a bit stronger (50% stronger)?

      _____Much, much stronger (100% stronger)?

   c. My feelings about USING A HABIT FORMING DRUG did not completely determine my rating of the combination A PROTESTANT USING A HABIT FORMING DRUG. Indicate on the scales below how much you think each part of the statement influenced you.

      Assume that each scale equals 100%. Check the point on each scale which you think best describes the amount of influence that part of the statement had on your rating of the statement on the whole. Remember that the percentage checked on each scale when added together must be equal to <u>100</u> percent.

      A PROTESTANT ___:___:___:___:___:___:___:___:___:___:___ c76__
      0 10 20 30 40 50 60 70 80 90 100

      USING A HABIT FORMING DRUG
      ___:___:___:___:___:___:___:___:___:___:___ c78__
      0 10 20 30 40 50 60 70 80 90 100

      <u>Please Check</u>: Add the two percentages together that you have checked. Do they equal 100%? If not readjust your rating so that they sum to 100%.

      c79 1

12,19

1. How do you feel about: A CATHOLIC USING A HABIT FORMING DRUG Card # 2

STRONGLY DISAPPPROVE 1 ___:___:___:___:___:___:___ 2 3 4 5 6 7 STRONGLY APPROVE c8___

2. In rating A CATHOLIC USING A HABIT FORMING DRUG the way you did, how important, that is, how much weight did the words USING A HABIT FORMING DRUG have in determining your rating of the statement, A CATHOLIC USING A HABIT FORMING DRUG? Did you feel about the combination A CATHOLIC USING A HABIT FORMING DRUG the same way you felt about the words USING A HABIT FORMING DRUG or the same way you felt about A CATHOLIC? Estimate how much weight USING A HABIT FORMING DRUG and A CATHOLIC had in determining the way you actually rated the combination A CATHOLIC USING A HABIT FORMING DRUG.

a. My feelings about USING A HABIT FORMING DRUG completely (100%) determined the way I rated A CATHOLIC USING A HABIT FORMING DRUG. Check the one that applies.

YES____Now go to question b. Do not answer question c. c9___

NO_____Now go to question c. Do not answer question b.

b. In fact, my feelings about A CATHOLIC USING A HABIT FORMING DRUG are even more extreme than my feelings about other people USING A HABIT FORMING DRUG. Answer those that apply to you.

_____No, my feelings about A CATHOLIC USING A HABIT FORMING DRUG and USING A HABIT FORMING DRUG are about of equal strength. c10___

_____Yes, my feelings about A CATHOLIC USING A HABIT FORMING DRUG are even stronger than my feelings about other people USING A HABIT FORMING DRUG.

How much stronger? Check the one that would be closest to your best guess.

_____Slightly stronger (1% stronger)? c11___

_____Quite a bit stronger (50% stronger)?

_____Much, much stronger (100% stronger)?

c. My feelings about USING A HABIT FORMING DRUG did not completely determine my rating of the combination A CATHOLIC USING A HABIT FORMING DRUG. Indicate on the scales below how much you think each part of the statement influenced you.

Assume that each scale equals 100%. Check the point on each scale which you think best describes the amount of influence that part of the statement had on your rating of the statement on the whole. Remember that the percentage checked on each scale when added together must be equal to 100 percent.

A CATHOLIC ___:___:___:___:___:___:___:___:___:___:___ c12___
0 10 20 30 40 50 60 70 80 90 100

USING A HABIT FORMING DRUG
___:___:___:___:___:___:___:___:___:___:___ c13___
0 10 20 30 40 50 60 70 80 90 100

Please Check: Add the two percentages together that you have checked. Do they equal 100%? If not readjust your rating so that they sum to 100%.

