

## INFORMATION TO USERS

This was produced from a copy of a document sent to us for microfilming. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the material submitted.

The following explanation of techniques is provided to help you understand markings or notations which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting through an image and duplicating adjacent pages to assure you of complete continuity.
2. When an image on the film is obliterated with a round black mark it is an indication that the film inspector noticed either blurred copy because of movement during exposure, or duplicate copy. Unless we meant to delete copyrighted materials that should not have been filmed, you will find a good image of the page in the adjacent frame. If copyrighted materials were deleted you will find a target note listing the pages in the adjacent frame.
3. When a map, drawing or chart, etc., is part of the material being photographed the photographer has followed a definite method in "sectioning" the material. It is customary to begin filming at the upper left hand corner of a large sheet and to continue from left to right in equal sections with small overlaps. If necessary, sectioning is continued again--beginning below the first row and continuing on until complete.
4. For any illustrations that cannot be reproduced satisfactorily by xerography, photographic prints can be purchased at additional cost and tipped into your xerographic copy. Requests can be made to our Dissertations Customer Services Department.
5. Some pages in any document may have indistinct print. In all cases we have filmed the best available copy.

University  
Microfilms  
International

300 N. ZEEB RD. ANN ARBOR MI 48106



8212191

**Goldstein, Larry Samuel**

INDUCING RESISTANCE TO PERSUASION: AN ATTEMPT TO EXTEND  
INOCULATION THEORY TO A MARKETING CONTEXT

*City University of New York*

PH.D. 1982

**University  
Microfilms  
International** 300 N. Zeeb Road, Ann Arbor, MI 48106

**Copyright 1981**

**by**

**Goldstein, Larry Samuel**

**All Rights Reserved**



INDUCING RESISTANCE TO PERSUASION:  
AN ATTEMPT TO EXTEND INOCULATION  
THEORY TO A MARKETING CONTEXT

by

LARRY SAMUEL GOLDSTEIN

A dissertation submitted to the  
Graduate Faculty in Business in  
partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy  
The City University of New York

1981

© COPYRIGHT BY  
LARRY SAMUEL GOLDSTEIN

1981

This manuscript has been read and accepted for  
the Graduate Faculty in Business in satisfaction  
of the dissertation requirement for the degree  
of Doctor of Philosophy.

Dec. 16, 1981  
date

12/16/81  
date

David Bergson  
Chairman of Examining Committee

John J. Huppin  
Executive Officer

Professor Leon Schiffman

Professor Harris J. Shapiro

Professor Edward Wolf

Professor Morris Holbrook

Supervisory Committee

The City University of New York

## Abstract

### INDUCING RESISTANCE TO PERSUASION: AN ATTEMPT TO EXTEND INOCULATION THEORY TO A MARKETING CONCEPT

by

Larry Samuel Goldstein

Adviser: Professor Conrad Berenson

Considering the increase over the past 15 years in the number and kinds of attacks to which marketers' products have been subjected, the need to investigate methods that could effectively confer resistance to marketing persuasion is clear. The current study attempted to determine if inoculation theory could be applied to immunize individuals against marketing persuasion.

One hundred eighty-one Liberal Arts undergraduate students at Iona College, in New Rochelle, New York, participated in a two-stage experiment that was designed to test the following hypotheses:

1. Both supportive and refutational defenses are superior to a no-defense treatment in conferring resistance to persuasion;
2. A supportive defense is less effective than a refutational defense in conferring immunity to persuasion;
3. The primary effectiveness of the refutational defense rests in its ability to motivate the person to

develop defenses rather than in the material provided when the attack is refuted;

4-a. Immunity conferred by refutational defenses will not decay as rapidly as that conferred by supportive defenses;

4-b. Immunity conferred by refutational-different defenses will decay less rapidly than that conferred by refutational-same defenses;

5-a. Refutational defenses are superior to supportive defenses in inducing resistance to persuasion among those with high perceived self-consistency;

5-b. Supportive and refutational defenses are equally effective in inducing resistance to persuasion among those with low perceived self-consistency.

Also, the level of perceived risk attached to a product was examined to see if the research outcomes would be affected in some way by a product having either a low or high level of perceived risk.

In the experiment's first stage, subjects were exposed to printed defensive messages, dealing with tissues, orange juice, bandages, and videodisc players. In the second stage, conducted either two or seven days later, subjects were exposed to additional defensive advertisements and to advertisements attacking these products. Subjects' belief levels in the truth of 16 statements dealing with eight of the products' attributes were then

measured. The data did not support any of these hypotheses, but suggested that inoculation theory might be applicable for attributes which are not easily verifiable if the defensive measures explicitly forewarn against and refute attacking arguments.

## ACKNOWLEDGMENTS

The successful conclusion of the current research undertaking is due to many individuals. Without the cooperation of the professors at Iona College, who contributed class time for the conduct of the experiment and the students, themselves, who agreed to participate in the study, this research would have been impossible. To them all I offer thanks.

A special debt of gratitude is owed to Professors Conrad Berenson, Jack Shapiro, Edward Wolf and Leon Schiffman of the City University of New York, who served on the Dissertation Committee and provided incisive insight and encouragement, without which the work would not have been brought to fruition. Their help is greatly appreciated.

Thanks are due to Mrs. Margaret Martin, who typed the final manuscript, and whose sunny disposition was a source of joy through the years at City University.

But the ones who deserve the greatest share of my gratitude are my wife, Margaret, and my sons, Avram and Akiva, who, for many years, lent their support and encouragement, and made the completion of the work worthwhile. To them, I dedicate this paper.

## TABLE OF CONTENTS

|                                                                                  | Page |
|----------------------------------------------------------------------------------|------|
| LIST OF TABLES . . . . .                                                         | ix   |
| LIST OF FIGURES . . . . .                                                        | xi   |
| Chapter                                                                          |      |
| I      Introduction . . . . .                                                    | 1    |
| II     Inducing Resistance to Persuasion:<br>A Literature Review . . . . .       | 16   |
| III    Research Design and Methodology . . . . .                                 | 44   |
| IV    Results of the Study . . . . .                                             | 62   |
| V      Summary, Conclusions and<br>Recommendations . . . . .                     | 145  |
| Appendixes . . . . .                                                             | 162  |
| A      Research Design<br>Treatments Received on Each<br>Advertisement . . . . . | 163  |
| B      Advertising Copy . . . . .                                                | 168  |
| C      Opinion Survey . . . . .                                                  | 193  |
| D      Critique of the Experiment . . . . .                                      | 197  |
| E      Measure of Self-Consistency<br>Personality Test . . . . .                 | 199  |
| Bibliography . . . . .                                                           | 202  |

# LIST OF TABLES

| Table |                                                                                                                                                                                                                                                                   | Page |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 4-1   | Number and Type of Complaints Regarding Time Allowances Provided for Different Parts of the Experiment . . . . .                                                                                                                                                  | 63   |
| 4-2   | Respondents' Mean Level of Belief in Eight Product Attributes by Condition Code Number . . . . .                                                                                                                                                                  | 67   |
| 4-3   | Condition Numbers (C <sub>i</sub> ) Comprising Experimental Treatments by Product Attributes . . . . .                                                                                                                                                            | 75   |
| 4-4   | Test of Significant Difference Between Ratings of Condition Pairs by Product Attribute and Type of Defense . . . . .                                                                                                                                              | 83   |
| 4-5   | Test of Significant Difference Between Ratings of Pooled Supportive-Different Condition Pairs by Product Attribute Attacked . . . . .                                                                                                                             | 88   |
| 4-6   | Mean Belief Levels in Product Attributes for Neither Defense Nor Attack Conditions . . . . .                                                                                                                                                                      | 89   |
| 4-7   | One Way Analysis of Variance of Product Attribute Belief Levels Among Condition Codes in the 'Neither Defense Nor Attack' Treatment . . . . .                                                                                                                     | 91   |
| 4-8   | Analysis of Variance of Belief Levels in Product's Attributes by Type of Defense (Supportive-Same vs. No Defense), Interval Between Defense and Attack (Two Days and Seven Days) and Exposure to Two of A Product's Attributes . . . . .                          | 93   |
| 4-9   | Analysis of Variance of Belief Levels in Product's Attributes by Type of Defense (Refutational-Same vs. Refutational-Different), Interval Between Defense and Attack (Immediate, Two Days and Seven Days) and Exposure to Two of A Product's Attributes . . . . . | 101  |

# List of Tables (continued)

| Table |                                                                                                                                                                                                                                             | Page |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 4-10  | Analysis of Variance of Belief Levels in Product's Attributes by Type of Defense (Refutational-Same vs. Refutational-Different), and Interval Between Defense and Attack (Immediate, Two Days and Seven Days) . . . . .                     | 105  |
| 4-11  | Analysis of Variance of Belief Levels in Product's Attributes by Type of Defense (Supportive-Same vs. No Defense) and Interval Between Defense and Attack (Two Days and Seven Days) . . . . .                                               | 107  |
| 4-12  | Test of Significant Difference Between Ratings of "Neither Defense Nor Attack" (NDNA) and "No Defense" (ND) Treatments by Product Attribute . . . . .                                                                                       | 110  |
| 4-13  | Test of Significant Difference Between Ratings of the Supportive-Different and No-Defense Treatments by Product Attribute . . . . .                                                                                                         | 114  |
| 4-14  | Test of Significant Difference Between Ratings of the Refutational and No-Defense Treatments by Product Attribute . . . . .                                                                                                                 | 116  |
| 4-15  | Respondents' Mean Level of Belief in Eight Product Attributes by Level of Perceived Self-Consistency and by Condition Code Number . . . . .                                                                                                 | 120  |
| 4-16  | Test of Significant Difference Between Ratings of "Neither Defense Nor Attack" (NDNA) and "No Defense" (ND) Treatments by Product Attribute and Level of Perceived Self-Consistency . . . . .                                               | 137  |
| 4-17  | Analysis of Variance of Belief Levels in the Advantage Attribute of the RCA Videodisc Player on the Part of Respondents with High Level of Perceived Self-Consistency, by Type of Defense and Interval Between Defense and Attack . . . . . | 139  |

## LIST OF FIGURES

| Figure |                                                                                                                                     | Page |
|--------|-------------------------------------------------------------------------------------------------------------------------------------|------|
| 4-1    | Mean Belief Levels<br>Band-Aid Bandages - Skin Tight Attribute<br>Third Order Interaction<br>(Defense x Attribute x Time) . . . . . | 98   |

## CHAPTER I

### INTRODUCTION

Much research in the area of persuasion has focused on factors that increase persuasive effectiveness. According to one conservative estimate, close to 1,000 studies dealing with persuasive communication are abstracted yearly in Psychological Abstracts alone.<sup>1</sup> Considering, though, the popular use of comparative advertising, in which advertisers attack competitive products by claiming superiority over those products in one or more attributes, and the frequent use of the Federal Trade Commission (FTC) of the corrective advertising remedy, by which advertisers are compelled to attack their own products by retracting prior claims which the FTC has found to have been deceptive, it is surprising that so relatively little research has focused on possible ways to confer resistance to persuasive communications, particularly within a marketing context. Furthermore, when one considers that during the maturity stage of a product's life cycle a marketer's customers may respond to competitors' persuasive activities by switching to products which often are neither significantly different from nor better than what they had been using,<sup>2</sup> the need to investigate methods that could effectively confer resistance to persuasion becomes all the more striking.

### The Nature of Persuasion

In writing about persuasion, many authors seem to assume that the reader knows what persuasion is and, consequently, they do not bother to define the term. Unfortunately, the intuitive meaning of persuasion often goes beyond what the term means in an advertising context. Among the definitions of the word persuade is "to induce (someone) to believe something; to convince."<sup>3</sup> Essentially, if an advertiser's efforts at persuasion are to be successful, the advertiser must operate on one's beliefs or opinions about what is being advertised. The advertiser can modify one's beliefs or opinions either by limiting the number of options the consumer should consider or by extending them.

For example, suppose someone is considering purchasing a new car and is leaning toward an imported foreign car as a result of advertising which has persuaded him that foreign cars get better mileage than domestic cars. In this instance, the advertising has limited the number of options the consumer should consider by excluding domestic cars from purchase consideration.

Suppose, at this point, that the individual is exposed to advertising which states that because domestic cars are better produced than foreign cars, they are safer to drive.

If, in making the purchase decision, this person considers the attribute, safety, in addition to the attribute, better mileage, one can say that he has been "persuaded" by advertising which has extended the number of options to be considered. That is, he now includes domestic cars among his purchase candidates. Even if our hypothetical consumer subsequently purchases a foreign car, the fact that he believed that he should consider the safety factor before making a purchase decision means that the safety advertising was persuasive.

To summarize, persuasion affects one's beliefs or opinions about something by either extending one's options (consider the safety factor, as above), or limiting them (exclude low mileage domestic cars, as above).

#### Persuasion and the Mass Media

Since the publication of Russell Colley's work,<sup>4</sup> advertising goals have been often formulated as communications goals: advertisers provide consumers with information. Sometimes the information is objective and rational; sometimes it is subjective and emotional, to move consumers through the stages preceding purchase in the "hierarchy-of-effects" model,<sup>5</sup> the stages of awareness, knowledge, liking, preference and conviction.

Typically, information is provided to consumers by means of the mass media--print and broadcast. To the

extent that consumers receive the information and use it in the formation of their opinions about the advertised product, they are persuaded by mass media advertising, in the sense described previously.

### Objectives of the Study

The general purpose of the current study was to investigate whether or not it is possible to create resistance to persuasive marketing communications. Resistance to persuasion involves maintaining one's belief or opinion about something in the face of compelling reasons to change that belief. As such, it, too, is persuasion, as it attempts to limit one's options by excluding the compelling reasons from consideration.

A number of resistance conferring theories have been formulated and will be discussed in Chapter II. Of these theories, only one was both based on the communication of information and consistent with the nature of persuasion presented above. This was the theory of inoculation, first developed by William J. McGuire, which is the focus of the current study.

The "theory of inoculation" has been demonstrated to be effective in bestowing resistance to persuasive communications dealing with cultural truisms, or beliefs that are universally held in our society. The question this

study addresses is whether the inoculation theory can be extended to beliefs that have been created by marketing communications.

The inoculation theory of inducing resistance to persuasion stems from a biological analogy. In the biological situation, a person is made resistant to some attacking virus by pre-exposure to a weakened dose of the virus. This mild dose stimulates the person's defenses, enabling him to overcome any massive viral attack to which he is later exposed. But this dose is not so strong that the pre-exposure will itself cause the disease.

Alternatively, biological resistance can be conferred by supportive therapy such as sufficient rest, a proper diet, and vitamin supplements. However, inoculation is likely to be superior to supportive therapy to the extent that the person has previously been brought up in a germ-free environment, because such an individual is highly vulnerable when suddenly exposed to massive doses of the disease virus.<sup>6</sup>

In order to use the inoculation analogy to derive hypotheses about producing resistance to persuasion, McGuire, who first formulated the theory of inoculation, dealt, as far as possible, with beliefs that had been maintained in a "germ-free" ideological environment; that is, beliefs that the person has seldom, if ever, heard attacked and would

probably believe to be impossible to attack. These beliefs were cultural truisms dealing with health issues.<sup>7</sup>

Just as biological resistance to a viral attack could be induced either by supportive therapy or by inoculation, McGuire reasoned that resistance to a persuasive attack on certain health beliefs could be conferred either by providing reasons supporting the beliefs (supportive defenses) or by pre-exposing persons to arguments against the beliefs, but weakening the arguments by simultaneously refuting them (refutational defenses). And just as biological inoculation is superior to supportive therapy in producing resistance to a viral attack, McGuire reasoned that the refutational defense should be superior to the supportive defense in inducing resistance to a persuasive attack on the cultural truisms.

Although the theoretical basis for McGuire's inoculation approach to inducing resistance to persuasion will be discussed in detail in Chapter II, it should be apparent that the applicability of his theory may be limited by his concentration on cultural truisms. In the marketing milieu, such truisms are virtually non-existent.

In spite of the fact that there is little, if anything, within a marketing context that approaches cultural truisms, there is reason to believe that individuals may not be consciously aware of messages that attack the beliefs they hold.

The postulate of selective exposure asserts that people selectively seek information to support their beliefs and selectively avoid information that is contrary to those beliefs.<sup>8</sup> Thus, even though marketing-related beliefs are often under attack, people holding those beliefs may screen out the dissonant information. As a result, as far as the individual's conscious awareness is concerned, these beliefs, like cultural truisms, are "seldom, if ever, attacked." Under these conditions, it is proper to inquire if inoculation theory is applicable within a marketing context.

In addition, intellectual curiosity has often been responsible for expanding the boundaries of what were thought to be specialized theories, and it was the purpose of this writer to see if the narrow boundary of McGuire's inoculation theory can be similarly expanded by testing his theory in a marketing milieu.

#### Significance of the Study

The current study is significant in a number of ways. First, the study should be significant to marketers as it might provide them with an effective advertising strategy to reduce the impact of competitors' comparative advertising, and to possibly extend the maturity stage of their products' life cycles.

Second, the extent to which inoculation theory can be generalized beyond the case of cultural truisms

has not yet been satisfactorily determined.<sup>9</sup> By investigating one area where the theory might have applicability, the current study should be of interest to scholars by possibly suggesting other areas where the theory can be applied to induce resistance to persuasion.

Third, the study should be important to the FTC by alerting it to how an advertiser required to engage in corrective advertising might moderate the effectiveness of such advertising.

### Scope and Limits of the Study

#### A. Scope

This study attempted to examine inoculation theory in a marketing context. As McGuire's experimental methodology has been deemed sound to test inoculation theory within the framework of cultural truisms, it was used in the current study to test the theory within a marketing framework. (See Chapter III and Appendix A).

The present study evaluated the following hypotheses:

- H<sub>1</sub> - Superiority of Defensive Treatments. Both supportive and refutational defenses are superior to a no-defense treatment. The rationale of this hypothesis is based on the fact that both types of defense provide material that gives credence to the advertising claim, thus mitigating the subsequent attack. Where such material is not provided, the impact of the attack should be much stronger.

H<sub>2</sub> - Supportive versus Refutational Defenses.

A pretreatment that consists of arguments supporting the advertising claim (supportive defense) is less effective than a pre-treatment which first attacks the claim and then refutes the attacks (refutational defense). Hypothesis H<sub>2</sub> was drawn directly from McGuire's work and its rationale is discussed in Chapter II.

H<sub>3</sub> - Importance of the Motivating Aspect of the Refutational Defense. The primary effectiveness of the refutational defense rests in its ability to motivate the person to develop defenses rather than in the material provided when the attack is refuted. Hypothesis H<sub>3</sub> was drawn directly from McGuire's work and its rationale is discussed in Chapter II.

H<sub>4</sub> - Persistence of the Induced Resistance to Persuasion.

- a. Immunity conferred by refutational defenses will not decay as rapidly as that conferred by supportive defenses.
- b. Immunity conferred by refutational-different defenses will decay less rapidly than that conferred by refutational-same defenses. Hypothesis H<sub>4</sub> was drawn directly from McGuire's work and its rationale is discussed in Chapter II.

H<sub>5</sub> - Perceived Self-Consistency and Induced Resistance to Persuasion.

- a. Refutational defenses are superior to supportive defenses in inducing resistance to persuasion among those with high perceived self-consistency.

- b. Supportive and refutational defenses are equally effective in inducing resistance to persuasion among those with low perceived self-consistency.

The rationale for this hypothesis is as follows: As personality types often play a significant role in marketing phenomena (e.g., risk takers versus risk avoiders in home shopping behavior), it seems logical to expect that the predictive value of inoculation theory might vary for different personalities. Since it was necessary to disguise the true purpose of the study (see Chapter III), a personality test was administered to the respondents which measured perceived self-consistency.

A person with high perceived self-consistency has a need to reconcile things perceived as contradictory. Thus, such a person might find an attacking message to be dissonance-arousing. In this instance, a refutational defense which alerts the individual to a possible attack and provides material to counter it should be more effective in reducing induced dissonance than a supportive defense which does not forewarn the individual of a possible dissonance-arousing situation.

On the other hand, a person with low perceived self-consistency is not uncomfortable with things perceived as contradictory and, thus, might not consider an attacking message to be dissonance-arousing. In this instance, both supportive and refutational defenses should be equally effective in inducing resistance to persuasion.

Since this study used messages designed as print advertisements for consumer goods, the finding that risk perception varies by product category<sup>10</sup> was incorporated into the research design. Because consumers are often not certain about the outcomes of particular purchase decisions, they perceive varying levels of risk inherent in different classes of products. For example, the level of perceived risk for headache remedies was found to be higher than that for spaghetti.<sup>11</sup>

Even though inoculation theory does not provide a basis from which to predict how any of the research outcomes might be affected by the level of perceived risk attached to a product, it seems reasonable that perceived risk could affect the outcomes in some way. Specifically, one of the strategies consumers employ to reduce perceived risk is to seek information about the product from advertising. It could be that an attack on a product with a high level of perceived risk might serve to reinforce the perceived risk and, thus, overwhelm the impact of any defensive message. Or, possibly, the refutational defense might neutralize the attack by demonstrating that the attack can be refuted, but the supportive defense might be overwhelmed by the attack. Regarding products with a low level of perceived risk, it could be that an attacking message will increase the amount of perceived risk, in which case the refutational defense

might be superior to a supportive defense in inducing resistance to the attacking message.

Consequently, the level of perceived risk attached to a product was among the independent variables in the research design. Specifically, two levels of perceived risk were employed--extremely low and high. Three products with extremely low levels of perceived risk and one product with a high level of perceived risk were the subjects of the defensive and attacking messages.

Since risk perception was included in the study only on an exploratory basis, no specific hypotheses involving inoculation and risk perception were formulated. For this reason, too, only one product with a high level of perceived risk was used in the study.

#### B. Limits

Because of the requirements of the experimental design that was used, viz., two meetings with a large total sample, the subjects chosen were undergraduate Liberal Arts students enrolled at Iona College, in New Rochelle, New York, where the writer is an Assistant Professor of Marketing. Also, because of the time and expense involved in creating the requisite number of advertisements (24), print advertisements, rather than broadcast advertisements, were used.

The copy for the print advertisements were straightforward and of approximately equal length. (See Appendix B).

The sources of the attacking messages were non-profit consumer agencies or testing laboratories of equal credibility. The sources of the defensive messages were consumer goods companies that are leaders in their fields. Although it would be interesting to test inoculation theory with messages of different lengths, with attacking messages that are not objective and, hence, not of equal credibility (e.g., messages by competitors) and with defending sources that differ in their market standing, to do so in the current research would have made the research design unnecessarily complex and would have required a significantly larger sample size, both of which are beyond the time and cost constraints of the current study.

#### Organization of the Balance of the Dissertation

##### Chapter II, Inducing Resistance to Persuasion:

A Literature Review, will review a number of approaches to inducing resistance to persuasion that pre-dated McGuire's inoculation theory. It will then set forth inoculation theory and McGuire's efforts to test the theory. Finally, it will present a review and analysis of prior attempts to extend inoculation theory to a marketing context.

Chapter III, Research Design and Methodology, will present the details of the design of the current experiment and the procedures that were implemented in carrying out the research.

Chapter IV, Results of the Study, will present the findings of the study and the results of the tests of the above five hypotheses.

Chapter V, Summary, Conclusions and Recommendations, will review the objective of the current study and its findings. It will assess the implications of the study and present recommendations for further study.

## FOOTNOTES

1. William J. McGuire, "Persuasion, Resistance and Attitude Change," Handbook of Communications, Eds. Ithiel de Sola Pool, et al. (Chicago, Illinois: Rand McNally College Publishing Company, 1973), p. 244.
2. Stewart W. Bither, Ira J. Dolich and Elaine B. Nell, "The Application of Attitude Immunization Techniques in Marketing," Journal of Marketing Research (February 1971), Vol. 8, No. 1, p. 56.
3. Webster's New Twentieth Century Dictionary, 2nd ed. Unabridged (William Collins Publishers, Inc., 1979).
4. Russell H. Colley, Ed. Defining Advertising Goals (New York: Association of National Advertisers, 1961).
5. Robert J. Lavidge and Gary A. Steiner, "A Model for Predictive Measurements of Advertising Effectiveness," Journal of Marketing (October 1961), Vol. 25, No. 6, p. 61.
6. William J. McGuire, "Inducing Resistance to Persuasion," Advances in Experimental Social Psychology, Vol. 1, Ed. Leonard Berkowitz (New York: Academic Press, 1964), p. 200.
7. Ibid., pp. 200-201.
8. Elihu Katz, "On Reopening the Question of Selectivity in Exposure to Mass Communications," Theories of Cognitive Consistency: A Sourcebook, Eds. Robert P. Abelson, et al. (Chicago, Illinois: Rand McNally and Company, 1968), p. 789.
9. Samuel Himmelfarb and Alice H. Eagly, "Orientations to the Study of Attitudes and Their Change," Readings in Attitude Change, Eds. Samuel Himmelfarb and Alice H. Eagly (New York: John Wiley and Sons, Inc., 1974), p. 47.
10. Michael Perry and B. Curtis Hamm, "Canonical Analysis of Relations Between Socioeconomic Risk and Personal Influence in Purchase Decisions," Journal of Marketing Research (August 1969), Vol. 6, No. 3, p. 352.
11. Scott Cunningham, "The Major Dimensions of Perceived Risk," Risk Taking and Information Handling, Ed. Donald F. Cox (Boston, Massachusetts, Division of Research, Graduate School of Business Administration, Harvard University, 1967), pp. 82-108.

## CHAPTER II

### INDUCING RESISTANCE TO PERSUASION: A LITERATURE REVIEW

Prior to inoculation theory, no research was done to specifically determine how to induce resistance to persuasion.<sup>1</sup> There were, however, several theories of attitude change which had implications concerning how one might induce such resistance. These theories fell into four broad categories which have been characterized by McGuire as follows: the behavioral commitment approach, anchoring the belief to other cognitions, inducing resistant cognitive states, and prior training in resisting persuasive attempts. This chapter will present a brief review of these approaches and several of their variations.<sup>2</sup> Following this review, McGuire's theory of inoculation will be presented, along with his efforts to test the theory. The chapter will conclude with an analysis of prior attempts to extend inoculation theory to a marketing context.

#### Inducing Resistance to Persuasion: Approaches Based on Attitude Change Theory

##### A. The Behavioral Commitment Approach

This approach involves an individual's taking an irrevocable step on the basis of his belief, thus committing himself to it. To the extent that commitment makes

changing the belief dangerous, costly, awkward, or harmful to self-esteem, it strengthens the individual's tendency to resist social influence attempts aimed at the belief. The committing behavior may comprise coming to a private decision regarding the belief, stating the belief publicly, taking some action on the basis of the belief, and having external commitment to the belief.

1. Private Decision. A significant tendency was found for subjects to persist longer in their beliefs if they are asked to come to a private decision regarding those beliefs.<sup>3</sup> This enhanced persistence may be interpreted as an increased resistance to countervailing pressures to change the belief.

2. Public Announcement of One's Belief. A number of experimenters found that even more resistance to subsequent persuasive attempts followed a public rather than a private statement of one's beliefs.<sup>4</sup>

3. Active Participation on the Basis of the Belief. Different ways to get a person to commit himself to a belief by taking some further action on the basis of the belief have been studied. One way is to have an individual overtly defend a belief by writing an essay or delivering a speech in support of it. McGuire found this technique to be quite effective.<sup>5</sup>

4. External Commitment. It has been found that if a person is committed to a belief externally, e.g., if he is

told that someone else thinks he holds that belief, the person does, in fact, show an increased adherence to the belief.<sup>6</sup>

The behavioral commitment approach to inducing resistance to persuasion is of some value in marketing. Thus, when a salesperson gets an individual to order a particular item, the individual has made a public commitment regarding that item. If, subsequently, the individual decides he does not want the item, he is not likely to tell the salesperson he no longer wants it. Most likely he will purchase the item in spite of his second thoughts or, if he does not purchase the item, he will offer substantial reasons to the salesperson for his change of mind.<sup>7</sup>

Purchase, itself, is a public commitment, as other household members may use the product and friends may notice the product's brand name. Generally, however, public commitment is not enduring as can be seen by the fact that brand switching is a reality of the marketplace.

B. Anchoring the Belief  
to Other Cognitions

The approaches to inducing resistance to persuasion in this area attempt to link the belief in question to other cognitions, or at least to sensitize the individual to the fact that such links exist. In this way it becomes more difficult for the person to change his belief as such

a change would require changing all his linked beliefs correspondingly. Were he not to do this, he might find himself suffering the discomfort of cognitive inconsistency.

Anchoring approaches differ regarding the type of cognitions to which a given belief is to be linked.

1. Linking to Accepted Values. It has been suggested that a belief is held firmly to the extent that it is perceived as instrumental in attaining positively valenced goals (goals towards which one is inclined) or as facilitating avoidance of negatively valenced goals (goals away from which one is inclined).<sup>8</sup> Thus, an individual's adherence to a belief would be strengthened by any pretreatment that strengthened his perception that his belief did have such a linkage to valenced goals. In this way, the person would be made more resistant to subsequent pressures to change that belief.

2. Linking to Other Beliefs. It has been theorized that sensitizing a person to the fact that a given belief is logically related to many beliefs which he holds will make him adhere to that belief more strongly. This is so because were this belief to be changed, a whole series of imbalances would be introduced into his cognitive system which may cause psychological discomfort. McGuire found that merely asking a person to rehearse the related beliefs which he already possesses makes these linkages to the given belief more salient and thus confers increased resistance

to subsequent attacks, at least to the extent that such attacks would introduce inconsistencies into the person's belief system.<sup>9</sup>

### 3. Linking to Valenced Sources and Reference Groups.

In this approach the given belief is tied to positively valenced sources of one kind or another (i.e., sources to which an individual is attracted). The underlying assumption is that if the believer is made to see that his opinion is shared by others whom he values highly, the opinion will be more resistant to subsequent attacks. The importance of this "source" variable in persuasion has been often demonstrated. It has been shown that resistance to subsequent attacks can be conferred by anonymous individuals and groups,<sup>10</sup> positively valenced reference groups,<sup>11</sup> and highly regarded specific individuals.<sup>12</sup>

Anchoring approaches to inducing resistance to persuasion are of limited value in marketing. Advertisers often attempt to link beliefs about their products to celebrities and well-known individuals or groups by having these sources deliver testimonials about their products. One of the difficulties involved in this strategy, though, is finding the right link, i.e., a person (or group) who is liked and believed by the advertiser's target market, and who is perceived as having a logical relationship to the advertised product (other than being a paid spokesperson).

Generally, the difficulty of finding the right linkages for masses of consumers is what limits the wide use of anchoring approaches to inducing resistance to marketing persuasion.

### C. Inducing Resistant Cognitive States

It has been suggested that certain personality, motivational or ideological states are correlated with resistance to social influence pressures. Thus, any treatment that induces such states in the believer should enhance his resistance to persuasion.<sup>13</sup> Despite extensive work in this area, few states have been discovered which are generally effective in predisposing a person to resist persuasion. Among the states examined are anxiety, aggressiveness, and high or low self-esteem.

1. Inducing Anxiety About the Issue. Much research on the use of fear-arousing appeals in persuasion has been based on the idea that when anxiety is attached to a given issue, the person is subsequently inclined to avoid the topic. It follows that he would avoid exposure to subsequent messages (including those attacking his position) on the issue and, consequently, such messages should have little influence on him. The research in this area has not been conclusive. It has been found that people admit they are less willing to receive further information on a topic about which they had read an anxiety-arousing message.<sup>14</sup> On the other hand,

others have found that the greater the prior anxiety arousal, the less resistance to a subsequent attack on the issue.<sup>15</sup>

2. Inducing Aggressiveness. One might expect that a person who has been made hostile to others would be more resistant to those others' influence attempts. Although several studies indicate that chronic hostility is associated (at least in males) with resistance to persuasion,<sup>16</sup> others have shown that the result of inducing aggressiveness is to increase the person's resistance to benevolent arguments, but to make him more susceptible to misanthropic arguments.<sup>17</sup>

3. Raising Self-Esteem. Probably the most successful demonstrations of induced resistance to persuasion by means of "personality restructuring" are those in which the person's self-esteem is manipulated. Several researchers have shown that a prior successful experience enhances the believer's resistance to subsequent social influence attempts.<sup>18</sup>

Inducing resistant cognitive states may be useful in some circumstances, but is often too difficult to accomplish in reality. Thus, a salesperson might make a customer hostile toward a competitor by denigrating it, but it is unlikely that the salesperson's firm would publicly defame the competition unless it were indifferent to the prospect of defending an unfair competition or trade libel action.

The fact that few states have been discovered that could effectively predispose persons to resist persuasion and the difficulty of inducing those resistant cognitive states that are known on a large scale (e.g., through the mass media) limit the value of this approach to inducing resistance to marketing persuasion.

D. Prior Training in Resisting Persuasive Attempts

Different kinds of educational procedures have been suggested that would enhance one's ability to adhere to a belief when subsequently confronted with influence attempts. The most frequently used method involves general education. It has been claimed that with better education a person becomes more resistant to persuasion. However, research does not consistently support such a proposition. There does not seem to be a clear, inverse relationship between education and resistance to suggestion. There is some evidence that the more intelligent are more resistant to conformity pressures from peers,<sup>19</sup> but they seem to be more susceptible to the mass-media kind of persuasion attempts.<sup>20</sup>

Conceivably, training specifically tailored to reduce susceptibility to persuasion might be effective. One type of such training would enhance the selective avoidance or perceptual distortion of information that is at variance with one's beliefs. Perceptual distortion has been shown to facilitate resistance to persuasion.<sup>21</sup> However, such

training has an aura of unhealthiness.<sup>22</sup> A more desirable type of specific pre-training involves enhancing one's critical capacities so that he will be able to recognize and discount persuasive attempts. It has been shown that training in the critical evaluation of propaganda can increase a person's resistance to such material when it is subsequently encountered.<sup>23</sup>

Inoculation theory can be characterized as an outgrowth of this fourth approach to enhancing resistance to persuasive attempts. The part of McGuire's work which forms the basis of the next section of this dissertation was basically an attempt to probe into the immunizing effectiveness of prior training.

#### Inducing Resistance to Persuasion: Inoculation Theory

Inoculation theory, as proposed by McGuire, states that a person's belief can be made resistant to subsequent attack by exposing the person to a specific pre-treatment, viz., a weakened form of the attack. McGuire researched inoculation theory by using "cultural truisms," or beliefs that are so widely shared within a person's environment that he would not have heard them attacked and would probably doubt that they could be attacked. Cultural truisms were chosen so that McGuire could make heuristic use of the analogy with biological inoculation in deriving hypotheses about producing resistance to persuasion. Such

truisms would approximate the health status of an organism raised in a germ-free environment.<sup>24</sup> After much pretesting, he found that health beliefs abounded in almost unanimously accepted propositions such as, "It's a good idea to brush your teeth after every meal if at all possible," "Mental illness is not contagious," "The effects of penicillin have been, almost without exception, of great benefit to mankind," and "Everyone should get a yearly chest x-ray to detect any signs of TB at an early stage."<sup>25</sup> These truisms were used in McGuire's experiments as the beliefs to be made resistant to persuasion by methods derived analogously from biological inoculation.

#### Assumptions Underlying the Theory

McGuire assumed that pretreatments designed to make truisms resistant to subsequent attacks would be effective to the extent that they could overcome the believer's being unpracticed in defending his belief and unmotivated to undertake the necessary practice. One is unpracticed because he has never been required to defend the belief and unmotivated to start practicing because he considers the belief unassailable. Thus, any pretreatment designed to improve the believer's defenses must motivate him to develop a defense of a truism whose validity he considers obvious. Such motivation can be provided by making him aware of the vulnerability of the truism. It

follows that, to be effective, the prior defense of a truism should be threatening rather than reassuring about the belief. One way of threatening him is by pre-exposure to weakened forms of the attacking arguments.

Supplying motivation is necessary but not sufficient for an effective defense. Because of the believer's lack of prior practice, he may be unable to bolster his belief sufficiently unless he is given guidance in developing defensive material or, if he is required to develop such material on his own, he is given considerable time to do so.

Following these assumptions, McGuire derived a number of predictions about the relative immunizing effectiveness of various kinds of prior defenses and the persistence (effectiveness over time) of the resistance induced by the different kinds of prior defenses. Before identifying the relevant hypotheses and reviewing the supporting research, a discussion of the basic variables involved in the research is presented.

#### The Defensive Variables

Two basic types of defenses were used in the research, "supportive" and "refutational," which differed in the amount of threat they contained. The supportive defense was not threatening, and consisted of giving the believer various arguments in support of the truism. The refutational defense was threatening. Instead of supporting the truism, it mentioned several arguments attacking the belief and then

proceeded to refute them. McGuire felt that this pre-exposure would be sufficient to threaten the believer into devising defenses for his belief, but not so strong as to overwhelm the truism.

The refutational defense, considered in relation to the subsequent attacks, was one of two types. Either it mentioned and refuted the same arguments against the truism that were to be used in the subsequent attacks (refutational-same defense) or it mentioned and refuted arguments different from the ones to be used in the attacks (refutational-different defense). McGuire used the latter two defensive variations to determine if any increased resistance to persuasion derived from the generalized motivational effect of the threatening mention of the arguments against the truism or from the useful defensive material provided directly by the refutations. (See Hypothesis Two, below).<sup>26</sup>

#### The Interval Between the Defense and the Attack

In order to determine the effect of time on the persistence to attack induced by different types of defenses, McGuire varied the interval between the defense and the attack in all of his experiments. The interval ranged from a few minutes to one week. An examination of how the different intervals appeared to affect the various outcomes suggested that the persistence predictions could be tested by varying the time parameter over three settings: attack

follows immediately after the defense, two days after the defense, or seven days after the defense.<sup>27</sup>

### Hypotheses and Research

Hypothesis One: Supportive vs. Refutational Defenses ( $H_2$  in the current study). A pre-treatment that consists of arguments supporting the truism (supportive defense) is less effective than a pre-treatment which first attacks the belief and then refutes the attacks (refutational defense).

A supportive defense provides the material and information needed by a person to construct and practice a defense if he were motivated. However, unthreatened individuals will not be motivated to assimilate and practice the material since they believe that the truisms are unassailable. The refutational defense, though, both motivates the person by virtue of the threat contained in the attacking argument and also provides him with some material for practice when the attack is refuted to bolster his belief.

Research. McGuire and Papageorgis<sup>28</sup> conducted an experiment with 130 freshman undergraduates, in which subjects were told that the experiment was a study of the relationship between reading and writing skills. In the first of two one-hour sessions, one-half of the subjects were presented with arguments supporting cultural truisms, while the other half were exposed to arguments against the truism, together with

refutations of these arguments. In the second session two days later, subjects were exposed to strong counter-argument messages attacking the beliefs.

The researchers found that the more threatening, refutational defense was clearly superior to the supportive defense in conferring resistance to the subsequent attacks, confirming Hypothesis One. Not only was the supportive defense much less effective than the refutational defense in conferring resistance, but it was also not even significantly higher than a no-defense, attack only condition. Thus, the supportive defense was not shown to be effective at all.

Hypothesis Two: Importance of the Motivating Aspect of the Refutational Defense ( $H_3$  in the current study). The primary effectiveness of the refutational defense rests in its ability to motivate the person to develop defenses rather than in the material provided when the attack is refuted.

If, in fact, the refutational defense derives its immunizing effectiveness from the motivation-stimulating threatening mention of arguments against the truism, then its effectiveness should be general and manifested even against attacks using novel arguments, i.e., arguments different from those refuted in the defense. On the other hand, if the immunity to persuasion produced by the refutational defense is created by the specific defenses provided when the threat

is refuted, the immunization should be ineffective against novel arguments.

Research. Papageorgis and McGuire<sup>29</sup> conducted an experiment with 73 undergraduates. In the first of two sessions, one-half of the subjects were given refutational-same defenses of truisms, while the other half were given refutational-different defenses. In the second session, one week later, subjects were exposed to strong counterargument messages attacking the beliefs.

The researchers found that the refutational defenses conferred appreciable resistance to the attack and that the resistance to novel attacks that was produced was not significantly less than the resistance to attacks by the same arguments that were refuted. This confirmed Hypothesis Two, that the effectiveness of the refutational defense lies in the motivating aspect of the threat in contrast to the information content of the supporting refutations.

Hypothesis Three: Persistence of the Induced Resistance to Persuasion ( $H_4$  in the current study).

- (1) Immunity conferred by refutational defenses will not decay as rapidly as that conferred by supportive defenses.
- (2) Immunity conferred by refutational-different defenses will decay less rapidly than that conferred by refutational-same defenses.

Considering the two postulated mechanisms by which defenses induce resistance, the threatening component which

supplies the needed motivation to obtain or assimilate belief bolstering material and the belief bolstering material contained in the defense itself, McGuire assumed the former mechanism manifests a non-monotonic (rising and then falling) trend over time, while the latter mechanism displays a monotonic (falling) trend over time.

Regarding the threatening mechanism, for some time after receiving the threat the person continues to accumulate belief bolstering information, producing increasing resistance to persuasion. After a while, though, as the threat recedes, the induced motivation to accumulate belief bolstering material will itself tend to decay. The result of these two tendencies is a non-monotonic time trend for the typical biological inoculation where several days or weeks must pass after exposure to the weakened inoculation dose before the resistance builds up to its full strength, after which it tends to decay gradually.

By contrast, the second resistance-conferring mechanism, the actual communication of belief bolstering material in the defense, shows a simpler relationship to time. Since the resistance conferred by this mechanism is a direct function of the retention of the bolstering material, its decay should follow the ordinary forgetting curve.<sup>30</sup>

Since the different defenses involve the two above mechanisms to different extents, they should manifest

different persistence effects. (1) Supportive defenses confer resistance solely on the basis of the direct communication of belief bolstering material and should show monotonic persistence effects, i.e., the persistence of resistance effects should drop regularly over time. Refutational defenses confer resistance, in large measure, from the threat induced motivation to bolster one's defenses which should show non-monotonic persistence effects, i.e., the persistence of resistance effects should first increase and then decrease over time. Since this non-monotonic effect will partially offset the monotonic effect of the belief bolstering material component of refutational defenses, the immunity conferred by these defenses will decay less rapidly than that conferred by supportive defenses. (2) Refutational-different defenses depend mainly on their threatening component for their effectiveness as they do not provide belief bolstering material that can counter an attack. Therefore, they should manifest non-monotonic persistence effects. Refutational-same defenses depend upon both of the above mechanisms and should show a persistence effect that is the composite of the non-monotonic and monotonic trends. Specifically, the initial persistence effect is relatively steady as the non-monotonic trend increases, and the monotonic trend decreases. After some time, though, the persistence effect will drop off markedly as both trends turn downward

Consequently, the immunity conferred by refutational-same defenses will decay more rapidly than that conferred by refutational-different defenses.

Research. McGuire<sup>31</sup> conducted an experiment with 160 undergraduate students in which subjects were told that the experiment was a study of the relationship between personality and verbal skills. The experiment was conducted in two sessions that were either two or seven days apart. The design included four blocks of subjects. Those in the first block received four refutational defenses, two in the first session two days before the attacks, and two in the second session immediately before the attacks. In each session one defense was refutational-same and one was refutational-different. Subjects in the second block received the same treatment as those in the first block except that the time between sessions was seven days instead of two days. Subjects in the third block received two supportive defenses, one in the first session two days before the attack, and one in the second session immediately before the attack. These subjects also provided attack-only and neither-attack-nor-defense controls on two other truisms. The fourth block of subjects received the same treatment as those in the third block except that the time between sessions was seven days instead of two days. Four truisms were systematically rotated among the subjects within each of the four blocks. (See Appendix A).

McGuire found that what little resistance the supportive defense conferred against immediate attacks had decayed almost completely within two days. At both the two-day and seven-day intervals, the level to which the attack reduced the belief was approximately the same after a supportive defense as in the no-defense, attack only condition. The conferred resistance of the refutational defenses decayed at a much slower rate. The non-monotonic effect in the refutational-different condition was also confirmed--resistance to attacks two days later was actually greater than to immediate attacks. The slower decay rate of the resistance conferred by this defense compared to the decay rate of the refutational-same defense was also confirmed. Hence, Hypothesis Three was also accepted.

#### Prior Attempts to Extend the Boundary of Inoculation Theory

McGuire's development and testing of inoculation theory is extremely impressive. He and his associates presented one experiment after another which replicated and extended the basic inoculation theory concepts.<sup>32</sup> However, he restricted the beliefs that were manipulated to cultural truisms in the health field. To what extent is inoculation theory generalizable? For example, could an advertiser inoculate consumers against impending competitive attacks or against FTC-ordered corrective advertising? Clearly, the consumer product beliefs in these instances

are not as strongly or aseptically held as cultural truisms which, as stated previously, are beliefs so widely shared within a person's environment that the person has never questioned them.