APPENDIX B

VERBAL INSTRUCTION GIVEN VIA CCTV

The next few minutes, we will be participating in a scientific study on the meaning of words. I am Bill Tedrick, and besides being a member of the State 4-H - Youth program staff, I am also a graduate student in the Department of Communication Arts here at Michigan State University. As part of my work, I am conducting some research which I hope you will help me in by participating and completing the materials that have been passed out to you in your viewing rooms just after the news broadcast. First of all, I want to say a few words about these test materials. I hope that you will take these test materials and consider them on a page by page basis--rather than looking back and forth through the materials that you would take each page as it comes. The materials have two parts. The instructions for the first part I will give you at this time. This is the blue sheet which is on top of the materials that you have. Then, about halfway through, you will find a yellow sheet which is the instructions for the second part of the materials. We won't be sticking directly to the words on the printed sheet, but will be following it as our guide to instruction. It is very important that you follow closely with me as we go through the instructions so that you will be able to respond to the test materials in the way they are intended. So, without further information about the test materials themselves,

I will proceed now and we will go through the instructions for Part 1. The purpose of this study is to explore ways people think about individual words and combination of words within a single statement. In Part 1 of this form, you will be presented a series of ideas made up of either two words or a series of words. In other words, a phrase. We want you to consider each of these ideas separately and judge them against a series of descriptive scales. We want you to make your judgments on the basis of what you feel about these ideas--what these ideas mean to you. There are no right or wrong answers. It is your personal opinion that you are to use to make your judgment about each of these words or phrases. These materials are not identified in any way so your responses to them are completely confidential. Let's look at how this works. Here I have the scale which appears on the sheet you have in front of you. You will notice at the top of the scale there is the word my friend and on the left side there is the word important and on the right side unimportant. There are seven spaces between those two adjectives. Another way to look at this scale is to see it in this manner. On the page, you will find that another scale has been devised which sets up the same sort of situation that we just discussed. The word my friend is at the top, on the left side of the scale is important, on the right side is unimportant. If you consider the word my friend and you think that my friend is very important, you would check

this marked here. You would check with an "X" right in the center of this space. If you think that my friend is very unimportant, then you would check this space over here. If you have no feeling about my friend in terms of importance or unimportance, you would check the middle space which is a neutral space. The second space in on both sides would be quite, which would mean quite important, or quite unimportant. The first space for neutral on either side would be a little important or a little unimportant. I think when we turn the page to the first white sheet, and let's do that now, let's turn the page to the first white sheet, and this is about what you will see. The word at the top will be different. In this case, I am using a policeman. Then, there are three sets of scales under the phrase or word that you have on your test materials in front of you. The first set would be admirable or deplorable, or deplorable - admirable, whichever the case may be. The second would be worthless - valuable, or valuable - worthless. The third would be good - bad, or bad - good. Again, there are seven spaces between each of these scales. Again, I ask that you consider the word at the top of the three scales and then consider each one of these, placing an "X" at the point on the scale which you feel would best indicate how you feel about the word or phrase at the top of the scale. There are three or four important things that you need to consider here. First of all, you check each of these scales. In other words, you should

have a check for the first, second, and third scales for each of the words or series of words that are listed on the pages in your test materials. There should only be one check on each one of these. In other words, if you feel that a policeman is very admirable, you would check here; if you thought he was very valuable, you would check here; if you thought he was very good, you would check here; or, if you felt neutral, you would check in the middle spaces. Remember now, one check on each of these three scales. Now, there are people in your room who are able to help you individually if you do not understand the instructions entirely. The leader developers would be able to help you, and there will also be room monitors stepping into your room who can answer questions if you have individual problems in responding to the material as I have explained it here in the studio. I believe that this is all the instruction you need for this part, so please start cheking each of the items on the white pages in your material until you come to the yellow page. At that point, please wait until I return to give you instructions for Part 2. You will have ample time--5 or 6 minutes is all it will take you to complete this part of the material. Thank you and go ahead and start on your work.

Now that you have had time to complete Part 1, you must move to Part 2. If, by chance, you did not have time to complete all of the first part, please stop where you are and listen to the instruction for the second part, get that, and