There have been only two published attempts to extend inoculation theory to a marketing setting. These articles will now be reviewed.

Bither, Dolich and Nell conducted an experiment with college students who were in agreement with the belief that there should be little or no censorship of movies.<sup>33</sup> As this belief was relatively strongly held (on a 20 point attitude scale, most respondents checked "14" to indicate their agreement with the proposition), the researchers felt that their work would be a step toward marketing applications of inoculation theory. Their central hypothesis was that those exposed to an immunization message designed to induce resistance to persuasion would show less change in their belief level following an attack on the belief than would those not exposed to the immunization message prior to the attack.

The belief level was measured before any experimental treatments. Next, subjects were exposed to the immunization message that was designed to induce resistance to persuasion. Then they were exposed to the attacking message and, finally, the belief level was measured again. The difference between the initial and the final raw score belief measures was the dependent variable that provided the input for a 2 x 2 x 2

factorial analysis of variance fixed-effects model. The independent variables were level of immunization (immunization or no immunization), sources of immunization (high-prestige source or medium-prestige source) and level of attack (strong argument or no strong argument). Each subject was given seven minutes to read each of four messages that were disguised as newspaper editorials on topics of current interest. Six different combinations of messages were used with experimental groups receiving either two, three, or four dummy messages.

The researchers reported a number of results, the most salient of which was that:

There was a significant difference between post-attack belief levels for immunized subjects by source, lending tentative support to the immunization hypothesis. With a high-prestige source offering counter-arguments against a strongly held belief, and then refuting these counter-arguments, the subject may reinforce his previously held belief and be more able to withstand subsequent attack.<sup>34</sup>

Although Bither, Dolich and Nell were the first to attempt to extend inoculation theory to a marketing context, their work fell short of their goal for a number of reasons. First, dealing with the question of movie censorship, they unfortunately chose an issue of public policy concern rather than a product or service that would typically be of concern in a marketing context. Second, although the researchers did not disclose the actual messages they used, they disguised the messages as newspaper editorials rather than as commercial advertisements. Third, each message used was to

be read in seven minutes. Very few written persuasive advertisements are of a length requiring this much time to be read. Finally, unless a marketer knows exactly which arguments are to be used in an attack, the inoculation defense would most probably be a refutational-different defense. The distinction between this defense and a refutational-same defense was not considered by the researchers. Are they both equally effective in a marketing context?

Szybillo and Heslin<sup>35</sup> conducted an experiment with 240 college students to test the following hypotheses:

- a. Both supportive and refutational defenses will be superior to a no-defense treatment;
- b. The refutational-same defense will be superior to the supportive defense;
- c. Refutational defense (both refutational-same and refutational-different defenses combined) will be superior to supportive defense;
- d. Refutational defenses will be superior to the supportive defense over time;
- e. Attack from a low credibility source will be less effective in reducing belief level than that from a high credibility source.

Their experimental design was a  $4 \times 2 \times 2 \times 2$  factorial, consisting of four defense levels (supportive, refutational-same, refutational-different, and no defense), two source attack levels (high credibility and low credibility), two time attack levels (immediate attack and three days to

attack) and two levels of trials (pre- and post-belief measurement). The dependent variable was the level of belief in the controversial statement, "Inflatable air bags should be installed as passive safety devices in all new cars." (In a pretest, the mean level of belief in this statement measured 11.62 on a 15 point scale).

Subjects' belief levels were measured before the first experimental session. Each one then received a booklet containing four editorial advertisements, one of which was a defensive treatment. Each defensive treatment was four paragraphs long and contained approximately 350 words. Subjects were given four minutes to read each advertisement and were told to underline those phrases they considered most important. At the end of this session they completed a post-experimental questionnaire.

The second session came either 30 minutes or three days later and was conducted the same way as the first session, except that one of the four editorial advertisements that subjects received was the attack treatment. The attack advertisement was also four paragraphs long and contained 350 words. It was attributed to either Consumers Reports (a high credibility source) or to the American Automobile Manufacturers Association (a low credibility source). At the end of this session, the subjects' belief levels were again measured.

According to the researchers, the analysis of their data led them to accept Hypotheses a, b and c above. However,

Hypotheses d and e did not receive empirical support. They concluded that issuing a defense is generally superior to issuing no defense and that refutation of an attack's arguments conferred more resistance to persuasion than did supportive claims.

Even though Szybillo and Heslin's research was more comprehensive than that of Bither et al., almost the same criticisms levelled against the latter's work are appropriate here. First, the issue Szybillo and Heslin chose to work with, the installation of inflatable air bags as a passive safety device in new cars, is more an issue of public policy concern than it is an issue of marketing concern. (Though the two are not necessarily mutually exclusive, most consumer advertising does not deal so explicitly with issues which are patently of public policy concern). Second, the experimental advertisements (defensive and attacking) were editorial advertisements rather than the more typical commercial advertisements. Finally, each message used was to be read in four minutes. Most commercial advertisements require less time than that to be read.

#### Value of Prior Research Attempts to Extend Inoculation Theory to A Marketing Context

The authors of the two above studies set out to investigate if inoculation theory could be applied to a marketing environment. Recognizing that the great majority of consumer beliefs do not have the level of acceptance of cultural truisms, they worked with controversial and lengthy messages and were

led to conclude that inoculation theory seems to have relevance to such beliefs as well.

However, the controversial beliefs to which inoculation theory was extended are not the type of beliefs one usually finds in a marketing milieu. Specifically in the typical advertising situation, the communicated message is lower in importance to the consumer than is a message dealing with censorship or air bags. Moreover, the content of most advertisements is considerably briefer than the messages used by the researchers in their experiments.

Thus, while the applicability of inoculation theory has been extended to controversial beliefs, it remains to be seen if the theory can be applied in a marketing context where communicated messages are not particularly important (e.g., is a particular product a candy mint or a breath mint?) and where such messages tend to be brief. The purpose of the current research is to determine if inoculation theory can be extended to such a marketing environment.

In the following chapter (Chapter III - Research Design and Methodology) the details of the design of the current research and the procedures that were implemented in carrying out the research will be presented. The results of the research will follow in Chapter IV, and the dissertation conclude with a summary, conclusions and recommendations in Chapter V.

## FOOTNOTES

1. McGuire, Advances in Experimental Social Psychology, p. 192.
2. Ibid., pp. 194-200.
3. Edith B. Bennett, "Discussion, Decision, Commitment and Consensus in 'Group Decisions'," Human Relations (August 1955), Vol. 8, No. 3, pp. 251-273.
4. Morton Deutsch and Harold B. Gerard, "A Study of Normative and International Social Influences Upon Individual Judgment," Journal of Abnormal and Social Psychology (November 1955), Vol. 51, No. 3, pp. 629-636. Also, Arthur R. Cohen, Jack W. Brehm and Bill Latane, "Choice of Strategy and Voluntary Exposure to Information Under Public and Private Conditions," Journal of Personality (March 1959), Vol. 27, No. 1, pp. 63-73.
5. McGuire, Advances in Experimental Social Psychology, pp. 215-219.
6. Milton E. Rosenbaum and Douglas C. Franc, "Opinion Change as a Function of External Commitment and Amount of Discrepancy from the Opinion of Another," Journal of Abnormal and Social Psychology (July 1960), Vol. 61, No. 1, pp. 15-20.
7. Steuart Henderson Britt, Psychological Principles of Marketing and Consumer Behavior (Lexington, Massachusetts: Lexington Books, 1978), pp. 462-463.
8. Robert B. Zajonc, "The Process of Cognitive Tuning in Communication," Journal of Abnormal and Social Psychology (September 1960), Vol. 61, No. 2, pp. 159-167.
9. William J. McGuire, "Cognitive Consistency and Attitude Change," Journal of Abnormal and Social Psychology (May 1960), Vol. 60, No. 3, pp. 345-353.
10. Bennett, op.cit., pp. 251-273.
11. Theodore M. Newcomb, The Acquaintance Process (New York: Holt, 1961), passim.
12. Percy H. Tannenbaum, "Initial Attitude Toward Source and Concept as Factors in Attitude Change Through Communication," Public Opinion Quarterly (Summer 1956), Vol. 20, No. 2, pp. 413-425.

13. McGuire, Advances in Experimental Social Psychology, p. 197.
14. Jum Nunnally and Howard Bobren, "Variables Governing the Willingness to Receive Communications on Mental Health," Journal of Personality (March 1959) Vol. 27, No. 1, pp. 38-46.
15. Irving L. Janis and Seymour Feshbach, "Effects of Fear-Arousing Communications," Journal of Abnormal and Social Psychology (January 1953), Vol. 48, No. 1, pp. 78-92.
16. Gerald S. Lesser and Robert P. Abelson, "Personality Correlates of Persuasibility in Children," pp. 187-206; Harriet Linton and Elaine Graham, "Personality Correlates of Persuasibility," pp. 69-101; Irving L. Janis and Donald Rife, "Persuasibility and Emotional Disorder," pp. 121-140; Irving L. Janis and Peter B. Field, "Sex Differences and Personality Factors Related to Persuasibility," pp. 55-68, Personality and Persuasibility, Eds. Irving L. Janis and Carl I. Hovland (New Haven, Connecticut: Yale University Press, 1959).
17. Walter Weiss and Bernard J. Fine, "The Effect of Induced Aggressiveness on Opinion Change," Journal of Abnormal and Social Psychology (January 1956), Vol. 52, No. 1, pp. 109-114.
18. Bernard Mausner, "The Effect of Prior Reinforcement on the Interaction of Observer Pairs," Journal of Abnormal and Social Psychology (January 1954), Vol. 49, No. 1, pp. 65-68. Also, Franz Samelson, "Conforming Behavior Under Two Conditions of Conflict in the Cognitive Field," Journal of Abnormal and Social Psychology (September 1957), Vol. 55, No. 2, pp. 181-187.
19. Richard S. Crutchfield, "Conformity and Character," American Psychologist (May 1955), Vol. 10, No. 5, pp. 191-198.
20. Janis and Rife, op.cit., pp. 121-140.
21. Hadley Cantril, "Behavior Under Situational Stress: The Invasion from Mars," Readings in Social Psychology, Eds. E. Maccoby, et al. (New York: Holt, 1955) pp. 291-300.
22. McGuire, Advances in Experimental Social Psychology, p. 201.

23. Abraham F. Citron and John Harding, "An Experiment in Training Volunteers to Answer Anti-Minority Remarks," Journal of Abnormal and Social Psychology (April 1950), Vol. 45, No. 2, pp. 310-328.
24. McGuire, op.cit., pp. 200-201.
25. Ibid., p. 201. More than 75 percent of those sampled checked "15" on a 15 point scale to indicate their agreement with these propositions.
26. Ibid., p. 202.
27. William J. McGuire, "Persistence of the Resistance to Persuasion Induced by Various Types of Prior Belief Defenses," Journal of Abnormal and Social Psychology (April 1962), Vol. 64, No. 4, pp. 241-248.
28. William J. McGuire and Demetrios Papageorgis, "The Relative Efficacy of Various Types of Prior Belief-Defense in Producing Immunity Against Persuasion," Journal of Abnormal and Social Psychology (March 1961) Vol. 62, No. 3, pp. 475-481.
29. Demetrios Papageorgis and William J. McGuire, "The Generality of Immunity to Persuasion Produced by Pre-exposure to Weakened Counter-arguments," Journal of Abnormal and Social Psychology (May 1961), Vol. 62, No. 3, pp. 475-481.
30. McGuire, Advances in Experimental Social Psychology, p. 316.
31. Ibid., p. 201.
32. Chester A. Insko, Theories of Attitude Change (New York: Appleton-Century-Crofts, 1967), p. 327.
33. Stewart W. Bither, Ira J. Dolich and Elaine B. Nell, op.cit., pp. 56-61.
34. Ibid., p. 60.
35. George J. Szybillo and Richard Heslin, "Resistance to Persuasion: Inoculation Theory in a Marketing Context," Journal of Marketing Research (November, 1973), Vol. 10, No. 4, pp. 396-403.

## CHAPTER III

### RESEARCH DESIGN AND METHODOLOGY

The focus of the current study was to test if inoculation theory could be extended to a marketing milieu. The hypotheses to be tested were already discussed in Chapters I and II. In this chapter, the variables of the study will be defined operationally, and the details of the research design and methodology that were used to generate the experimental data needed to test the theory will be presented.

#### The Experimental Independent Variables

##### A. Type of Defensive Message

The first independent variable was the type of defensive message to which respondents were exposed. Five types of defensive messages were employed. The supportive defense presented a single attribute of a product in a positive manner. No mention was made of any possible attack on any of the product's attributes. When an attacking message followed a supportive defense, the message either attacked the attribute previously supported or a different attribute not mentioned in the defense. In the former instance the defense was labelled a supportive-same defense;

in the latter instance the defense was a supportive-different defense. The use of two types of supportive defense was not necessitated by any aspect of inoculation theory, but was included for the purpose of maintaining a symmetric design. (See Research Design, below).

The refutational defense presented a possible attack of a product's attribute and proceeded to defend against the attack by pointing out in what way the attack was unfounded. When an attacking message followed a refutational defense, the message either attacked the attribute that was defended in the refutational message or it attacked a different attribute not mentioned in the defense. In the former instance, the defense was labelled a refutational-same defense; in the latter instance the defense was a refutational-different defense. The distinction between the refutational-same and the refutational-different defense is integral to the testing of inoculation theory, specifically to Hypotheses  $H_3$  and  $H_4$ . (See Chapter I).

The no defense treatment consisted of a message attacking a single attribute of a product. There was no prior defense of any kind against the attack. This treatment served as a control and was used to measure the effectiveness of an attacking message.

B. Time Interval Between the  
Defensive and Attacking Messages

Anticipating the need to examine the temporal effects of inoculation theory, McGuire varied the interval between defensive and attacking messages in each of his experiments. He concluded that the temporal effect could be tested by varying the intervals between defense and attack over the range of a few minutes to one week. The strategic time settings of attack following defense by a few minutes (immediate), attack following defense by two days (two days), and attack following defense by seven days (seven days) used by McGuire<sup>1</sup> were also used in the present study.

C. Level of Perceived Risk  
Attached to the Advertised Product

As discussed in Chapter I, the finding that risk perception varies by product category was incorporated into the current study on an exploratory basis. As the research design called for the use of four products, and since the level of perceived risk attached to the advertised product was included in the study only on an exploratory basis, it was decided that three of the products should be low risk and the fourth should be high risk. The three low risk products used in the study were tissues, orange juice and bandages. The high risk product used was videodisc players. The choice of the categorization of these four products can be justified on the basis of content validity.

#### D. Perceived Self-Consistency

In part, to determine a type of person for whom inoculation theory might have predictive value, respondents in the current study were administered Gergen and Morse's "Measure of Self-Consistency" personality test.<sup>2</sup> (Appendix E). From a list of 17 positive personality traits respondents were asked to select five which they thought applied to themselves. Then, from a list of 17 negative personality traits, respondents were asked to, again, select five which they thought applied to themselves. Next, respondents wrote the ten traits they had selected along the side and bottom of a 10 x 10 matrix. Finally, respondents rated each of the 100 pairs of personality traits based on whether or not they thought the pair was consistent (i.e., whether or not the specific two traits went hand in hand), or inconsistent (contradictory). The rating scale was a five-point scale, anchored by highly consistent (1) and highly inconsistent (5).

An individual's score on this personality test was the sum of his or her 100 ratings. The higher the score the lower the level of perceived self-consistency (or the higher the level of perceived self-inconsistency). The median of all the scores was determined. Those respondents whose scores were below the median were classified as having a high level of perceived self-consistency. Those respondents whose scores were above the median were classified as having a low level of perceived self-consistency.

### The Experimental Dependent Variable

If inoculation theory is applicable to a marketing context, then a defensive pretreatment should effect a smaller change in respondents' belief levels regarding a product's advertised attributes following an attack on those beliefs than if there were no pretreatment. Thus, the dependent variable was the level of belief in the advertised claims.

The research design (see below) included a "no defense-no attack" control condition. As respondents were randomly assigned to each experimental condition, belief levels for the "no defense-no attack" condition were attributed to all respondents prior to any defensive treatment. The no defense treatment provided the levels of belief resulting from inoculated attacks. A comparison of the belief levels under the "no defense" and defensive conditions with the belief levels under the "no defense-no attack" condition should provide an indication of the applicability of the theory to marketing. Also, a comparison of the belief levels under the defensive conditions with the belief levels under the "no defense-no attack" condition at the strategic time settings should indicate the temporal effects of the theory.

### Measurement of Belief Levels

McGuire used a 15 point semantic differential scale to measure subjects' beliefs in the health truisms that were included in his studies. Syzbillo and Heslin used the identical scale in their research but Bither, Dolich and Nell chose to use a 20 point scale in their work. It seemed to this writer, though, that a 15 point scale provided too many cues for respondents to judge reliably.

The number of points or cues to be used on the semantic differential scale depends upon the type of respondent, the experimental design, and the nature of the analysis. Generally, the more intelligent respondent can meaningfully scale more cues if the experimental design is favorable.<sup>3</sup> The proposed design called for undergraduate students to complete a short questionnaire during class time.

The analysis determines if the scale should have many or few cues. If an interval scale is to be assumed, more cues are necessary in order to use parametric statistics. The proposed analysis of the data to be collected called for using analysis of variance and t-tests. Hence, a scale with many cues was deemed necessary.

Reliability increases as the number of cues is increased, with a tendency for reliability to level off at

seven cues. Very little reliability is gained by adding more than 11 cues.<sup>4</sup>

With the above considerations, and with the desire to force respondents to rate their beliefs in the advertised claims unequivocally, the scale that was used to measure respondents' beliefs in the current study was a 10 point scale, which did not provide a true neutral point. (See Appendix C).

### The Research Design

The research design that was used to generate the experimental data needed to test whether inoculation theory could be extended to a marketing milieu was adapted from the design used by McGuire to test the temporal effects of his theory.<sup>5</sup>

The research design included four blocks of subjects. (See Appendix A). Those in the first block received four refutational defenses of four different products, two in the first session two days before the attacks, and two in the second session immediately before the attacks. In each session, one defense was refutational-same and one was refutational-different. In order to effect the refutational-different condition, two different advertisements for each product had to be prepared. Thus, eight different advertisements were used for the refutational defense conditions. Subjects in the second block received the same treatments

as those in the first block except that the time between sessions was seven days instead of two days. Subjects in the third block received two supportive defenses of two different products, one in the first session two days before the attack, and one in the second session immediately before the attack. These subjects also received an attack-only treatment for a third product and provided the neither-attack-nor-defense control on a fourth product. The fourth block of subjects received the same treatments as those in the third block except that the time between sessions was seven days instead of two days. In order to balance the design of blocks three and four with that of blocks one and two, two different supportive advertisements for each product were prepared, for a total of eight different advertisements in the supportive conditions. The supportive-same defenses were provided either two days or seven days before the attack. The supportive-different defenses were provided immediately before the attack. Advertising for the four products (see Appendix B) was systematically rotated among the subjects within each of the four blocks.

## Design of the Advertising Messages

### A. Advertising Content

The nature of the research design required a total of 24 advertisements; 16 were defensive and eight were attacking. There were two alternative forms of advertisements for each of four different products. As indicated above, the three low-risk products advertised were tissues, orange juice and bandages; the single high-risk product advertised was videodisc players.

To determine what product attributes should be emphasized in the experimental advertisements, two hour-long focus group interviews were conducted with a total of 18 undergraduate liberal arts students at Iona College. They were told that the purpose of the session was to determine whether advertising for tissues, orange juice, bandages and videodisc players that they were familiar with actually dealt with product features that were important to them.

The students recalled advertising for Tropicana, Minute Maid, Birdseye and Orange Plus orange juice; Band-Aid and Curad bandages; and Scott, Kleenex and Marcal tissues. Although most of the students were aware that RCA and several other companies were marketing videodisc players, none could recall any advertising for this product.

The students identified many advertised features of orange juice, bandages and tissues, and felt that most of



To minimize the differential effect a particular source might have on the acceptance of an attacking message (e.g., if the source is a competitor, how is the particular competitor viewed vis-a-vis the company whose product is being attacked), the sources of the attacking messages were four different, fictitious, consumer-advocate groups.

### The Research Methodology

Because the research design required two sessions with a large number of subjects, it was deemed appropriate to have students participate in the experiment. The students were liberal arts undergraduates, attending classes in English, Communication Arts or Psychology during the Summer and Fall 1980 semesters at Iona College, New Rochelle, New York, where the writer is an Assistant Professor of Marketing. A list was compiled, with the Registrar's assistance, of those sections with enrollments of at least 25 students.

From this list, eight classes, with a total enrollment of 236 students, were randomly selected to participate in the study. The classes were taught by four professors and their permission to use their classes for the experiment was solicited and gratefully extended. A total of 181 usable questionnaires was obtained. In two instances, the actual student enrollment was less than 25. Also, a number of students participated in the first session, but were absent for the second session, or were absent from the first session and were not asked to participate in the second session.

The eight classes were randomly assigned to an experimental block (two classes to each of the four blocks). Within each block, students were randomly assigned to one of eight conditions (see Appendix A) and were given an experimental advertising packet appropriate to that condition.

Upon entering a classroom, the writer introduced himself as an Assistant Professor of Marketing at the college who was doing research in the area of advertising. The students were told that although many advertisers believed that an individual's personality has an effect on how effective advertising is for him, there were very few studies which actually supported the belief. This writer was interested in examining to what extent one's personality affects his ability to critically analyze advertising. To assist the writer in his research, the students' professor donated 30 minutes of class time for the conduct of the study.

Students were told that participation in the study was completely voluntary and their responses would be anonymous. If anyone did not want to participate, he would be excused from class for 30 minutes. No one declined the offer to participate.

The students were told that they would be given a test booklet, face down. When told to begin, they were to turn the booklet over and read the first page, which was a print advertisement. They would be given 60 seconds

to read the advertisement and to underline what they thought was the single most important idea in it. They were not to turn to the next page until they were told to do so. (The rationale behind the underlining task, which students were not told at this session, was to force the students to concentrate on the advertising contents, thus simulating the cumulative effect of advertising repetition, and to disguise the true purpose of the study, viz., persuasion). Those classes whose booklets contained two advertisements were then told that they would have 60 seconds to read the next page and to underline what they thought was the single most important idea in that advertisement.