then go back and pick up on the first part wherever you left off. However, I believe most everyone is completed. Now, Part 2. Everybody turn to the yellow page, if you are not there, and we will begin on this. Part 2 is a little different. In Part 1, you rated a series of statements to indicate how you felt about their meaning. Part 2 is a little more difficult to understand, perhaps, but I am sure that as we work through this, it will become clear to you in the next few seconds. I'd like for you to turn the yellow page over and you will find, then, on the first white sheet something that looks very much like this one. In other words, at the top you will find No. 1, then you will find a No. 2, and then under No. 2 you will find an A, B, and C. This sheet is like the one that you have in your test materials and we will need to now consider each part of this so that you can proceed. So, let's first of all consider the Part 1 on Part 2. Merely consider this as a statement, how do you feel about something, in your materials. In this case, I have a policeman fighting crime. There are a series of scales from strongly disapproved to strongly approved and in your booklet you will find that there is a 1, 2, 3, 4, 5, 6, and 7 under this scale. If you strongly disapprove, you would check at this end, and if you strongly approve of this statement up here, you would check at this end. If you neither approve or disapprove, you would check about the 4 in the center of the scale. There is no problem on this. It is just a matter of

checking how you feel in terms of disapproving or approving of the statement that is at the top of the scale. Now, let's move to Part 2. This one is a little more difficult, perhaps, to understand and I think we can best do this by just reading through one of these. I will read one which is not in any of the test materials which you have in your room. It is like the ones you have in your test materials, but it is in form, but it is not in content. Let's take a look then at the No. 2 and read through one of these. This is what mine says: In rating a pliceman fighting crime the way you did, how important, that is, how much weight does the word fighting crime have in determining your rating of the statement, "A policeman fighting crime"? See, we are asking a question here for you to compare the second part of the statement with the total statement. The second question in this part is: Did you feel about the combination, a policeman fighting crime, the same way you felt about the words a policeman? See, now we have asked the second question, do you feel about the fighting crime part of the statement the same way you feel about the a policeman part of the statement. Estimate how much weight fighting crime and a policeman had in determining the way you actually rated the combination a policeman fighting crime. Let's turn to Part A of this section. Here, we find that Part A says my feeling about fighting crime, or whatever statement you have in your materials, completely, that is, 100 percent, determined the way I rated a policeman

fighting crime. Now, here you have two alternatives--you could say, yes, fighting crime did completely, 100 percent, determine how I rated the statement, a policeman fighting crime, or you could say, no, and if you checked yes, then you would go to Part B and you would not answer Part C. If you checked no for this section, for this particular statement, you would go to Question C and not answer Question B. This is pretty important that you get this clear. If you check yes, move to Question B. If you check no, move to Question C below. Let's take a look at the B part of this section. In this section, the statement is: In fact, my feelings about a policeman fighting crime are even more extreme than my feelings about other people fighting crime. Here, again, you have two alternatives. You can say, no, my feeling about A POLICEMAN FIGHTING and FIGHTING CRIME are about as equal strength, or yes, my feeling about a policeman fighting crime is even stronger than my feeling about other people fighting crime. Now, remember, if you checked yes above, you would be working on Part B, and if you checked no, you would have completed this. In other words, you would say that these two parts of the sentence are equal. If you would say, yes, I feel even stronger about the policeman than I do other people fighting crime, then you would have to indicate whether you feel slightly stronger, quite a bit stronger, much, much stronger in one of the three spaces below that. I indicated that if you checked no in Part A under 2,

that you would need to move to Part C. So, let's take a look at Part C and see what it looks like. Here we have the statement: My feeling about fighting crime did not completely determine my rating of the combination a policeman fighting crime. Indicate on the scale below how much you think each part of the statement influenced you. In other words, we have now two parts of the statement. We have a fighting crime on one of these scales and a policeman on the other scale. Each one of these scales go from zero to 100. Now, assuming that you had checked no under 2, you would need, then, to decide how much weight the policeman, or the first part of your statement, had and the second part of your statement had in determining how you rated the statement at the top of the page. So, you would determine which one of these percentages you think is the best guess as to how important it was in your rating of the statement. If you put an "X" at 20 on a policeman, then you would need to put an "X" at 80 on the fighting crime segment of the statement in order to make these two scales total to 100 percent. I think that this completes the information that you need to go through this. Again, I will indicate to you that there are people in your room who can help you understand this, if you do not completely understand it, and all you would need to do is hold up your hand and one of the leader developers or one of the room monitors would help you individually. So, go right ahead now and complete Part 2 of the materials. After you have completed

these, check them in with your leader developer and they will look through them so that they will know that you have completed them in the way expected.

Thank you very much for cooperating with me on this study. I appreciate it very much.