Next, the students were told that the final two pages of the booklet consisted of a personality questionnaire and that they would have 25 minutes to complete it. Their attention was called to the request to have them write the last four digits of their social security number at the beginning of the personality test. They were assured that the purpose of listing these digits was not to identify them individually, by name, but rather, should the need arise for their additional participation in the study, so that they could be identified by number.

After 25 minutes the booklets were collected and appreciation for the students' cooperation was acknowledged. The students were also told that the writer would return before the end of the semester to discuss the results of the study.

Either two days or seven days later the writer returned to the classes and told the students that the data had been analyzed, but no clear relationship between personality and the ability to critically analyze advertising had emerged. The reason for this was most likely because the students had been asked to read too few advertisements. With their professor's permission, the writer asked them to participate in Part 2 of the study, in which they would be given 60 seconds to read each of several additional advertisements and to underline what they thought was the single most important idea in it. Also, they were asked to complete two short questionnaires. The total time required for Part 2 of the study was less than 15 minutes. Respondents' identification numbers from the first part of the study were used to give them the appropriate second part of the study.

After being given the necessary time to analyze either four or six advertisements, the students were told that the writer wanted to know if the ability to read advertisements analytically was affected by a person's opinions about the advertised products. To determine this, they were asked to complete a two-page, 17-item questionnaire (Appendix C).

Sixteen items were statements about the advertised attributes of the four test products. The 17th item was a repetition of one of the previous statements and was used to test the validity of the responses. Respondents were asked

to indicate their own personal opinion of each statement's truth, regardless of whether that opinion agreed or disagreed with some or all of the material they read in the test, by using the scale discussed above. They were given three minutes to complete this questionnaire.

To measure the respondents' belief in each of the eight advertised attributes (absorbency and softness of Scotties tissues, taste and convenience of Minute Maid orange juice, protection and adhesion of Band-Aid bandages, and the safe stylus and advantage of the RCA videodisc player), two statements addressed each of the attributes. The mean of each pair was calculated and used as the measure of a respondent's belief in a particular attribute.

Eleven of the 16 items were expressed as positive statements regarding the attributes. Five of the items were negatively stated, necessitating a reversal of their scales prior to any analysis. For example, Item 15 read "Band-Aid brand bandages have too much adhesive." An actual rating of '3' for this statement was transformed to an '8' (11 minus 3), representing the respondent's level of belief in the positive adhesion attribute.

By answering all 17 items on the opinion questionnaire, respondents expressed their belief levels in attributes about which they had not been exposed to experimental advertising. For example, respondents exposed to advertisements defending against an attack on the adhesion of Band-Aid bandages and

attacking this attribute, provided ratings for their belief in the protection attribute of Band-Aid bandages, although they had seen no advertising about this attribute in their booklets. Thus, the generalizability from an inoculation treatment on one product attribute to a second attribute of the product could be assessed.

After the respondents completed the opinion questionnaire, they were asked to complete a second, one page questionnaire (Appendix D). The purpose of this questionnaire was to determine if the respondents felt that sufficient time had been provided for their advertising analyses, taking the personality test and completing the opinion questionnaire; whether they had heard anything about the experiment in advance; and whether they thought the experiment could have measured something other than what they had been told it measured. They were given two minutes to complete this questionnaire.

With the completion of this final questionnaire, the test booklets were collected and the writer proceeded to debrief the students. The true, persuasive intent of the study was disclosed and the reasons for the deceptions employed (providing a false objective for the study, underlining the central ideas in the advertisements and administering the personality test) were explained. The students were told that the advertisements they had read were not actual advertisements, and the claims made for or against the

advertised products had not been substantiated in reality. Therefore, they should not rely on any of the claims. They were, also, told that additional classes would be participating in the study, and they were asked not to disclose any aspect of the study to any other students. Finally, the students and their professors were thanked for their cooperation.

The results of the study will next be presented in Chapter IV. The dissertation will conclude with a summary, conclusions and recommendations in Chapter V.

## FOOTNOTES

1. William J. McGuire, "Persistence of the Resistance to Persuasion Induced by Various Types of Prior Belief Defenses," Journal of Abnormal and Social Psychology (April 1962), Vol. 64, No. 4, pp. 241-248.
2. John P. Robinson and Phillip R. Shaver, Measures of Social Psychological Attitudes (Ann Arbor, Michigan: Survey Research Center, Institute for Social Research, 1973), pp. 154-155.
3. G. David Hughes, Attitude Measurement for Marketing Strategies (Glenview, Illinois: Scott, Foresman and Company, 1971), p. 91.
4. Jum Nunnally, Psychometric Theory (New York: McGraw-Hill, 1967), p. 521.
5. McGuire, op.cit., pp. 241-248.

## CHAPTER IV

### RESULTS OF THE STUDY

In an attempt to determine if inoculation theory can be applied within a marketing context, an experiment was conducted during the Summer and Fall 1980 semesters at Iona College in New Rochelle, New York. One hundred eighty-one Liberal Arts undergraduate students participated in the complete experiment. The results of that study will now be presented.

#### Adequacy of Experimental Time Allowances

Eighty-one of the subjects complained that some part of the test had been given either too little or too much time for its completion. Forty subjects complained about the time allowance for reading and underlining the central idea in the experimental advertisements, 26 subjects voiced similar complaints about the time provided for completing the personality questionnaire, and 15 subjects complained about the time allowance for the opinion questionnaire. (Table 4-1).

Notwithstanding the fact that 56 subjects were pressed for time to complete some part of the experiment, all respondents completed the advertising analyses and the opinion questionnaire. Five respondents did not complete

TABLE 4-1

NUMBER AND TYPE OF COMPLAINTS REGARDING  
TIME ALLOWANCES PROVIDED FOR DIFFERENT  
PARTS OF THE EXPERIMENT

| <u>Part of Experiment</u> | <u>Time Provided</u> |                  | <u>Total</u> |
|---------------------------|----------------------|------------------|--------------|
|                           | <u>Insufficient</u>  | <u>Excessive</u> |              |
| Advertising Analysis      | 25                   | 15               | 40           |
| Questionnaires            |                      |                  |              |
| Personality               | 18                   | 8                | 26           |
| Opinion                   | <u>13</u>            | <u>2</u>         | <u>15</u>    |
| Total                     | 56                   | 25               | 81           |

the personality questionnaire. Of these, one complained of insufficient time for its completion, one complained of excessive time provided for its completion, and the remaining three indicated that sufficient time had been provided for its completion.

#### Efficacy of the Experimental Disguise

Although eight classes of students participated in the two-part experiment, all of the subjects denied having heard anything about the study. When asked what else, besides the ability to analyze advertising, the test could have measured, only 14 subjects suggested the test could have measured persuasion. However, a content analysis of these respondents' questionnaires led the writer to conclude that they had discerned the true purpose of the experiment only upon reflection, i.e., after the suggestion that something else could have been measured by the test. Consequently, their responses were included in all subsequent analyses.

#### Reliability of the Data

One of the 17 items on the opinion questionnaire was repeated to serve as a reliability check. This was the statement, "Minute Maid orange juice is more convenient than frozen orange juice," which appeared as Items 6 and 16. The two responses to the repeated item yielded a Pearson correlation coefficient of 0.71, which is significantly different

from zero ( $\alpha < 0.0001$ ). Thus, the data of the opinion questionnaire can be considered reliable.

### Belief Levels of Product Attributes

The 181 subjects of the experiment were randomly assigned to one of the four experimental blocks. Within each block, subjects were randomly assigned to one of eight conditions. Blocks I and II included refutational defenses of two attributes for each of four products, with attacking messages coming either zero, two or seven days following the defense. Blocks III and IV included supportive defenses of two attributes for each of four products, with attacking messages also coming either zero, two or seven days following the defense. These two blocks also provided "attack only" and "neither defense nor attack" treatments. The 16 conditions of Blocks I and II represented rotations of eight different refutational messages and eight different attacking messages. The 16 conditions of Blocks III and IV represented rotations of eight different supportive messages and eight different attacking messages. (Appendix A).

Each subject indicated the level of his or her belief in the truth of 16 statements concerning eight attributes of four products on a ten-point semantic differential scale. Each attribute was represented by two statements. Respondents' level of belief in an attribute was their mean rating for the two statements concerning that attribute.

The respondents' belief levels in the product attributes are presented in Table 4-2. The attributes are the absorbency and lintiness of Scotties tissues (Scotabs and Scotlty), the taste and convenience of Minute Maid orange juice (OJtaste and OJconvt), the adhesion and skin-tightness of Band Aid brand bandages (Banadhs and Banskt) and the stylus and advantage of RCA videodisc players over video cassette recorders (RCAstyl and RCAadva). The data are presented for each of the 32 experimental conditions (Condcode) and include the number of subjects in each condition.

The Analysis of Variance Structure  
of the Experimental Design

The 31 experimental conditions represented the rotation of defensive and attacking advertisements and comprised the treatments that constitute inoculation theory. The specific condition numbers that comprised the treatments for each of the four experimental products are shown in Table 4-3. Section A of Table 4-3 shows, for example, that subjects in Conditions 1 and 9 received a refutational message defending the absorbent attribute of Scotties tissues, followed immediately by a message attacking the same attribute. Subjects in Conditions 7 and 15 received the same treatment as those in Conditions 1 and 9, but the attacking message came two and seven days, respectively, following the defense. Subjects in Conditions 6 and 14 received a

TABLE 4-2

RESPONDENTS' MEAN LEVEL OF BELIEF IN EIGHT PRODUCT  
ATTRIBUTES BY CONDITION CODE NUMBER

| <u>Variable</u>   | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|-------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=1</u> |          |                            |             |                                     |
| Scotabs           | 6        | 0                          | 5.50000000  | 1.30384048                          |
| Scotlty           | 6        | 0                          | 5.58333333  | 0.49159604                          |
| OJtaste           | 6        | 0                          | 5.75000000  | 2.36114379                          |
| OJconvt           | 6        | 0                          | 7.08333333  | 2.15445275                          |
| Banadhs           | 6        | 0                          | 6.91666667  | 2.01038968                          |
| Bansktt           | 6        | 0                          | 5.75000000  | 1.86413519                          |
| RCastyl           | 6        | 0                          | 4.25000000  | 1.91702895                          |
| RCaadva           | 6        | 0                          | 3.83333333  | 1.94079022                          |
| <u>CONDCODE=2</u> |          |                            |             |                                     |
| Scotabs           | 6        | 0                          | 6.00000000  | 2.42899156                          |
| Scotlty           | 6        | 0                          | 5.33333333  | 0.43094934                          |
| OJtaste           | 6        | 0                          | 5.16666667  | 2.80475786                          |
| OJconvt           | 6        | 0                          | 6.00000000  | 3.34664011                          |
| Banadhs           | 6        | 0                          | 6.75000000  | 1.69558250                          |
| Bansktt           | 6        | 0                          | 5.83333333  | 2.50333111                          |
| RCastyl           | 6        | 0                          | 5.58333333  | 1.82802261                          |
| RCaadva           | 6        | 0                          | 3.91666667  | 3.12116431                          |
| <u>CONDCODE=3</u> |          |                            |             |                                     |
| Scotabs           | 5        | 0                          | 4.70000000  | 0.83666003                          |
| Scotlty           | 5        | 0                          | 5.70000000  | 0.75828754                          |
| OJtaste           | 5        | 0                          | 6.80000000  | 2.13892496                          |
| OJconvt           | 5        | 0                          | 7.70000000  | 1.78885438                          |
| Banadhs           | 5        | 0                          | 6.60000000  | 0.96176920                          |
| Bansktt           | 5        | 0                          | 5.70000000  | 1.20415946                          |
| RCastyl           | 5        | 0                          | 4.60000000  | 1.67332005                          |
| RCaadva           | 5        | 0                          | 4.90000000  | 2.04328167                          |
| <u>CONDCODE=4</u> |          |                            |             |                                     |
| Scotabs           | 5        | 0                          | 4.10000000  | 1.78185297                          |
| Scotlty           | 5        | 0                          | 4.30000000  | 1.68077363                          |
| OJtaste           | 5        | 0                          | 6.10000000  | 2.35584380                          |
| OJconvt           | 5        | 0                          | 6.60000000  | 2.98747385                          |
| Banadhs           | 5        | 0                          | 4.20000000  | 1.98746069                          |
| Bansktt           | 5        | 0                          | 5.30000000  | 1.71755640                          |
| RCastyl           | 5        | 0                          | 5.50000000  | 1.41421356                          |
| RCaadva           | 5        | 0                          | 2.70000000  | 1.68077363                          |

Table 4-2 (continued)

| <u>Variable</u>   | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|-------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=5</u> |          |                            |             |                                     |
| Scotabs           | 6        | 0                          | 5.16666667  | 1.47196014                          |
| Scotlty           | 6        | 0                          | 7.00000000  | 1.78885438                          |
| OJtaste           | 6        | 0                          | 5.50000000  | 1.54919334                          |
| OJconvt           | 6        | 0                          | 8.33333333  | 0.93094934                          |
| Banadhs           | 6        | 0                          | 5.66666667  | 1.21106014                          |
| Bansktt           | 6        | 0                          | 5.41666667  | 1.65579789                          |
| RCastyl           | 6        | 0                          | 4.08333333  | 2.35407448                          |
| RCaadva           | 6        | 0                          | 5.16666667  | 0.40824829                          |
| <u>CONDCODE=6</u> |          |                            |             |                                     |
| Scotabs           | 6        | 0                          | 6.75000000  | 1.75356779                          |
| Scotlty           | 6        | 0                          | 4.83333333  | 0.98319208                          |
| OJtaste           | 6        | 0                          | 7.08333333  | 0.97039511                          |
| OJconvt           | 6        | 0                          | 6.91666667  | 2.57714312                          |
| Banadhs           | 6        | 0                          | 6.08333333  | 2.01038968                          |
| Bansktt           | 6        | 0                          | 5.25000000  | 1.12915898                          |
| RCastyl           | 6        | 0                          | 5.16666667  | 0.25819889                          |
| RCaadva           | 6        | 0                          | 4.66666667  | 1.60208198                          |
| <u>CONDCODE=7</u> |          |                            |             |                                     |
| Scotabs           | 5        | 0                          | 5.50000000  | 0.35355339                          |
| Scotlty           | 5        | 0                          | 4.60000000  | 1.63554272                          |
| OJtaste           | 5        | 0                          | 5.10000000  | 2.53475837                          |
| OJconvt           | 5        | 0                          | 8.70000000  | 0.97467943                          |
| Banadhs           | 5        | 0                          | 7.90000000  | 0.82158384                          |
| Bansktt           | 5        | 0                          | 6.20000000  | 1.60468065                          |
| RCastyl           | 5        | 0                          | 4.70000000  | 0.97467943                          |
| RCaadva           | 5        | 0                          | 2.90000000  | 0.65192024                          |
| <u>CONDCODE=8</u> |          |                            |             |                                     |
| Scotabs           | 6        | 0                          | 6.58333333  | 1.65579789                          |
| Scotlty           | 6        | 0                          | 6.08333333  | 0.37638633                          |
| OJtaste           | 6        | 0                          | 5.25000000  | 0.82158384                          |
| OJconvt           | 6        | 0                          | 7.08333333  | 1.71512876                          |
| Banadhs           | 6        | 0                          | 6.66666667  | 1.25166556                          |
| Bansktt           | 6        | 0                          | 7.08333333  | 1.35708020                          |
| RCastyl           | 6        | 0                          | 4.50000000  | 1.30384048                          |
| RCaadva           | 6        | 0                          | 3.41666667  | 1.80046290                          |

Table 4-2 (continued)

| <u>Variable</u>    | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|--------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDCODE=9</u>  |          |                      |             |                               |
| Scotabs            | 6        | 0                    | 5.50000000  | 1.61245155                    |
| Scotlty            | 6        | 0                    | 5.25000000  | 0.68920244                    |
| OJtaste            | 6        | 0                    | 5.50000000  | 1.84390889                    |
| OJconvt            | 6        | 0                    | 8.00000000  | 0.89442719                    |
| Banadhs            | 6        | 0                    | 6.08333333  | 1.53025052                    |
| Bansktt            | 6        | 0                    | 6.41666667  | 1.85517295                    |
| RCastyl            | 6        | 0                    | 4.08333333  | 1.15830336                    |
| RCaadva            | 6        | 0                    | 4.33333333  | 1.47196014                    |
| <u>CONDCODE=10</u> |          |                      |             |                               |
| Scotabs            | 5        | 0                    | 6.50000000  | 1.69558250                    |
| Scotlty            | 5        | 0                    | 5.70000000  | 0.57008771                    |
| OJtaste            | 5        | 0                    | 5.10000000  | 1.47478812                    |
| OJconvt            | 5        | 0                    | 8.40000000  | 1.55724115                    |
| Banadhs            | 5        | 0                    | 6.20000000  | 2.28035085                    |
| Bansktt            | 5        | 0                    | 6.40000000  | 2.07364414                    |
| RCastyl            | 5        | 0                    | 4.50000000  | 1.73205081                    |
| RCaadva            | 5        | 0                    | 2.40000000  | 0.96176920                    |
| <u>CONDCODE=11</u> |          |                      |             |                               |
| Scotabs            | 6        | 0                    | 4.58333333  | 2.08366664                    |
| Scotlty            | 6        | 0                    | 5.83333333  | 1.88856206                    |
| OJtaste            | 6        | 0                    | 5.16666667  | 1.80739223                    |
| OJconvt            | 6        | 0                    | 8.33333333  | 1.12546287                    |
| Banadhs            | 6        | 0                    | 4.75000000  | 0.75828754                    |
| Bansktt            | 6        | 0                    | 4.50000000  | 2.09761770                    |
| RCastyl            | 6        | 0                    | 3.41666667  | 1.85517295                    |
| RCaadva            | 6        | 0                    | 4.58333333  | 0.91742393                    |
| <u>CONDCODE=12</u> |          |                      |             |                               |
| Scotabs            | 6        | 0                    | 6.50000000  | 2.19089023                    |
| Scotlty            | 6        | 0                    | 4.08333333  | 2.03510851                    |
| OJtaste            | 6        | 0                    | 6.50000000  | 3.22490310                    |
| OJconvt            | 6        | 0                    | 6.91666667  | 2.87083031                    |
| Banadhs            | 6        | 0                    | 7.25000000  | 1.78195297                    |
| Bansktt            | 6        | 0                    | 5.16666667  | 0.68313005                    |
| RCastyl            | 6        | 0                    | 6.50000000  | 0.83666003                    |
| RCaadva            | 6        | 0                    | 4.33333333  | 2.06559112                    |

Table 4-2 (continued)

| <u>Variable</u>    | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=13</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 5.00000000  | 0.77459667                          |
| Scotlty            | 6        | 0                          | 6.25000000  | 2.01866292                          |
| OJtaste            | 6        | 0                          | 4.75000000  | 2.67861905                          |
| OJconvt            | 6        | 0                          | 8.41666667  | 1.02062073                          |
| Banadhs            | 6        | 0                          | 5.33333333  | 2.65832027                          |
| Bansktt            | 6        | 0                          | 5.75000000  | 2.18517734                          |
| RCastyl            | 6        | 0                          | 4.16666667  | 1.40237893                          |
| RCaadva            | 6        | 0                          | 4.16666667  | 1.75119007                          |
| <u>CONDCODE=14</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 6.75000000  | 1.29421791                          |
| Scotlty            | 6        | 0                          | 5.08333333  | 0.58452260                          |
| OJtaste            | 6        | 0                          | 4.83333333  | 0.75277265                          |
| OJconvt            | 6        | 0                          | 6.41666667  | 1.71512876                          |
| Banadhs            | 6        | 0                          | 5.50000000  | 2.32379001                          |
| Bansktt            | 6        | 0                          | 6.91666667  | 1.24163870                          |
| RCastyl            | 6        | 0                          | 5.00000000  | 0.89442719                          |
| RCaadva            | 6        | 0                          | 3.16666667  | 1.25166556                          |
| <u>CONDCODE=15</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 3.16666667  | 1.43759058                          |
| Scotlty            | 6        | 0                          | 5.50000000  | 0.00000000                          |
| OJtaste            | 6        | 0                          | 4.33333333  | 2.31660671                          |
| OJconvt            | 6        | 0                          | 8.58333333  | 1.28127541                          |
| Banadhs            | 6        | 0                          | 6.16666667  | 2.33809039                          |
| Bansktt            | 6        | 0                          | 6.41666667  | 2.67238969                          |
| RCastyl            | 6        | 0                          | 4.00000000  | 2.50998008                          |
| RCaadva            | 6        | 0                          | 3.41666667  | 1.71512876                          |
| <u>CONDCODE=16</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 7.41666667  | 1.62532048                          |
| Scotlty            | 6        | 0                          | 5.33333333  | 0.51639778                          |
| OJtaste            | 6        | 0                          | 5.58333333  | 2.05953069                          |
| OJconvt            | 6        | 0                          | 7.91666667  | 2.13111864                          |
| Banadhs            | 6        | 0                          | 4.83333333  | 0.98319208                          |
| Bansktt            | 6        | 0                          | 6.33333333  | 1.53839743                          |
| RCastyl            | 6        | 0                          | 4.91666667  | 1.39343700                          |
| RCaadva            | 6        | 0                          | 2.83333333  | 1.75119007                          |

Table 4-2 (continued)

| <u>Variable</u>    | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=17</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 4.91666667  | 1.06848803                          |
| Scotlty            | 6        | 0                          | 4.16666667  | 1.03279556                          |
| OJtaste            | 6        | 0                          | 4.16666667  | 0.81649658                          |
| OJconvt            | 6        | 0                          | 7.00000000  | 1.67332005                          |
| Banadhs            | 6        | 0                          | 5.66666667  | 1.57056253                          |
| Bansktt            | 6        | 0                          | 4.91666667  | 1.59426054                          |
| RCastyl            | 6        | 0                          | 5.00000000  | 0.63245553                          |
| RCaadva            | 6        | 0                          | 5.00000000  | 0.63245553                          |
| <u>CONDCODE=18</u> |          |                            |             |                                     |
| Scotabs            | 5        | 0                          | 4.70000000  | 0.90829511                          |
| Scotlty            | 5        | 0                          | 4.00000000  | 1.83711731                          |
| OJtaste            | 5        | 0                          | 5.00000000  | 2.03100960                          |
| OJconvt            | 5        | 0                          | 7.40000000  | 1.88414437                          |
| Banadhs            | 5        | 0                          | 5.10000000  | 2.70185122                          |
| Bansktt            | 5        | 0                          | 6.50000000  | 1.17260394                          |
| RCastyl            | 5        | 0                          | 5.00000000  | 0.61237244                          |
| RCaadva            | 5        | 0                          | 5.50000000  | 0.61237244                          |
| <u>CONDCODE=19</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 7.08333333  | 1.11430098                          |
| Scotlty            | 6        | 0                          | 6.16666667  | 0.98319208                          |
| OJtaste            | 6        | 0                          | 4.75000000  | 2.36114379                          |
| OJconvt            | 6        | 0                          | 7.41666667  | 1.88193163                          |
| Banadhs            | 6        | 0                          | 6.00000000  | 1.04880885                          |
| Bansktt            | 6        | 0                          | 6.00000000  | 1.54919334                          |
| RCastyl            | 6        | 0                          | 5.00000000  | 1.54919334                          |
| RCaadva            | 6        | 0                          | 2.66666667  | 1.72240142                          |
| <u>CONDCODE=20</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 6.41666667  | 0.86120071                          |
| Scotlty            | 6        | 0                          | 5.25000000  | 0.61237244                          |
| OJtaste            | 6        | 0                          | 5.58333333  | 1.49721965                          |
| OJconvt            | 6        | 0                          | 6.50000000  | 1.92353841                          |
| Banadhs            | 6        | 0                          | 4.25000000  | 2.04328167                          |
| Bansktt            | 6        | 0                          | 4.50000000  | 1.67332005                          |
| RCastyl            | 6        | 0                          | 5.58333333  | 1.53025052                          |
| RCaadva            | 6        | 0                          | 2.25000000  | 1.25499004                          |

Table 4-2 (continued)

| <u>Variable</u>    | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=21</u> |          |                            |             |                                     |
| Scotabs            | 5        | 0                          | 5.50000000  | 1.62018517                          |
| Scotlty            | 5        | 0                          | 5.20000000  | 0.27386128                          |
| OJtaste            | 5        | 0                          | 5.60000000  | 1.08397417                          |
| OJconvt            | 5        | 0                          | 7.80000000  | 1.82345825                          |
| Banadhs            | 5        | 0                          | 6.60000000  | 1.47478812                          |
| Bansktt            | 5        | 0                          | 5.60000000  | 1.78185297                          |
| RCastyl            | 5        | 0                          | 4.20000000  | 1.98746069                          |
| RCaadva            | 5        | 0                          | 4.90000000  | 2.07364414                          |
| <u>CONDCODE=22</u> |          |                            |             |                                     |
| Scotabs            | 5        | 0                          | 6.30000000  | 0.90829511                          |
| Scotlty            | 5        | 0                          | 3.50000000  | 1.83711731                          |
| OJtaste            | 5        | 0                          | 5.20000000  | 1.39642400                          |
| OJconvt            | 5        | 0                          | 7.40000000  | 2.04328167                          |
| Banadhs            | 5        | 0                          | 5.50000000  | 1.83711731                          |
| Bansktt            | 5        | 0                          | 5.20000000  | 1.71755640                          |
| RCastyl            | 5        | 0                          | 5.60000000  | 1.24498996                          |
| RCaadva            | 5        | 0                          | 4.70000000  | 1.60468065                          |
| <u>CONDCODE=23</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 5.83333333  | 0.81649658                          |
| Scotlty            | 6        | 0                          | 5.16666667  | 0.40824829                          |
| OJtaste            | 6        | 0                          | 5.00000000  | 1.70293864                          |
| OJconvt            | 6        | 0                          | 8.50000000  | 1.14017543                          |
| Banadhs            | 6        | 0                          | 6.00000000  | 1.61245155                          |
| Bansktt            | 6        | 0                          | 5.83333333  | 1.88856206                          |
| RCastyl            | 6        | 0                          | 4.41666667  | 2.03510851                          |
| RCaadva            | 6        | 0                          | 5.25000000  | 1.12915898                          |
| <u>CONDCODE=24</u> |          |                            |             |                                     |
| Scotabs            | 5        | 0                          | 6.20000000  | 0.97467943                          |
| Scotlty            | 5        | 0                          | 5.40000000  | 1.02469508                          |
| OJtaste            | 5        | 0                          | 6.40000000  | 2.21923410                          |
| OJconvt            | 5        | 0                          | 5.30000000  | 2.65988722                          |
| Banadhs            | 5        | 0                          | 6.60000000  | 1.81659021                          |
| Bansktt            | 5        | 0                          | 4.50000000  | 1.22474487                          |
| RCastyl            | 5        | 0                          | 5.50000000  | 0.61237244                          |
| RCaadva            | 5        | 0                          | 5.50000000  | 0.93541435                          |

Table 4-2 (continued)

| <u>Variable</u>    | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=25</u> |          |                            |             |                                     |
| Scotabs            | 5        | 0                          | 6.20000000  | 1.60468065                          |
| Scotlty            | 5        | 0                          | 6.70000000  | 1.95576072                          |
| OJtaste            | 5        | 0                          | 6.30000000  | 1.52479507                          |
| OJconvt            | 5        | 0                          | 9.30000000  | 0.67082039                          |
| Banadhs            | 5        | 0                          | 6.60000000  | 0.74161985                          |
| Banskttt           | 5        | 0                          | 7.20000000  | 1.52479507                          |
| RCastyl            | 5        | 0                          | 5.40000000  | 0.82158384                          |
| RCaadva            | 5        | 0                          | 4.30000000  | 1.44048603                          |
| <u>CONDCODE=26</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 7.25000000  | 0.68920244                          |
| Scotlty            | 6        | 0                          | 4.75000000  | 1.29421791                          |
| OJtaste            | 6        | 0                          | 6.75000000  | 0.82158384                          |
| OJconvt            | 6        | 0                          | 6.83333333  | 1.57056253                          |
| Banadhs            | 6        | 0                          | 5.16666667  | 1.96638416                          |
| Banskttt           | 6        | 0                          | 5.33333333  | 1.40237893                          |
| RCastyl            | 6        | 0                          | 5.00000000  | 0.54772256                          |
| RCaadva            | 6        | 0                          | 3.83333333  | 0.75277265                          |
| <u>CONDCODE=27</u> |          |                            |             |                                     |
| Scotabs            | 5        | 0                          | 6.40000000  | 2.94533530                          |
| Scotlty            | 5        | 0                          | 4.50000000  | 1.36930639                          |
| OJtaste            | 5        | 0                          | 5.00000000  | 1.54110350                          |
| OJconvt            | 5        | 0                          | 8.20000000  | 0.67082039                          |
| Banadhs            | 5        | 0                          | 5.80000000  | 1.30384048                          |
| Banskttt           | 5        | 0                          | 5.20000000  | 1.48323970                          |
| RCastyl            | 5        | 0                          | 3.00000000  | 1.76776695                          |
| RCaadva            | 5        | 0                          | 4.00000000  | 1.80277564                          |
| <u>CONDCODE=28</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 7.08333333  | 1.59426054                          |
| Scotlty            | 6        | 0                          | 5.16666667  | 0.87559504                          |
| OJtaste            | 6        | 0                          | 6.50000000  | 1.51657509                          |
| OJconvt            | 6        | 0                          | 8.58333333  | 1.96001701                          |
| Banadhs            | 6        | 0                          | 5.00000000  | 3.01662063                          |
| Banskttt           | 6        | 0                          | 6.41666667  | 1.88193163                          |
| RCastyl            | 6        | 0                          | 5.16666667  | 0.98319208                          |
| RCaadva            | 6        | 0                          | 2.91666667  | 1.15830336                          |

Table 4-2 (continued)

| <u>Variable</u>    | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=29</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 6.16666667  | 1.21106014                          |
| Scotlty            | 6        | 0                          | 5.58333333  | 1.59426054                          |
| OJtaste            | 6        | 0                          | 5.00000000  | 1.30384048                          |
| OJconvt            | 6        | 0                          | 7.75000000  | 2.20794022                          |
| Banadhs            | 6        | 0                          | 5.41666667  | 1.15830336                          |
| Banskttt           | 6        | 0                          | 4.83333333  | 0.93094934                          |
| RCastyl            | 6        | 0                          | 5.08333333  | 2.33273802                          |
| RCaadva            | 6        | 0                          | 3.75000000  | 1.69558250                          |
| <u>CONDCODE=30</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 7.08333333  | 1.65579789                          |
| Scotlty            | 6        | 0                          | 5.83333333  | 0.40824829                          |
| OJtaste            | 6        | 0                          | 5.66666667  | 1.16904519                          |
| OJconvt            | 6        | 0                          | 7.91666667  | 1.65579789                          |
| Banadhs            | 6        | 0                          | 5.00000000  | 1.41421356                          |
| Banskttt           | 6        | 0                          | 6.33333333  | 1.53839743                          |
| RCastyl            | 6        | 0                          | 5.50000000  | 0.54772256                          |
| RCaadva            | 6        | 0                          | 3.91666667  | 2.17753683                          |
| <u>CONDCODE=31</u> |          |                            |             |                                     |
| Scotabs            | 6        | 0                          | 5.16666667  | 2.71416040                          |
| Scotlty            | 6        | 0                          | 5.08333333  | 1.28127541                          |
| OJtaste            | 6        | 0                          | 4.83333333  | 1.57056253                          |
| OJconvt            | 6        | 0                          | 8.41666667  | 1.46344343                          |
| Banadhs            | 6        | 0                          | 6.41666667  | 1.35708020                          |
| Banskttt           | 6        | 0                          | 5.16666667  | 1.29099445                          |
| RCastyl            | 6        | 0                          | 4.58333333  | 0.80104099                          |
| RCaadva            | 6        | 0                          | 4.50000000  | 2.30217289                          |
| <u>CONDCODE=32</u> |          |                            |             |                                     |
| Scotabs            | 5        | 0                          | 7.30000000  | 2.56417628                          |
| Scotlty            | 5        | 0                          | 4.90000000  | 1.19373364                          |
| OJtaste            | 5        | 0                          | 6.10000000  | 1.43178211                          |
| OJconvt            | 5        | 0                          | 6.10000000  | 1.08397417                          |
| Banadhs            | 5        | 0                          | 7.40000000  | 1.14017543                          |
| Banskttt           | 5        | 0                          | 5.00000000  | 1.17260394                          |
| RCastyl            | 5        | 0                          | 4.10000000  | 1.08397417                          |
| RCaadva            | 5        | 0                          | 3.40000000  | 2.55929678                          |

Table 4-3

CONDITION NUMBERS ( $C_j$ ) COMPRISING EXPERIMENTAL  
TREATMENTS BY PRODUCT ATTRIBUTES

| A. <u>Scotties Tissues</u>    | Attributes                          |          |                                     |                  |            |
|-------------------------------|-------------------------------------|----------|-------------------------------------|------------------|------------|
|                               | Absorbent                           |          | Lint                                |                  |            |
|                               | Interval Between Defense and Attack |          | Interval Between Defense and Attack |                  |            |
| Type of Defense               | Two Days                            |          | Seven Days                          |                  |            |
|                               | Immediate                           |          | Immediate                           | Two Days         | Seven Days |
| Refutational                  |                                     |          |                                     |                  |            |
| Same                          | $C_1, C_9$                          | $C_7$    | $C_{15}$                            | $C_8$            | $C_{16}$   |
| Different                     | $C_5, C_{13}$                       | $C_3$    | $C_{11}$                            | $C_4$            | $C_{12}$   |
| Supportive                    |                                     |          |                                     |                  |            |
| Different                     | $C_{17}, C_{25}$                    |          |                                     | $C_{18}, C_{26}$ |            |
| Same                          |                                     | $C_{23}$ | $C_{31}$                            | $C_{24}$         | $C_{32}$   |
| Attack only                   |                                     | $C_{21}$ | $C_{29}$                            | $C_{22}$         | $C_{30}$   |
| Neither Defense<br>nor Attack |                                     |          | $C_{19}, C_{20}, C_{27}, C_{28}$    |                  |            |

Table 4-3 (continued)

B. Minute Maid Orange Juice

| <u>Type of Defense</u>        | <u>Attributes</u>                          |                   |                                                                       |                 |                   |
|-------------------------------|--------------------------------------------|-------------------|-----------------------------------------------------------------------|-----------------|-------------------|
|                               | <u>Taste</u>                               |                   | <u>Convenience</u>                                                    |                 |                   |
|                               | <u>Interval Between Defense and Attack</u> | <u>Seven Days</u> | <u>Interval Between Defense and Attack</u>                            | <u>Two Days</u> | <u>Seven Days</u> |
|                               | <u>Immediate</u>                           |                   | <u>Immediate</u>                                                      |                 |                   |
| Refutational                  |                                            |                   |                                                                       |                 |                   |
| Same                          | C <sub>3</sub> , C <sub>11</sub>           | C <sub>1</sub>    | C <sub>4</sub> , C <sub>12</sub>                                      | C <sub>2</sub>  | C <sub>10</sub>   |
| Different                     | C <sub>7</sub> , C <sub>15</sub>           | C <sub>5</sub>    | C <sub>8</sub> , C <sub>15</sub>                                      | C <sub>5</sub>  | C <sub>14</sub>   |
| Supportive                    |                                            |                   |                                                                       |                 |                   |
| Different                     | C <sub>19</sub> , C <sub>17</sub>          |                   | C <sub>20</sub> , C <sub>28</sub>                                     |                 |                   |
| Same                          |                                            | C <sub>17</sub>   |                                                                       | C <sub>18</sub> | C <sub>26</sub>   |
| Attack Only                   |                                            | C <sub>23</sub>   |                                                                       | C <sub>24</sub> | C <sub>32</sub>   |
| Neither Lefense<br>nor Attack |                                            |                   |                                                                       |                 |                   |
|                               |                                            |                   | C <sub>21</sub> , C <sub>22</sub> , C <sub>29</sub> , C <sub>30</sub> |                 |                   |

Table 4-3 (continued)

C. Band-Aid Bandages

| <u>Type of Defense</u>     | <u>Attributes</u>                          |                   |                                                                       |                   |
|----------------------------|--------------------------------------------|-------------------|-----------------------------------------------------------------------|-------------------|
|                            | <u>Skin-tight</u>                          |                   | <u>Adhesive</u>                                                       |                   |
|                            | <u>Interval Between Defense and Attack</u> | <u>Seven Days</u> | <u>Interval Between Defense and Attack</u>                            | <u>Seven Days</u> |
|                            | <u>Immediate</u>                           | <u>Two Days</u>   | <u>Immediate</u>                                                      | <u>Two Days</u>   |
| Refutational               |                                            |                   |                                                                       |                   |
| Same                       | C <sub>5</sub> , C <sub>13</sub>           | C <sub>3</sub>    | C <sub>6</sub> , C <sub>14</sub>                                      | C <sub>4</sub>    |
| Different                  | C <sub>1</sub> , C <sub>9</sub>            | C <sub>7</sub>    | C <sub>2</sub> , C <sub>10</sub>                                      | C <sub>8</sub>    |
| Supportive                 |                                            |                   |                                                                       |                   |
| Different                  | C <sub>21</sub> , C <sub>29</sub>          |                   | C <sub>22</sub> , C <sub>30</sub>                                     |                   |
| Same                       |                                            | C <sub>19</sub>   |                                                                       | C <sub>20</sub>   |
| Attack only                |                                            | C <sub>17</sub>   |                                                                       | C <sub>18</sub>   |
| Neither Defense nor Attack |                                            |                   | C <sub>23</sub> , C <sub>24</sub> , C <sub>31</sub> , C <sub>32</sub> |                   |

#### D. RCA Videodisc Player

78

refutational message also defending the absorbent attribute of Scotties tissues, but that was immediately followed by a message attacking a different attribute of Scotties--that is, the lint attribute. Subjects in Conditions 4 and 12 received the same treatment as those in Conditions 6 and 14, but the attacking message came two and seven days, respectively, following the defense.

Subjects in Conditions 2 and 10 received a refutational message defending the lint attribute of Scotties tissues, followed immediately by a message attacking the same attribute. For subjects in Conditions 8 and 16, the attacking message came two and seven days, respectively, after the defense. Subjects in Conditions 5 and 13 received a refutational message also defending the lint attribute of Scotties tissues, but that was immediately followed by a message attacking a different attribute of Scotties, i.e., the absorbent attribute. Subjects in Conditions 3 and 11 received the same attacking message as those in Conditions 5 and 13, two days and seven days, respectively, following the defense.

Subjects in Conditions 18 and 26 received a message supporting the absorbent attribute of Scotties tissues, followed immediately by a message attacking a different attribute--lint. Subjects in Conditions 23 and 31 received the same supportive message as those in Conditions 18 and 26,

but two days and seven days, respectively, later they received a message attacking the same absorbent attribute. Subjects in Conditions 17 and 25 received a message supporting the lint attribute of Scotties tissues, followed immediately by a message attacking a different attribute--absorbent. Subjects in Conditions 24 and 32 received the same supportive message as those in Conditions 17 and 25, but two days and seven days, respectively, later they received a message attacking the same lint attribute.

Subjects in Conditions 21, 29, 22 and 30 did not receive any defensive message for Scotties tissues, but those in the first two conditions received a message attacking the absorbent attribute and those in the last two conditions received a message attacking the lint attribute. Subjects in Conditions 19, 20, 27 and 28 received neither a defensive message nor an attacking message dealing with Scotties tissues.

#### Level of Significance for Subsequent Analyses

To test the hypotheses formulated in Chapter I, the data were analyzed using many t-tests of significance and analyses of variance. Generally, the greater the number of significance tests performed on a set of data, the greater is the impact on the level of significance,  $\alpha$ . Specifically, the effective level of significance declines. Equivalently, if the level of significance were set at  $\alpha < 0.05$ , and many tests of significance were performed,

the probability of finding significant results decreases (or, the probability of finding spuriously significant results increases). Consequently, the level of significance selected for the subsequent analyses was  $\alpha < 0.01$ .

#### Analysis of the Data

The proper procedure for analyzing the data was suggested by an examination of Table 4-3. For each product the three independent variables are "type of defense," the product "attributes," and the "interval between defense and attack." For any attribute and for either type of refutational defense, where the attack immediately followed the defense, subjects in two different conditions provided ratings for their belief in the particular attribute. The first step was to test whether the difference in the ratings of respondents in each of the two different conditions was significant. If there were no significant differences, then the ratings from each pair of conditions could be pooled, and an analysis of variance could be performed. The analysis would consist of two levels of "type of defense" (refutational-same and refutational-different), two levels of "attributes" and three levels of "interval between defense and attack" (immediate, two days and seven days).

A second analysis of variance for each product was also suggested. This analysis would consist of two levels of "defense" (supportive-same and attack only), two levels

of "attributes" and two levels of "interval between defense and attack" (two days and seven days).

In addition, for each attribute respondents from two different conditions provided ratings for the supportive-different treatment. If the ratings from each pair of conditions were not significantly different from each other, they could be pooled. Then, for each product, these pooled ratings could be tested for significance between attributes.

Finally, for each product, subjects in four different conditions provided ratings for the "neither defense nor attack" treatment. Significance among the ratings of the four conditions could be tested by means of a one-way analysis of variance. If there were no significance, then the ratings of the four conditions could be pooled.

As Table 4-4 indicates, there were no significant differences in the ratings of condition pairs for any refutational-same or refutational-different defense of any product or attribute. Consequently, the ratings of respondents in each of the condition pairs were pooled prior to performing any analysis of variance.

Similarly, there were no significant differences in the ratings of condition pairs for any supportive-different defense of any product or attribute. Consequently, the ratings from each pair of supportive-different conditions were pooled prior to testing for significant ratings differences between a product's attributes.

Table 4-4

TEST OF SIGNIFICANT DIFFERENCE BETWEEN RATINGS OF CONDITION PAIRS  
BY PRODUCT ATTRIBUTE AND TYPE OF DEFENSE

| <u>Product</u>                  | <u>Attribute<br/>Attacked</u> | <u>Type of<br/>Defense</u> | <u>Condition</u> | <u>n</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> | <u>t</u> | <u><math>\alpha</math></u> |
|---------------------------------|-------------------------------|----------------------------|------------------|----------|-------------|-------------------------------|----------|----------------------------|
| Scotties<br>Tissue <sup>3</sup> | Absorbent                     | Refutational-              | C <sub>1</sub>   | 6        | 5.5000      | 1.30384048                    |          |                            |
|                                 |                               | Same                       | C <sub>9</sub>   | 6        | 5.5000      | 1.61245155                    | 0.0000   | 1.0000                     |
|                                 |                               | Refutational-              | C <sub>5</sub>   | 6        | 5.1667      | 1.47196014                    |          |                            |
|                                 |                               | Different                  | C <sub>13</sub>  | 6        | 5.0000      | 0.77459667                    | 0.2454   | 0.8111                     |
|                                 |                               | Supportive-                | C <sub>17</sub>  | 6        | 4.9167      | 1.06848803                    |          |                            |
|                                 | Lint                          | Different                  | C <sub>25</sub>  | 5        | 6.2000      | 1.60468065                    | -1.5891  | 0.1465                     |
|                                 |                               | Refutational-              | C <sub>2</sub>   | 6        | 5.3333      | 0.93094934                    |          |                            |
|                                 |                               | Same                       | C <sub>10</sub>  | 5        | 5.7000      | 0.57008771                    | -0.7654  | 0.4636                     |
|                                 |                               | Refutational-              | C <sub>6</sub>   | 6        | 4.8333      | 0.98319208                    |          |                            |
|                                 |                               | Different                  | C <sub>14</sub>  | 6        | 5.0833      | 0.58452260                    | -0.5354  | 0.6041                     |
|                                 |                               | Supportive-                | C <sub>18</sub>  | 5        | 4.0000      | 1.83711731                    |          |                            |
|                                 |                               | Different                  | C <sub>26</sub>  | 6        | 4.7500      | 1.29421791                    | -0.7945  | 0.4474                     |

Table 4-4 (continued)

| <u>Product</u>              | <u>Attribute<br/>Attacked</u> | <u>Type of<br/>Defense</u> | <u>Condition</u> | <u>n</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> | <u>t</u> | <u><math>\alpha</math></u> |
|-----------------------------|-------------------------------|----------------------------|------------------|----------|-------------|-------------------------------|----------|----------------------------|
| Minute Maid<br>Orange Juice | Taste                         | Refutational-              | C <sub>3</sub>   | 5        | 6.8000      | 2.13892496                    |          |                            |
|                             |                               | Same                       | C <sub>11</sub>  | 6        | 5.1667      | 1.80739223                    | 1.3750   | 0.2024                     |
|                             |                               | Refutational-              | C <sub>7</sub>   | 5        | 5.1000      | 2.53475837                    |          |                            |
|                             |                               | Different                  | C <sub>15</sub>  | 6        | 4.3333      | 2.31660671                    | 0.5241   | 0.6129                     |
|                             |                               | Supportive-                | C <sub>19</sub>  | 6        | 4.7500      | 2.36114379                    |          |                            |
|                             |                               | Different                  | C <sub>27</sub>  | 5        | 5.0000      | 1.54110350                    | -0.2026  | 0.8440                     |
|                             |                               | Refutational-              | C <sub>4</sub>   | 5        | 6.6000      | 2.98747385                    |          |                            |
|                             |                               | Same                       | C <sub>12</sub>  | 6        | 6.9167      | 2.87083031                    | -0.1789  | 0.8620                     |
|                             |                               | Refutational-              | C <sub>8</sub>   | 6        | 7.0833      | 1.71512876                    |          |                            |
|                             |                               | Different                  | C <sub>16</sub>  | 6        | 7.9167      | 2.13111864                    | -0.7462  | 0.4727                     |
|                             |                               | Supportive-                | C <sub>20</sub>  | 6        | 6.5000      | 1.92353841                    |          |                            |
|                             |                               | Different                  | C <sub>28</sub>  | 6        | 8.5833      | 1.96001701                    | -1.8582  | 0.0928                     |

Table 4-4 (continued)

| <u>Product</u>       | <u>Attribute<br/>Attacked</u> | <u>Type of<br/>Defense</u> | <u>Condition</u> | <u>n</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> | <u>t</u> | <u><math>\alpha</math></u> |
|----------------------|-------------------------------|----------------------------|------------------|----------|-------------|-------------------------------|----------|----------------------------|
| Band-Aid<br>Bandages | Skin-tight                    | Refutational-              | C <sub>5</sub>   | 6        | 5.4167      | 1.65579789                    |          |                            |
|                      |                               | Same                       | C <sub>13</sub>  | 6        | 5.7500      | 2.18517734                    | -0.2978  | 0.7719                     |
|                      |                               | Refutational-              | C <sub>1</sub>   | 6        | 5.7500      | 1.86413519                    |          |                            |
|                      |                               | Different                  | C <sub>9</sub>   | 6        | 6.4167      | 1.85517295                    | -0.6209  | 0.5485                     |
|                      |                               | Supportive-                | C <sub>21</sub>  | 5        | 5.6000      | 1.78185297                    |          |                            |
|                      |                               | Different                  | C <sub>29</sub>  | 6        | 4.8333      | 0.93094934                    | 0.9203   | 0.3814                     |
|                      |                               | Refutational-              | C <sub>6</sub>   | 6        | 6.0833      | 2.01038968                    |          |                            |
|                      |                               | Same                       | C <sub>14</sub>  | 6        | 5.5000      | 2.32379001                    | 0.4650   | 0.6519                     |
|                      |                               | Refutational-              | C <sub>2</sub>   | 6        | 6.7500      | 1.69558250                    |          |                            |
|                      |                               | Different                  | C <sub>10</sub>  | 5        | 6.2000      | 2.28035085                    | 0.4594   | 0.6568                     |
|                      |                               | Supportive-                | C <sub>22</sub>  | 5        | 5.5000      | 1.83711731                    |          |                            |
|                      |                               | Different                  | C <sub>30</sub>  | 6        | 5.0000      | 1.41421356                    | 0.5110   | 0.6216                     |

Table 4-4 (continued)

| <u>Product</u>            | <u>Attribute<br/>Attacked</u> | <u>Type of<br/>Defense</u> | <u>Condition</u> | <u>n</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> | <u><math>\alpha</math></u> |
|---------------------------|-------------------------------|----------------------------|------------------|----------|-------------|-------------------------------|----------------------------|
| RCA Video-<br>disc Player | Stylus                        | Refutational-              | C <sub>7</sub>   | 5        | 4.7000      | 0.97467943                    |                            |
|                           |                               | Same                       | C <sub>15</sub>  | 6        | 4.0000      | 2.50998008                    | 0.5738                     |
|                           |                               | Refutational-              | C <sub>3</sub>   | 5        | 4.6000      | 1.673332005                   |                            |
|                           |                               | Different                  | C <sub>11</sub>  | 6        | 3.4167      | 1.85517295                    | 1.0999                     |
|                           |                               | Supportive-                | C <sub>23</sub>  | 6        | 4.4167      | 2.03510851                    |                            |
|                           | Advantage                     | Different                  | C <sub>31</sub>  | 6        | 4.5833      | 0.80104099                    | 0.8557                     |
|                           |                               | Refutational-              | C <sub>8</sub>   | 6        | 3.4167      | 1.80046290                    |                            |
|                           |                               | Same                       | C <sub>16</sub>  | 6        | 2.8333      | 1.75119007                    | 0.5820                     |
|                           |                               | Refutational-              | C <sub>4</sub>   | 5        | 2.7000      | 1.68077363                    |                            |
|                           |                               | Different                  | C <sub>12</sub>  | 6        | 4.3333      | 2.06559112                    | -1.4165                    |
|                           |                               | Supportive-                | C <sub>24</sub>  | 5        | 5.5000      | 0.93541435                    | 0.1903                     |
|                           |                               | Different                  | C <sub>32</sub>  | 5        | 3.4000      | 2.55929678                    | 1.7233                     |
|                           |                               |                            |                  |          |             |                               | 0.1231                     |

As is evident from Table 4-5, for each of the four experimental products and the supportive-different treatment, respondents' ratings of a particular product attribute were the same, regardless of which of the product's attributes had been attacked. For example, there was no significant difference in the ratings of the "absorbent" attribute of Scotties tissues between those who had received a message attacking that attribute and those who had received a message supporting that attribute. Similarly, there was no significant difference in the ratings of the "lint" attribute of Scotties tissues between those who had received a message attacking that attribute and those who had received a message supporting that attribute. It would seem that when a supportive message and an attacking message focused on different attributes, the supportive message mitigated the effect of the attack and bolstered the belief level in both the supported and non-supported (attacked) product attributes. In other words, the supportive defense provided inoculation that was generalized for both of a product's attributes.

That the effect of the attacking messages was mitigated by the supportive messages can be discerned by comparing the mean belief levels in the product's attributes, where those were the attributes attacked (Table 4-5), with the mean belief levels in the attributes for the "neither defense nor attack" treatment (Table 4-6). There were no

Table 4-5

TEST OF SIGNIFICANT DIFFERENCE BETWEEN RATINGS OF POOLED SUPPORTIVE-  
DIFFERENT CONDITION PAIRS BY PRODUCT ATTRIBUTE ATTACKED

| Product                           | Rated       | Attribute<br>Attacked | Condi-<br>tion | n  | Mean   | Standard<br>Deviation | t       | $\alpha$ |
|-----------------------------------|-------------|-----------------------|----------------|----|--------|-----------------------|---------|----------|
| Scotties<br>Tissues               | Absorbent   | Lint                  | 18, 26         | 11 | 6.0909 | 1.53002297            |         |          |
|                                   |             | Absorbent             | 17, 25         | 11 | 5.5000 | 1.43178211            | -0.9353 | 0.3608   |
|                                   | Lint        | Lint                  | 18, 26         | 11 | 4.4091 | 1.53000297            |         |          |
|                                   |             | Absorbent             | 17, 25         | 11 | 5.3182 | 1.95285339            | 1.2154  | 0.2384   |
| Minute<br>Maid<br>Orange<br>Juice | Taste       | Convenience           | 20, 28         | 12 | 6.0417 | 1.51445060            |         |          |
|                                   |             | Taste                 | 19, 27         | 11 | 4.8636 | 1.93766495            | 1.6323  | 0.1175   |
|                                   | Convenience | Convenience           | 20, 28         | 12 | 7.5417 | 2.14749678            |         |          |
|                                   |             | Taste                 | 19, 27         | 11 | 7.7727 | 1.45539748            | -0.2991 | 0.7678   |
| Band-Aid<br>Bandages              | Skin-tight  | Adhesive              | 22, 30         | 11 | 5.8182 | 1.64731186            |         |          |
|                                   |             | Skin-tight            | 21, 29         | 11 | 5.1818 | 1.36515067            | 0.9865  | 0.3357   |
|                                   | Adhesive    | Adhesive              | 22, 30         | 11 | 5.2273 | 1.55505042            |         |          |
|                                   |             | Skin-tight            | 21, 29         | 11 | 5.9545 | 1.38662442            | -1.1577 | 0.2606   |
| RCA Video-<br>disc Player         | Stylus      | Advantage             | 24, 32         | 10 | 4.8000 | 1.11055542            |         |          |
|                                   |             | Stylus                | 23, 31         | 12 | 4.5000 | 1.47709789            | 0.5289  | 0.6027   |
|                                   | Advantage   | Advantage             | 24, 32         | 10 | 4.4500 | 2.12720474            |         |          |
|                                   |             | Stylus                | 23, 31         | 12 | 4.8750 | 1.77258158            | -0.5116 | 0.6145   |

Table 4-6

MEAN BELIEF LEVELS IN PRODUCT ATTRIBUTES FOR  
NEITHER DEFENSE NOR ATTACK CONDITIONS

| <u>Product</u>                    | <u>Attribute</u> | <u>Neither Defense<br/>Nor Attack<br/>Mean Belief Level</u> | <u>Standard<br/>Deviation</u> |
|-----------------------------------|------------------|-------------------------------------------------------------|-------------------------------|
| Scotties<br>Tissues               | Absorbent        | 6.7609                                                      | 1.65054788                    |
|                                   | Lint             | 5.3043                                                      | 1.08438431                    |
| Minute<br>Maid<br>Orange<br>Juice | Taste            | 5.3636                                                      | 1.18705135                    |
|                                   | Convenience      | 7.7273                                                      | 1.81086189                    |
| Band-Aid<br>Bandages              | Skin-tight       | 5.1591                                                      | 1.42583613                    |
|                                   | Adhesive         | 6.5682                                                      | 1.48240036                    |
| RCA Video-<br>disc<br>Player      | Stylus           | 5.0909                                                      | 0.62936785                    |
|                                   | Advantage        | 4.6364                                                      | 1.05989463                    |

significant differences between corresponding mean belief levels. Thus, taking the "neither defense nor attack" ratings as an individual's initial level of belief in a product's attributes, the attacking message, when preceded by a supportive-different defense, was unable to significantly lower those initial belief levels.

The mean belief level in a particular product attribute for the "neither defense nor attack" treatment that is presented in Table 6 was calculated as the mean rating of the four condition codes that supplied a measure of the belief level for that particular product attribute. This was done after a one-way analysis of variance did not disclose any significant ratings differences among the four relevant condition codes for each product attribute (Table 4-7).

Supportive-Same vs. No Defense  
and Immunization Over Time

A 2x2x2 analysis of variance model was used to examine the effect of different supportive defenses (supportive-same and no defense), time between defensive treatment and attack (two days and seven days) and exposure to a product's attribute (two attributes per product) on respondents' belief levels in both of a product's attributes. The results are shown in Table 4-8.

Table 4-7

ONE WAY ANALYSIS OF VARIANCE OF PRODUCT  
ATTRIBUTE BELIEF LEVELS AMONG CONDITION  
CODES IN THE 'NEITHER DEFENSE NOR ATTACK' TREATMENT

A. Scotties Tissues

| <u>Dependent Variable: Absorbent</u> |           |             |             |          |                            |
|--------------------------------------|-----------|-------------|-------------|----------|----------------------------|
| <u>Source</u>                        | <u>DF</u> | <u>S.S.</u> | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Condition Code<br>(19,20,27,28)      | 3         | 2.60978261  | 0.86992754  | 0.29     | 0.8332                     |
| Error                                | 19        | 57.32500000 | 3.01710526  |          |                            |

| <u>Dependent Variable: Lint</u> |    |             |            |      |        |
|---------------------------------|----|-------------|------------|------|--------|
| Condition Code<br>(19,20,27,28) | 3  | 7.82789855  | 2.60929952 | 2.75 | 0.0713 |
| Error                           | 19 | 18.04166667 | 0.94956140 |      |        |

B. Minute Maid Orange Juice

| <u>Dependent Variable: Taste</u> |    |             |            |      |        |
|----------------------------------|----|-------------|------------|------|--------|
| Condition Code<br>(21,22,29,30)  | 3  | 1.75757576  | 0.58585859 | 0.38 | 0.7694 |
| Error                            | 18 | 27.83333333 | 1.54629630 |      |        |

| <u>Dependent Variable: Convenience</u> |    |             |            |      |        |
|----------------------------------------|----|-------------|------------|------|--------|
| Condition Code<br>(21,22,29,30)        | 3  | 0.78030303  | 0.26010101 | 0.07 | 0.9758 |
| Error                                  | 18 | 68.08333333 | 3.78240741 |      |        |

Table 4-7 (continued)

C. Band-Aid Bandages

| <u>Dependent Variable: Skin-tight</u> |           |             |             |          |                            |
|---------------------------------------|-----------|-------------|-------------|----------|----------------------------|
| <u>Source</u>                         | <u>DF</u> | <u>S.S.</u> | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Condition Code<br>(23,24,31,32)       | 3         | 5.02631515  | 1.67550505  | 0.80     | 0.5096                     |
| Error                                 | 18        | 37.66666667 | 2.09259259  |          |                            |

| <u>Dependent Variable: Adhesive</u> |    |             |            |      |        |
|-------------------------------------|----|-------------|------------|------|--------|
| Condition Code<br>(23,24,31,32)     | 3  | 5.53939394  | 1.84646465 | 0.82 | 0.5005 |
| Error                               | 18 | 40.60833333 | 2.25601852 |      |        |

D. RCA Videodisc Player

| <u>Dependent Variable: Stylus</u> |    |            |            |      |        |
|-----------------------------------|----|------------|------------|------|--------|
| Condition Code<br>(17,18,25,26)   | 3  | 0.61818182 | 0.20606061 | 0.48 | 0.6991 |
| Error                             | 18 | 7.70000000 | 0.42777778 |      |        |

| <u>Dependent Variable: Advantage</u> |    |             |            |      |        |
|--------------------------------------|----|-------------|------------|------|--------|
| Condition Code<br>(17,18,25,26)      | 3  | 8.95757576  | 2.98585859 | 3.67 | 0.0318 |
| Error                                | 18 | 14.63333333 | 0.81296296 |      |        |

Table 4-8

ANALYSIS OF VARIANCE OF BELIEF LEVELS IN PRODUCT'S  
ATTRIBUTES BY TYPE OF DEFENSE (SUPPORTIVE-SAME VS.  
NO DEFENSE), INTERVAL BETWEEN DEFENSE AND ATTACK  
(TWO DAYS AND SEVEN DAYS) AND EXPOSURE TO TWO OF  
A PRODUCT'S ATTRIBUTES

A. Scotties Tissues

| <u>Dependent Variable: Absorbent</u> |           |              |             |          |                            |
|--------------------------------------|-----------|--------------|-------------|----------|----------------------------|
| <u>Source</u>                        | <u>DF</u> | <u>S.S.</u>  | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                              | 1         | 0.56818182   | 0.56818182  | 0.19     | 0.6617                     |
| Attribute                            | 1         | 12.21619200  | 12.21619200 | 4.18     | 0.0482                     |
| Time                                 | 1         | 2.02041682   | 2.02041682  | 0.69     | 0.4110                     |
| Defense x<br>Attribute               | 1         | 0.40880800   | 0.40880800  | 0.14     | 0.7105                     |
| Defense x<br>Time                    | 1         | 0.94890136   | 0.94890136  | 0.33     | 0.5722                     |
| Attribute<br>x Time                  | 1         | 2.41837121   | 2.41837121  | 0.83     | 0.3688                     |
| Defense x<br>Attribute<br>x Time     | 1         | 1.85625000   | 1.85625000  | 0.64     | 0.4305                     |
| Error                                | 36        | 105.10833333 | 2.91967593  |          |                            |

| <u>Dependent Variable: Lint</u>  |    |             |            |      |        |
|----------------------------------|----|-------------|------------|------|--------|
| Defense                          | 1  | 0.02272727  | 0.02272727 | 0.02 | 0.8950 |
| Attribute                        | 1  | 1.03281780  | 1.03281780 | 0.80 | 0.3761 |
| Time                             | 1  | 3.18747642  | 3.18747642 | 2.48 | 0.1241 |
| Defense x<br>Attribute           | 1  | 1.19786401  | 1.19786401 | 0.93 | 0.3409 |
| Defense x<br>Time                | 1  | 7.28562964  | 7.28562964 | 5.67 | 0.0227 |
| Attribute<br>x Time              | 1  | 1.60303030  | 1.60303030 | 1.25 | 0.2715 |
| Defense x<br>Attribute<br>x Time | 1  | 3.81893939  | 3.81893939 | 2.97 | 0.0934 |
| Error                            | 36 | 46.28333333 | 1.28564815 |      |        |

Table 4-8 (continued)

B. Minute Maid Orange Juice

| <u>Dependent Variable: Taste</u>       |           |             |             |          |                            |
|----------------------------------------|-----------|-------------|-------------|----------|----------------------------|
| <u>Source</u>                          | <u>DF</u> | <u>S.S.</u> | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                                | 1         | 0.00568182  | 0.00568182  | 0.00     | 0.9616                     |
| Attribute                              | 1         | 12.65201811 | 12.65201811 | 5.22     | 0.0283                     |
| Time                                   | 1         | 7.73177040  | 7.73177040  | 3.19     | 0.0825                     |
| Defense x Attribute                    | 1         | 0.95996542  | 0.95996542  | 0.40     | 0.5331                     |
| Defense x Time                         | 1         | 12.88314001 | 12.88314001 | 5.32     | 0.0270                     |
| Attribute x Time                       | 1         | 0.18200758  | 0.18200758  | 0.08     | 0.7856                     |
| Defense x Attribute x Time             | 1         | 0.04261364  | 0.04261364  | 0.02     | 0.8952                     |
| Error                                  | 36        | 87.24166667 | 2.42337963  |          |                            |
| <u>Dependent Variable: Convenience</u> |           |             |             |          |                            |
| Defense                                | 1         | 1.45454545  | 1.45454545  | 0.57     | 0.4568                     |
| Attribute                              | 1         | 37.60132969 | 37.60132969 | 14.63    | 0.0005                     |
| Time                                   | 1         | 4.37036753  | 4.37036753  | 1.70     | 0.2005                     |
| Defense x Attribute                    | 1         | 8.36996787  | 8.36996787  | 3.26     | 0.0795                     |
| Defense x Time                         | 1         | 0.82386521  | 0.82386521  | 0.32     | 0.5748                     |
| Attribute x Time                       | 1         | 2.68200758  | 2.68200758  | 1.04     | 0.3139                     |
| Defense x Attribute x Time             | 1         | 9.58806818  | 9.58806818  | 3.73     | 0.0613                     |
| Error                                  | 36        | 92.54166667 | 2.57060185  |          |                            |

Table 4-8 (continued)

C. Band-Aid Bandages

| <u>Dependent Variable: Skin-tight</u> |           |              |             |          |                            |
|---------------------------------------|-----------|--------------|-------------|----------|----------------------------|
| <u>Source</u>                         | <u>DF</u> | <u>S.S.</u>  | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                               | 1         | 1.50307422   | 1.50307422  | 0.62     | 0.4364                     |
| Attribute                             | 1         | 0.20603818   | 0.20603818  | 0.08     | 0.7725                     |
| Time                                  | 1         | 3.92285562   | 3.92285562  | 1.62     | 0.2117                     |
| Defense x Attribute                   | 1         | 0.01018522   | 0.01018522  | 0.00     | 0.9487                     |
| Defense x Time                        | 1         | 0.01168875   | 0.01168875  | 0.00     | 0.9451                     |
| Attribute x Time                      | 1         | 0.24292803   | 0.24292803  | 0.10     | 0.7536                     |
| Defense x Attribute x Time            | 1         | 26.53100775  | 26.53100775 | 10.93    | 0.0021                     |
| Error                                 | 37        | 89.85000000  | 2.42837838  |          |                            |
| <u>Dependent Variable: Adhesive</u>   |           |              |             |          |                            |
| Defense                               | 1         | 1.57708608   | 1.57708608  | 0.41     | 0.5251                     |
| Attribute                             | 1         | 14.16955050  | 14.16955050 | 3.70     | 0.0622                     |
| Time                                  | 1         | 1.78909103   | 1.78909103  | 0.47     | 0.4986                     |
| Defense x Attribute                   | 1         | 0.27242711   | 0.27242711  | 0.07     | 0.7912                     |
| Defense x Time                        | 1         | 0.11442825   | 0.11442825  | 0.03     | 0.8637                     |
| Attribute x Time                      | 1         | 0.01100876   | 0.01100876  | 0.00     | 0.9575                     |
| Defense x Attribute x Time            | 1         | 2.30251938   | 2.30251938  | 0.60     | 0.4431                     |
| Error                                 | 37        | 141.74166667 | 3.83085586  |          |                            |

Table 4-8 (continued)

D. RCA Videodisc Player

| <u>Dependent Variable: Stylus</u>    |           |              |             |          |                            |
|--------------------------------------|-----------|--------------|-------------|----------|----------------------------|
| <u>Source</u>                        | <u>DF</u> | <u>S.S.</u>  | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                              | 1         | 1.39930830   | 1.39930830  | 0.56     | 0.4573                     |
| Attribute                            | 1         | 13.06897023  | 13.06897023 | 5.27     | 0.0275                     |
| Time                                 | 1         | 1.82172524   | 1.82172524  | 0.73     | 0.3969                     |
| Defense x Attribute                  | 1         | 0.54103836   | 0.54103836  | 0.22     | 0.6432                     |
| Defense x Time                       | 1         | 6.81904806   | 6.81904806  | 2.75     | 0.1057                     |
| Attribute x Time                     | 1         | 0.30378578   | 0.30378578  | 0.12     | 0.7283                     |
| Defense x Attribute x Time           | 1         | 4.59612403   | 4.59612403  | 1.85     | 0.1816                     |
| Error                                | 37        | 91.75000000  | 2.47972973  |          |                            |
| <u>Dependent Variable: Advantage</u> |           |              |             |          |                            |
| Defense                              | 1         | 20.78805446  | 20.78805446 | 7.12     | 0.0112                     |
| Attribute                            | 1         | 1.39281810   | 1.39281810  | 0.48     | 0.4940                     |
| Time                                 | 1         | 0.00679064   | 0.00679064  | 0.00     | 0.9618                     |
| Defense x Attribute                  | 1         | 1.33981894   | 1.33981894  | 0.46     | 0.5023                     |
| Defense x Time                       | 1         | 10.63204167  | 10.63204167 | 3.64     | 0.0641                     |
| Attribute x Time                     | 1         | 0.07329273   | 0.07329273  | 0.03     | 0.8750                     |
| Defense x Attribute x Time           | 1         | 0.94496124   | 0.74496124  | 0.26     | 0.6164                     |
| Error                                | 37        | 108.00000000 | 2.91891892  |          |                            |

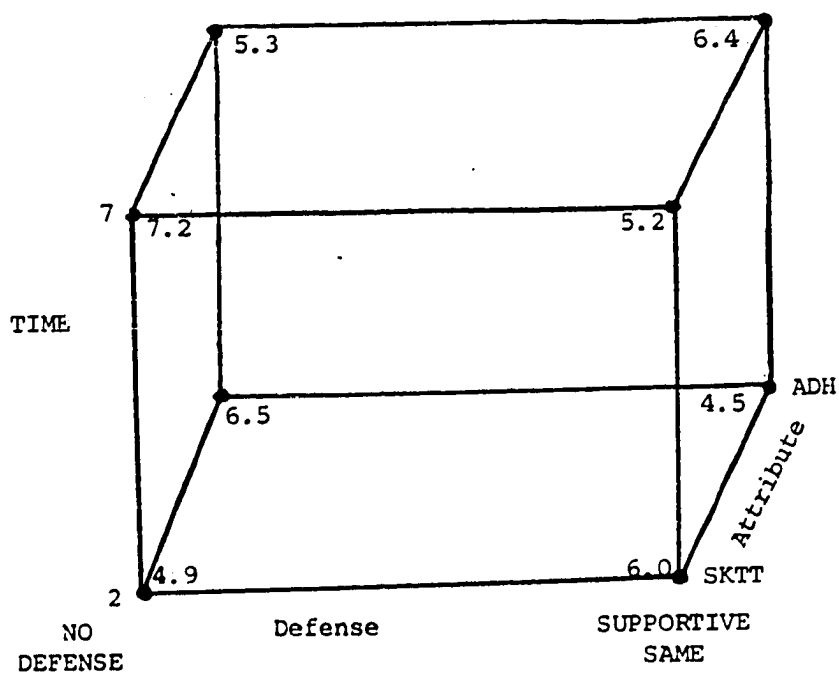
The type of defense, the particular attribute to which respondents were exposed and the interval between the defense and the attack were not significant in accounting for the variation in the belief levels in both attributes of Scotties tissues and RCA videodisc players, and the taste attribute of Minute Maid orange juice and the adhesive attribute of Band-Aid bandages. Thus, one might conclude that the exhibited variation in those belief levels was either random or due to some other factor(s) and that part of Hypothesis One, viz., supportive defenses are superior to a no-defense treatment should be rejected.

Such a conclusion, though, is not warranted at this juncture. Further analysis of Table 4-8 reveals a significant ( $\alpha < 0.0021$ ) high order interaction (defense x attribute x time) for the skin-tight attributes of Band-Aid bandages. This interaction was plotted (Figure 4-1) and examined, but the results defy explanation.

Looking at the convenience attribute of Minute Maid orange juice, one notes that there is a significant ( $\alpha < 0.0005$ ) main effect, namely, the variable "attribute." For this analysis, respondents received messages relating either to taste or convenience, but not both. However, all of the subjects rated their belief levels in both attributes. The fact that there is a significant "attribute" effect means that the variation in respondents' ratings of "convenience"

Figure 4-1

MEAN BELIEF LEVELS  
 BAND-AID BANDAGES - SKIN-TIGHT ATTRIBUTE  
 THIRD ORDER INTERACTION (DEFENSE X ATTRIBUTE X TIME)



is due to their having been exposed to different attributes. Specifically, those exposed to a supportive and/or an attacking message relating to "taste" rated "convenience" 8.26, while those exposed to a supportive and/or an attacking message relating to "convenience" rated "convenience" 6.43.

All of the analyses of Table 4-8 assumed that if inoculation theory applied to the conditions of the current experiment, it could be generalized to both attributes of a product. Any differences in ratings would be attributed to the type of defense and/or the interval between the defense and the attack. The significant interaction effect for the skin-tight attribute of Band-Aid bandages, coupled with the significant main "attribute" effect for the convenience attribute of Minute Maid orange juice, suggest that the generalizability assumption may not be warranted. Rather, the analysis should be conducted separately for each attribute.

Further weight is given to the correctness of this conclusion by the results of the 2x3x2 analysis of variance model that was used to examine the effect of different refutational defenses (refutational-same and refutational-different), time between defensive treatment and attack (immediate, two days and seven days) and exposure to a product's attribute (two attributes per product) on respondents' belief levels in both of a product's attributes.

(Table 4-9). An analysis of Table 4-9 discloses that an interaction and several main effects, all involving the variable "attribute," are significant. Specifically, the second order interaction, defense x attribute for the lint attribute of Scotties tissues, and the main effect, attribute, for the absorbent attribute of Scotties tissues, the convenience attribute of Minute Maid orange juice, and the stylus attribute of the RCA videodisc player are all significant ( $\alpha < 0.006$ ). Consequently, it was decided that the analysis should proceed by treating each product attribute separately.

The results of the analysis of the refutational defense treatments are in Table 4-10. The results of the analysis of the supportive defense treatments are in Table 4-11. In both tables, the dependent variable refers to the product attribute that was refuted. This was the same attribute that was attacked.

### Discussion

The "neither defense nor attack" treatment in the current experiment was the measure of respondents' initial belief levels in the truth of statements regarding the experimental product's attributes. The "no defense" treatment measured the impact of the attacking messages. These two treatments set the probable limits within which the effects of the different defensive treatments could take

Table 4-9

ANALYSIS OF VARIANCE OF BELIEF LEVELS IN PRODUCT'S  
ATTRIBUTES BY TYPE OF DEFENSE (REFUTATIONAL-SAME VS.  
REFUTATIONAL-DIFFERENT), INTERVAL BETWEEN DEFENSE  
AND ATTACK (IMMEDIATE, TWO DAYS AND SEVEN DAYS)  
AND EXPOSURE TO TWO OF A PRODUCT'S ATTRIBUTES

A. Scotties Tissues

Dependent Variable: Absorbent

| <u>Source</u>                    | <u>DF</u> | <u>S.S.</u>  | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
|----------------------------------|-----------|--------------|-------------|----------|----------------------------|
| Defense                          | 1         | 1.69836957   | 1.69836957  | 0.68     | 0.4120                     |
| Attribute                        | 1         | 51.00271739  | 51.00271739 | 20.42    | 0.0001                     |
| Time                             | 2         | 7.70160385   | 3.85080193  | 1.54     | 0.2203                     |
| Defense x<br>Attribute           | 1         | 1.60815260   | 1.60815260  | 0.64     | 0.4247                     |
| Defense<br>x Time                | 2         | 12.10293557  | 6.05146779  | 2.42     | 0.0951                     |
| Attribute<br>x Time              | 2         | 23.94723074  | 11.97361537 | 4.79     | 0.0108                     |
| Defense x<br>Attribute<br>x Time | 2         | 12.94467209  | 6.47233605  | 2.59     | 0.0812                     |
| Error                            | 80        | 199.80681818 | 2.49758523  |          |                            |

Dependent Variable: Lint

|                                  |    |              |             |       |        |
|----------------------------------|----|--------------|-------------|-------|--------|
| Defense                          | 1  | 0.02445652   | 0.02445652  | 0.02  | 0.8985 |
| Attribute                        | 1  | 9.45923913   | 9.45923913  | 6.33  | 0.0139 |
| Time                             | 2  | 3.97069534   | 1.98534767  | 1.33  | 0.2708 |
| Defense x<br>Attribute           | 1  | 22.91030115  | 22.91030115 | 15.33 | 0.0002 |
| Defense<br>x Time                | 2  | 3.28674364   | 1.64337182  | 1.10  | 0.3381 |
| Attribute<br>x Time              | 2  | 3.44138835   | 1.72069418  | 1.15  | 0.3215 |
| Defense x<br>Attribute<br>x Time | 2  | 1.45409615   | 0.72704808  | 0.49  | 0.6167 |
| Error                            | 80 | 119.59166667 | 1.49469583  |       |        |

Table 4-9 (continued)

B. Minute Maid Orange Juice

| <u>Dependent Variable: Taste</u> |           |              |             |          |                            |
|----------------------------------|-----------|--------------|-------------|----------|----------------------------|
| <u>Source</u>                    | <u>DF</u> | <u>S.S.</u>  | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                          | 1         | 4.36881488   | 4.36881488  | 1.02     | 0.3165                     |
| Attribute                        | 1         | 3.30603909   | 3.30603909  | 0.77     | 0.3831                     |
| Time                             | 2         | 8.01718044   | 4.00859022  | 0.93     | 0.3978                     |
| Defense x Attribute              | 1         | 3.92563635   | 3.92563635  | 0.91     | 0.3422                     |
| Defense x Time                   | 2         | 14.16536392  | 7.08268196  | 1.65     | 0.1990                     |
| Attribute x Time                 | 2         | 2.18573671   | 1.09286836  | 0.25     | 0.7762                     |
| Defense x Attribute x Time       | 2         | 3.56426550   | 1.78213275  | 0.41     | 0.6621                     |
| Error                            | 80        | 343.92348485 | 4.29904356  |          |                            |

| <u>Dependent Variable: Convenience</u> |    |              |             |      |        |
|----------------------------------------|----|--------------|-------------|------|--------|
| Defense                                | 1  | 3.86313599   | 3.86313599  | 1.03 | 0.3126 |
| Attribute                              | 1  | 29.87065222  | 29.87065222 | 7.98 | 0.0060 |
| Time                                   | 2  | 7.73567763   | 3.86783882  | 1.03 | 0.3604 |
| Defense x Attribute                    | 1  | 1.93959432   | 1.93959432  | 0.52 | 0.4736 |
| Defense x Time                         | 2  | 10.87266639  | 5.43633320  | 1.45 | 0.2400 |
| Attribute x Time                       | 2  | 0.60821343   | 0.30410672  | 0.08 | 0.9220 |
| Defense x Attribute x Time             | 2  | 6.25623921   | 3.12811961  | 0.84 | 0.4372 |
| Error                                  | 80 | 299.32121212 | 3.74151515  |      |        |

Table 4-9 (continued)

C. Band-Aid Bandages

| <u>Dependent Variable: Skin-tight</u> |           |              |             |          |                            |
|---------------------------------------|-----------|--------------|-------------|----------|----------------------------|
| <u>Source</u>                         | <u>DF</u> | <u>S.S.</u>  | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                               | 1         | 14.88043478  | 14.88043478 | 4.67     | 0.0336                     |
| Attribute                             | 1         | 1.83695652   | 1.83695652  | 0.58     | 0.4497                     |
| Time                                  | 2         | 3.10773948   | 1.55386974  | 0.49     | 0.6156                     |
| Defense x Attribute                   | 1         | 0.10618316   | 0.10618316  | 0.03     | 0.8555                     |
| Defense x Time                        | 2         | 7.47769419   | 3.73884710  | 1.17     | 0.3142                     |
| Attribute x Time                      | 2         | 0.00468859   | 0.00234430  | 0.00     | 0.9993                     |
| Defense x Attribute x Time            | 2         | 3.56344424   | 1.78172212  | 0.56     | 0.5736                     |
| Error                                 | 80        | 254.64242424 | 3.18303030  |          |                            |

| <u>Dependent Variable: Adhesive</u> |    |              |             |      |        |
|-------------------------------------|----|--------------|-------------|------|--------|
| Defense                             | 1  | 12.19836957  | 12.19836957 | 4.03 | 0.0481 |
| Attribute                           | 1  | 0.61141304   | 0.61141304  | 0.20 | 0.6544 |
| Time                                | 2  | 3.99130164   | 1.99565082  | 0.66 | 0.5200 |
| Defense x Attribute                 | 1  | 4.69449474   | 4.69449474  | 1.55 | 0.2167 |
| Defense x Time                      | 2  | 15.86025998  | 7.93012999  | 2.62 | 0.0791 |
| Attribute x Time                    | 2  | 17.93278560  | 8.96639280  | 2.96 | 0.0574 |
| Defense x Attribute x Time          | 1  | 19.56210007  | 9.78105004  | 3.23 | 0.0447 |
| Error                               | 80 | 242.17916667 | 3.02723958  |      |        |

Table 4-9 (continued)

D. RCA Videodisc Player

| <u>Dependent Variable: Stylus</u> |           |              |             |          |                            |
|-----------------------------------|-----------|--------------|-------------|----------|----------------------------|
| <u>Source</u>                     | <u>DF</u> | <u>S.S.</u>  | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                           | 1         | 1.28225023   | 1.28225023  | 0.52     | 0.4732                     |
| Attribute                         | 1         | 26.90061709  | 26.90061709 | 10.90    | 0.0014                     |
| Time                              | 2         | 1.47090730   | 0.73545365  | 0.30     | 0.7432                     |
| Defense x Attribute               | 1         | 3.84049860   | 3.84049860  | 1.56     | 0.2159                     |
| Defense x Time                    | 2         | 2.06820661   | 1.03410331  | 0.42     | 0.6592                     |
| Attribute x Time                  | 2         | 1.39457444   | 0.69728722  | 0.28     | 0.7547                     |
| Defense x Attribute x Time        | 2         | 4.84696418   | 2.42348209  | 0.98     | 0.3791                     |
| Error                             | 80        | 197.48674242 | 2.46858428  |          |                            |

| <u>Dependent Variable: Advantage</u> |    |              |             |      |        |
|--------------------------------------|----|--------------|-------------|------|--------|
| Defense                              | 1  | 0.72078451   | 0.72078451  | 0.25 | 0.6177 |
| Attribute                            | 1  | 11.36158818  | 11.36158818 | 3.96 | 0.0501 |
| Time                                 | 2  | 10.83302564  | 5.41651282  | 1.89 | 0.1583 |
| Defense x Attribute                  | 1  | 1.83866262   | 1.83866262  | 0.64 | 0.4259 |
| Defense x Time                       | 2  | 17.55544455  | 8.77772228  | 3.06 | 0.0526 |
| Attribute x Time                     | 2  | 4.87854816   | 2.43927408  | 0.85 | 0.4314 |
| Defense x Attribute x Time           | 2  | 2.90460114   | 1.45230057  | 0.51 | 0.6049 |
| Error                                | 80 | 229.69810606 | 2.87122633  |      |        |

Table 4-10

ANALYSIS OF VARIANCE OF BELIEF LEVELS IN PRODUCT'S  
ATTRIBUTES BY TYPE OF DEFENSE (REFUTATIONAL-SAME VS.  
REFUTATIONAL-DIFFERENT), AND INTERVAL BETWEEN DEFENSE  
AND ATTACK (IMMEDIATE, TWO DAYS AND SEVEN DAYS)

A. Scotties Tissues

| <u>Dependent Variable: Absorbent</u> |           |             |             |          |                            |
|--------------------------------------|-----------|-------------|-------------|----------|----------------------------|
| <u>Source</u>                        | <u>DF</u> | <u>S.S.</u> | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                              | 1         | 0.00543478  | 0.00543478  | 0.00     | 0.9561                     |
| Time                                 | 2         | 16.67155797 | 8.33577899  | 4.71     | 0.0145                     |
| Defense<br>x Time                    | 2         | 8.65706522  | 4.32853261  | 2.45     | 0.0994                     |
| Error                                | 40        | 70.75833333 | 1.76895833  |          |                            |

| <u>Dependent Variable: Lint</u> |    |             |             |       |        |
|---------------------------------|----|-------------|-------------|-------|--------|
| Defense                         | 1  | 12.00543478 | 12.00543478 | 10.27 | 0.0027 |
| Time                            | 2  | 2.46429267  | 1.23214634  | 1.05  | 0.3582 |
| Defense<br>x Time               | 2  | 3.06088849  | 1.53044425  | 1.31  | 0.2815 |
| Error                           | 40 | 46.77916667 | 1.16947917  |       |        |

B. Minute Maid Orange Juice

| <u>Dependent Variable: Taste</u> |    |              |            |      |        |
|----------------------------------|----|--------------|------------|------|--------|
| Defense                          | 1  | 8.26630435   | 8.26630435 | 1.75 | 0.1932 |
| Time                             | 2  | 1.57262846   | 0.78631423 | 0.17 | 0.8471 |
| Defense<br>x Time                | 2  | 1.89278656   | 0.94639328 | 0.20 | 0.8191 |
| Error                            | 40 | 188.79545455 | 4.71988636 |      |        |

| <u>Dependent Variable: Convenience</u> |    |              |            |      |        |
|----------------------------------------|----|--------------|------------|------|--------|
| Defense                                | 1  | 0.26350461   | 0.26350461 | 0.05 | 0.8317 |
| Time                                   | 2  | 5.09826157   | 2.54913079 | 0.44 | 0.6454 |
| Defense<br>x Time                      | 2  | 16.08431419  | 8.04215705 | 1.40 | 0.2592 |
| Error                                  | 40 | 230.29848485 | 5.75746212 |      |        |

Table 4-10 (continued)

C. Band Aid BandagesDependent Variable: Skin-tight

| <u>Source</u>     | <u>DF</u> | <u>S.S.</u>  | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
|-------------------|-----------|--------------|-------------|----------|----------------------------|
| Defense           | 1         | 8.69565217   | 8.69565217  | 2.36     | 0.1327                     |
| Time              | 2         | 1.58206522   | 0.79103261  | 0.21     | 0.8080                     |
| Defense<br>x Time | 2         | 4.45018116   | 2.22509058  | 0.60     | 0.5522                     |
| Error             | 40        | 147.64166667 | 3.69104167  |          |                            |

Dependent Variable: Adhesive

|                   |    |              |             |      |        |
|-------------------|----|--------------|-------------|------|--------|
| Defense           | 1  | 0.91847826   | 0.91847826  | 0.29 | 0.5959 |
| Time              | 2  | 2.81190894   | 1.40595447  | 0.44 | 0.6488 |
| Defense<br>x Time | 2  | 35.89986643  | 17.94993322 | 5.58 | 0.0073 |
| Error             | 40 | 128.57083333 | 3.21427083  |      |        |

D. RCA Videodisc PlayerDependent Variable: Stylus

|                   |    |              |            |      |        |
|-------------------|----|--------------|------------|------|--------|
| Defense           | 1  | 0.26630435   | 0.26630435 | 0.08 | 0.7774 |
| Time              | 2  | 0.01144598   | 0.00572299 | 0.00 | 0.9983 |
| Defense<br>x Time | 2  | 0.56513505   | 0.28256753 | 0.09 | 0.9178 |
| Error             | 40 | 131.48863636 | 3.28721591 |      |        |

Dependent Variable: Advantage

|                   |    |              |            |      |        |
|-------------------|----|--------------|------------|------|--------|
| Defense           | 1  | 0.14332181   | 0.14332181 | 0.04 | 0.8437 |
| Time              | 2  | 13.21719294  | 6.60859647 | 1.82 | 0.1758 |
| Defense<br>x Time | 2  | 4.29398131   | 2.14699066 | 0.59 | 0.5591 |
| Error             | 40 | 145.54659091 | 3.63866477 |      |        |

Table 4-11

ANALYSIS OF VARIANCE OF BELIEF LEVELS IN PRODUCT'S  
ATTRIBUTES BY TYPE OF DEFENSE (SUPPORTIVE-SAME VS. NO  
DEFENSE) AND INTERVAL BETWEEN DEFENSE AND ATTACK  
(TWO DAYS AND SEVEN DAYS)

**A. Scotties Tissues**

| <u>Dependent Variable: Absorbent</u> |           |             |             |          |                            |
|--------------------------------------|-----------|-------------|-------------|----------|----------------------------|
| <u>Source</u>                        | <u>DF</u> | <u>S.S.</u> | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                              | 1         | 0.75889328  | 0.75889328  | 0.25     | 0.6238                     |
| Time                                 | 1         | 0.00577201  | 0.00577201  | 0.00     | 0.9658                     |
| Defense<br>x Time                    | 1         | 2.53968254  | 2.53968254  | 0.83     | 0.3731                     |
| Error                                | 19        | 58.00000000 | 3.05263158  |          |                            |
| <u>Dependent Variable: Lint</u>      |           |             |             |          |                            |
| Defense                              | 1         | 0.74556277  | 0.74556277  | 0.52     | 0.4794                     |
| Time                                 | 1         | 5.00247036  | 5.00247036  | 3.51     | 0.0783                     |
| Defense<br>x Time                    | 1         | 10.47101449 | 10.47101449 | 7.35     | 0.0149                     |
| Error                                | 17        | 24.23333333 | 1.42549020  |          |                            |

**B. Minute Maid Orange Juice**

| <u>Dependent Variable: Taste</u>       |    |             |             |      |        |
|----------------------------------------|----|-------------|-------------|------|--------|
| Defense                                | 1  | 0.27700922  | 0.27700922  | 0.13 | 0.7190 |
| Time                                   | 1  | 4.93831169  | 4.93831169  | 2.38 | 0.1396 |
| Defense<br>x Time                      | 1  | 7.55714286  | 7.55714286  | 3.64 | 0.0717 |
| Error                                  | 19 | 39.46666667 | 2.07719298  |      |        |
| <u>Dependent Variable: Convenience</u> |    |             |             |      |        |
| Defense                                | 1  | 10.13376623 | 10.13376623 | 2.89 | 0.1071 |
| Time                                   | 1  | 0.03952569  | 0.03952569  | 0.01 | 0.9166 |
| Defense<br>x Time                      | 1  | 2.43623188  | 2.43623188  | 0.70 | 0.4158 |
| Error                                  | 17 | 59.53333333 | 3.50196078  |      |        |

Table 4-11 (continued)

C. Band Aid Bandages

| <u>Dependent Variable: Skin-tight</u> |           |             |             |          |                            |
|---------------------------------------|-----------|-------------|-------------|----------|----------------------------|
| <u>Source</u>                         | <u>DF</u> | <u>S.F.</u> | <u>M.S.</u> | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                               | 1         | 0.55681818  | 0.55681818  | 0.23     | 0.6343                     |
| Time                                  | 1         | 3.00037879  | 3.00037879  | 1.26     | 0.2761                     |
| Defense<br>x Time                     | 1         | 12.96401515 | 12.96401515 | 5.45     | 0.0313                     |
| Error                                 | 18        | 42.80833333 | 2.37824074  |          |                            |

| <u>Dependent Variable: Adhesive</u> |    |              |            |      |        |
|-------------------------------------|----|--------------|------------|------|--------|
| Defense                             | 1  | 1.50074111   | 1.50074111 | 0.25 | 0.6241 |
| Time                                | 1  | 1.03255772   | 1.03255772 | 0.17 | 0.6841 |
| Defense<br>x Time                   | 1  | 0.66706349   | 0.66706349 | 0.11 | 0.7434 |
| Error                               | 19 | 114.90833333 | 6.04780702 |      |        |

D. RCA Videodisc Player

| <u>Dependent Variable: Stylus</u> |    |             |             |      |        |
|-----------------------------------|----|-------------|-------------|------|--------|
| Defense                           | 1  | 1.92045455  | 1.92045455  | 0.51 | 0.4834 |
| Time                              | 1  | 1.70037879  | 1.70037879  | 0.45 | 0.5093 |
| Defense<br>x Time                 | 1  | 11.33674242 | 11.33674242 | 3.02 | 0.0992 |
| Error                             | 18 | 67.50833333 | 3.75046296  |      |        |

| <u>Dependent Variable: Advantage</u> |    |             |             |      |        |
|--------------------------------------|----|-------------|-------------|------|--------|
| Defense                              | 1  | 16.37977602 | 16.37977602 | 6.40 | 0.0204 |
| Time                                 | 1  | 0.00324675  | 0.00324675  | 0.00 | 0.9719 |
| Defense<br>x Time                    | 1  | 3.00357143  | 3.00357143  | 1.17 | 0.2921 |
| Error                                | 19 | 48.59166667 | 2.55745614  |      |        |

place. Thus, if individuals can be inoculated against persuasion in a marketing context, their belief levels in a product's attributes following an attack on those attributes should be closer to the "neither defense nor attack" belief level than to the "no defense" belief level.

The foregoing assumes, of course, that the "no defense" treatment, i.e., the attacking message, is effective and will significantly lower belief levels from their initial positions. As Table 4-12 indicates, this was not generally the case in the present study. The differences in belief levels between the "neither defense nor attack" and "no defense" treatments were not statistically significant for all but the convenience attribute of Minute Maid orange juice and the advantage attribute of the RCA video-disc player.

The reason why the attacking message was ineffective with respect to the six attributes might be that the respondents did not make a connection between the contents of these attacks and the attributes being measured. For example, the message attacking the absorbent attribute of Scotties tissues stated that Scotties could not wipe up a water spill. But the absorbency of a facial tissue may be perceived as unrelated to the tissue's ability to absorb a water spill (as the defensive message points out).

Possibly, the attacking messages just were not persuasive enough. For example, the message attacking the

Table 4-12

TEST OF SIGNIFICANT DIFFERENCE BETWEEN RATINGS OF  
"NEITHER DEFENSE NOR ATTACK" (NDNA) AND "NO DEFENSE" (ND)  
TREATMENTS BY PRODUCT ATTRIBUTE

| Product                     | Attribute   | Treatment | n  | Mean   | Standard<br>Deviation | t       | $\alpha$ |
|-----------------------------|-------------|-----------|----|--------|-----------------------|---------|----------|
| Scotties<br>Tissues         | Absorbent   | ND        | 11 | 5.8636 | 1.38005270            | -1.5579 | 0.1291   |
|                             |             | NDNA      | 23 | 6.7609 | 1.65054788            |         |          |
|                             | Lint        | ND        | 11 | 4.7727 | 1.70826866            | -1.1056 | 0.2771   |
|                             |             | NDNA      | 23 | 5.3043 | 1.08438431            |         |          |
| Minute Maid<br>Orange Juice | Taste       | ND        | 12 | 4.9167 | 1.56427929            | -0.9373 | 0.3556   |
|                             |             | NDNA      | 22 | 5.3636 | 1.18705135            |         |          |
|                             | Convenience | ND        | 10 | 5.7000 | 1.96072549            | -2.8623 | 0.0076   |
|                             |             | NDNA      | 22 | 7.7273 | 1.81086189            |         |          |
| Band Aid<br>Bandages        | Skin-tight  | ND        | 11 | 5.9545 | 1.90334634            | 1.3501  | 0.1868   |
|                             |             | NDNA      | 22 | 5.1591 | 1.42583613            |         |          |
|                             | Adhesive    | ND        | 11 | 5.1364 | 2.20330331            | -2.2185 | 0.0340   |
|                             |             | NDNA      | 22 | 6.5682 | 1.48240036            |         |          |
| RCA Videodisc<br>Player     | Stylus      | ND        | 11 | 4.0909 | 1.88173034            | -2.2801 | 0.0296   |
|                             |             | NDNA      | 22 | 5.0909 | 0.62936785            |         |          |
|                             | Advantage   | ND        | 12 | 2.5833 | 1.20290053            | -5.1486 | 0.0001   |
|                             |             | NDNA      | 22 | 4.6364 | 1.05989463            |         |          |

stylus attribute of the RCA videodisc player stated that a worn stylus could ruin videodiscs and that the RCA machine had no indication when the stylus should be replaced. However, the videodisc stylus is comparable to that of a record turntable. Stereo systems have no indication when the stylus should be replaced. Nonetheless, people replace a stylus when necessary, before their records are ruined. Could the videodisc system be much different?

Regardless of the reasons why the attacking messages were ineffective for six attributes in the current study, inoculation theory can only work, if at all, with respect to the convenience attribute of Minute Maid orange juice and the advantage attribute of the RCA videodisc player. The message attacking these two attributes were "on target." The message attacking the convenience attribute suggested how Minute Maid orange juice might not be as convenient as frozen orange juice. The former weighs more and takes up more refrigerator space than the latter. Similarly, the message attacking the advantage attribute of the RCA videodisc player explicitly stated that the play only ability of the videodisc system was a disadvantage compared to the play and record capability of video cassette recorders.

If respondents can be inoculated against the messages attacking the above two attributes, the experimental data should support the first four hypotheses enumerated in Chapter I. Specifically:

H<sub>1</sub> - Both supportive and refutational defenses are superior to a no-defense treatment.

As can be seen from Table 4-11, the defense treatment (supportive-same vs. no defense) was not significant for either the convenience or advantage attributes. Therefore, the supportive-same defense is not superior to a no-defense treatment.

Considering the finding that the attacking messages were not generally effective requires a reinterpretation of the data of Table 4-5, discussed above (p.87). It was claimed, there, that the supportive-different defense provided inoculation that was generalized for both of a product's attributes since there was no significant difference between the belief levels in the attributes for the "neither defense nor attack" treatment and those for the supportive-different treatment, where the attribute attacked was the attribute rated. For six of the product attributes, the finding that the attacking message, when preceded by a supportive-different defense, was unable to significantly lower respondents' initial belief levels was not due to the defense's inoculating ability. Rather, it was due to the ineffectiveness of the six attacking messages.

To see if the supportive-different defense was superior to no defense for the convenience attribute of Minute Maid orange juice and the advantage attribute of the RCA videodisc player, since there was no significant difference

between the ratings of the pooled supportive-different condition pairs for these two attributes, the relevant condition pair ratings and standard deviations were, themselves, pooled and tested for significance against the corresponding no-defense treatment. The results are in Table 4-13.

It would appear that the supportive-different defense was not superior to the no-defense treatment for the convenience attribute,<sup>3</sup> but it was superior for the advantage attribute.

However, the superiority of the supportive-different defense for the advantage attribute may be spurious for at least two reasons. First, the sample sizes involved are small and their standard deviations are relatively large. Hence the difference between the two treatments may be overstated. Second, this analysis, based on the data of Table 4-5, assumed that both of a product's attributes could be considered simultaneously in analyzing the rating for one of the attributes. That is, it was assumed that if inoculation theory applied to the conditions of the current experiment, it could be generalized to both attributes of a product. As has been seen, this assumption was probably not warranted. If the two attributes of the RCA videodisc player are treated separately, then the supportive-different rating of the advantage attribute, 4.45, does not differ significantly from the no-defense rating of 2.5833

Table 4-13

TEST OF SIGNIFICANT DIFFERENCE BETWEEN RATINGS OF  
THE SUPPORTIVE-DIFFERENT AND NO-DEFENSE TREATMENTS  
BY PRODUCT ATTRIBUTE

| <u>Product</u>              | <u>Attribute</u> | <u>Treatment</u>        | <u>n</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> | <u>t</u> | <u><math>\alpha</math></u> |
|-----------------------------|------------------|-------------------------|----------|-------------|-------------------------------|----------|----------------------------|
| Minute Maid<br>Orange Juice | Convenience      | Supportive<br>Different | 23       | 7.6522      | 1.850496                      |          |                            |
|                             |                  | No Defense              | 10       | 5.7000      | 1.96072549                    | 2.5571   | > .001                     |
| RCA Videodisc<br>Player     | Advantage        | Supportive<br>Different | 22       | 4.6818      | 1.9401997                     |          |                            |
|                             |                  | No Defense              | 12       | 2.5833      | 1.20290053                    | 3.1553   | < .001                     |

( $t=2.3438$ ,  $\alpha>0.01$ ). Consequently, the writer's conclusion is that neither the supportive-same nor the supportive-different defenses are superior to a no-defense treatment.

As can be seen from Table 4-10, the defense treatment (refutational-same vs. refutational-different) was not significant for either the convenience or advantage attributes. To see if refutational defenses are superior to no-defense, the mean belief levels for each pair of refutational defense were pooled and tested against the appropriate no-defense treatment. The results are in Table 14.

It appears from Table 4-14 that refutational defenses are not superior to no-defense.<sup>4</sup> Hence, Hypothesis 1 must be rejected.

$H_2$  - Supportive defenses are less effective in conferring immunity to an attack than are refutational defenses.

As was just discussed, both supportive and refutational defenses were ineffective in conferring immunization against attack. Even though they are not significantly different from each other, in absolute terms, supportive defenses resulted in higher belief levels than did refutational defenses. For the convenience attribute, the supportive and refutational belief levels were 7.3261 and 7.0109, respectively, while the corresponding levels for the advantage attribute were 4.3571 and 3.4674. Hypothesis 2 is, also, rejected.

Table 4-14

TEST OF SIGNIFICANT DIFFERENCE BETWEEN RATINGS OF  
THE REFUTATIONAL AND NO-DEFENSE TREATMENTS  
BY PRODUCT ATTRIBUTE

| <u>Product</u>              | <u>Attribute</u> | <u>Treatment</u>        | <u>n</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> | <u>t</u> | <u><math>\alpha</math></u> |
|-----------------------------|------------------|-------------------------|----------|-------------|-------------------------------|----------|----------------------------|
| Minute Maid<br>Orange Juice | Convenience      | Refutational<br>Defense | 46       | 7.0109      | 2.36523227                    | 1.6315   | 0.1086                     |
|                             |                  | No Defense              | 10       | 5.700       | 1.96072549                    |          |                            |
| RCA Videodisc<br>Player     | Advantage        | Refutational<br>Defense | 46       | 3.4674      | 1.90438726                    | 1.5250   | 0.1329                     |
|                             |                  | No Defense              | 12       | 2.5833      | 1.20290053                    |          |                            |

- H<sub>3</sub> - Refutational-same and refutational-different defenses are equally effective in conferring immunization to an attack.

As was discussed above, the belief levels resulting from the two types of refutational defense were not significantly different from each other. However, these belief levels were not inoculated levels, i.e., they were not significantly different from the no-defense (uninoculated) levels. Hypothesis 3 must be rejected, as well.

- H<sub>4</sub> - a. Immunity conferred by refutational defenses will not decay as rapidly as that conferred by supportive defenses.  
 b. Immunity conferred by refutational-different defenses will decay less rapidly than that conferred by refutational-same defenses.

Since neither supportive nor refutational defenses conferred immunity against attacks, both parts of Hypothesis 4 must be rejected, Part 'b' of Hypothesis 4 also does not gain support from the analysis of variance of Table 4-10. Support could have come for this part of the hypothesis if the defense x time interaction had been significant for the convenience or advantage attributes. Such, though, was not the case.

#### Perceived Self-Consistency and Induced Resistance to Persuasion

As discussed in Chapter I, it seems logical to expect that the predictive value of inoculation theory might vary for different personalities. The following hypothesis was tested:

- H<sub>5</sub> - a. Refutational defenses are superior to supportive defenses in inducing resistance to persuasion among those with high perceived self-consistency.
- b. Supportive and refutational defenses are equally effective in inducing resistance to persuasion among those with low perceived self-consistency.

Persons with high perceived self-consistency were those who scored below the median value of 223 on Gergen and Morse's "Measure of Self-Consistency" personality test. Those with low perceived self-consistency scored above this median value. To test Hypothesis 5, respondents' data were analyzed separately by high and low perceived self-consistency. The same analyses that have been heretofore described were performed for each of the two groups.

Eighty-nine respondents were in the group of low perceived self-consistency; 87 were classified as high perceived self-consistency. Five respondents, based on their incomplete test results, could not be classified and were omitted from the subsequent analyses.

As was expected, the responses to the opinion questionnaire were "more reliable," or consistent, for those with high perceived self-consistency than for those with low perceived self-consistency. The reliability check (Items 6 and 16 on the opinion questionnaire) yielded a Pearson correlation coefficient of 0.69 for the low perceived self-consistency group and a correlation coefficient of 0.73 for the high perceived self-consistency group.

Respondents' mean belief levels by level of perceived self-consistency are presented in Table 4-15. Those with a low level are identified as "Consist = 0," those with a high level are identified as "Consist = 1," and those whose level of perceived self-consistency was indeterminate were identified as "Consist = 2."

As can be seen from Table 4-16, if inoculation theory can be applied within a marketing context and within the framework of the perceived self-consistency variable, it can only apply to the advantage attribute of the RCA videodisc player and to the group with high perceived self-consistency. This was the only instance where the attacking message was effective in producing a mean belief level that was significantly different from the initial belief level.

As can be seen from Table 4-17, the analysis of variance of the data pertaining to the advantage attribute of the RCA videodisc player and respondents with high perceived self-consistency indicated that the supportive-same defense was not significantly different from the no-defense treatment. Also, the refutational-same and refutational-different defenses were not significantly different from each other.

The supportive-different defense yielded a mean belief level of 3.1667 and a standard deviation of 1.2562344. This mean was not significantly different from the no-defense level ( $t=1.2299$ ,  $\alpha>0.01$ ). Since the two refutational

Table 4-15

RESPONDENTS' MEAN LEVEL OF BELIEF IN EIGHT PRODUCT  
ATTRIBUTES BY LEVEL OF PERCEIVED SELF-CONSISTENCY  
AND BY CONDITION CODE NUMBER

| <u>Variable</u>                | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|--------------------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDPCODE=1 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 5        | 0                    | 5.60000000  | 1.43178211                    |
| Scotlty                        | 5        | 0                    | 5.40000000  | 0.22360680                    |
| OJtaste                        | 5        | 0                    | 6.30000000  | 2.16794834                    |
| OJconvt                        | 5        | 0                    | 7.60000000  | 1.94935887                    |
| Banadhs                        | 5        | 0                    | 6.60000000  | 2.07364414                    |
| Banskttt                       | 5        | 0                    | 6.30000000  | 1.44048603                    |
| RCastyl                        | 5        | 0                    | 4.90000000  | 1.19373364                    |
| RCaadya                        | 5        | 0                    | 3.90000000  | 2.16217483                    |
| <u>CONDPCODE=1 - CONSIST=2</u> |          |                      |             |                               |
| Scotabs                        | 1        | 0                    | 5.00000000  | -                             |
| Scotlty                        | 1        | 0                    | 6.50000000  | -                             |
| OJtaste                        | 1        | 0                    | 3.00000000  | -                             |
| OJconvt                        | 1        | 0                    | 4.50000000  | -                             |
| Banadhs                        | 1        | 0                    | 8.50000000  | -                             |
| Banskttt                       | 1        | 0                    | 3.00000000  | -                             |
| RCastyl                        | 1        | 0                    | 1.00000000  | -                             |
| RCaadva                        | 1        | 0                    | 3.50000000  | -                             |
| <u>CONDPCODE=2 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 3        | 0                    | 6.33333333  | 2.02072594                    |
| Scotlty                        | 3        | 0                    | 4.66666667  | 0.76376262                    |
| OJtaste                        | 3        | 0                    | 7.33333333  | 1.60727513                    |
| OJconvt                        | 3        | 0                    | 7.66666667  | 3.21455025                    |
| BAnadhs                        | 3        | 0                    | 6.50000000  | 2.29128785                    |
| BAnskttt                       | 3        | 0                    | 7.50000000  | 1.80277564                    |
| RCastyl                        | 3        | 0                    | 6.33333333  | 2.51661148                    |
| RCaadva                        | 3        | 0                    | 2.66666667  | 1.25830574                    |
| <u>CONDPCODE=2 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 2        | 0                    | 4.50000000  | 3.53553391                    |
| Scotlty                        | 2        | 0                    | 6.00000000  | 0.70710678                    |
| OJtaste                        | 2        | 0                    | 2.50000000  | 2.12132034                    |
| OJconvt                        | 2        | 0                    | 4.00000000  | 4.24264069                    |
| BAnadhs                        | 2        | 0                    | 7.50000000  | 1.41421356                    |
| BAnskttt                       | 2        | 0                    | 3.00000000  | 0.00000000                    |
| RCastyl                        | 2        | 0                    | 5.00000000  | 0.70710678                    |
| RCaadva                        | 2        | 0                    | 6.75000000  | 4.59619408                    |

Table 4-15 (continued)

| <u>Variable</u>               | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|-------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=2 - CONSIST=2</u> |          |                            |             |                                     |
| Scotabs                       | 1        | 0                          | 8.00000000  | -                                   |
| Scotlty                       | 1        | 0                          | 6.00000000  | -                                   |
| OJtaste                       | 1        | 0                          | 4.00000000  | -                                   |
| OJconvt                       | 1        | 0                          | 5.00000000  | -                                   |
| Banadhs                       | 1        | 0                          | 6.00000000  | -                                   |
| Banskttt                      | 1        | 0                          | 6.50000000  | -                                   |
| RCastyl                       | 1        | 0                          | 4.50000000  | -                                   |
| RCaadva                       | 1        | 0                          | 2.00000000  | -                                   |
| <u>CONDCODE=3 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                       | 2        | 0                          | 5.00000000  | 0.70710678                          |
| Scotlty                       | 2        | 0                          | 5.50000000  | 0.00000000                          |
| OJtaste                       | 2        | 0                          | 6.75000000  | 2.47487373                          |
| OJconvt                       | 2        | 0                          | 7.00000000  | 2.82842712                          |
| Banadhs                       | 2        | 0                          | 5.75000000  | 0.35355339                          |
| Banskttt                      | 2        | 0                          | 6.00000000  | 1.41421356                          |
| RCastyl                       | 2        | 0                          | 6.00000000  | 0.70710678                          |
| RCaadva                       | 2        | 0                          | 4.00000000  | 2.12132034                          |
| <u>CONDCODE=3 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                       | 3        | 0                          | 4.50000000  | 1.00000000                          |
| Scotlty                       | 3        | 0                          | 5.83333333  | 1.04083300                          |
| OJtaste                       | 3        | 0                          | 6.83333333  | 2.46644143                          |
| OJconvt                       | 3        | 0                          | 8.16666667  | 1.25830574                          |
| Banadhs                       | 3        | 0                          | 7.16666667  | 0.76376262                          |
| Banskttt                      | 3        | 0                          | 5.50000000  | 1.32287566                          |
| RCastyl                       | 3        | 0                          | 3.66666667  | 1.44337567                          |
| RCaadva                       | 3        | 0                          | 5.50000000  | 2.17944947                          |
| <u>CONDCODE=4 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                       | 1        | 0                          | 3.50000000  | -                                   |
| Scotlty                       | 1        | 0                          | 2.50000000  | -                                   |
| OJtaste                       | 1        | 0                          | 6.50000000  | -                                   |
| OJconvt                       | 1        | 0                          | 2.50000000  | -                                   |
| Banadhs                       | 1        | 0                          | 1.50000000  | -                                   |
| Banskttt                      | 1        | 0                          | 8.00000000  | -                                   |
| RCastyl                       | 1        | 0                          | 7.50000000  | -                                   |
| RCaadva                       | 1        | 0                          | 5.50000000  | -                                   |

Table 4-15 (continued)

| <u>Variable</u>               | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|-------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=4 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                       | 3        | 0                          | 5.16666667  | 1.00083300                          |
| Scotlty                       | 3        | 0                          | 5.00000000  | 1.80277564                          |
| OJtaste                       | 3        | 0                          | 7.33333333  | 0.57735027                          |
| OJconvt                       | 3        | 0                          | 8.16666667  | 2.36290781                          |
| Banadhs                       | 3        | 0                          | 4.66666667  | 1.75594229                          |
| Banskt                        | 3        | 0                          | 4.16666667  | 0.28867513                          |
| RCastyl                       | 3        | 0                          | 5.16666667  | 1.15470054                          |
| RCaadva                       | 3        | 0                          | 1.83333333  | 0.76376262                          |
| <u>CONDCODE=4 - CONSIST=2</u> |          |                            |             |                                     |
| Scotabs                       | 1        | 0                          | 1.50000000  | -                                   |
| Scotlty                       | 1        | 0                          | 4.00000000  | -                                   |
| OJtaste                       | 1        | 0                          | 2.00000000  | -                                   |
| OJconvt                       | 1        | 0                          | 6.00000000  | -                                   |
| Banadhs                       | 1        | 0                          | 5.50000000  | -                                   |
| Banskt                        | 1        | 0                          | 6.00000000  | -                                   |
| RCastyl                       | 1        | 0                          | 4.50000000  | -                                   |
| RCaadva                       | 1        | 0                          | 2.50000000  | -                                   |
| <u>CONDCODE=5 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                       | 1        | 0                          | 5.50000000  | -                                   |
| Scotlty                       | 1        | 0                          | 6.50000000  | -                                   |
| OJtaste                       | 1        | 0                          | 6.50000000  | -                                   |
| OJconvt                       | 1        | 0                          | 9.00000000  | -                                   |
| Banadhs                       | 1        | 0                          | 5.50000000  | -                                   |
| Banskt                        | 1        | 0                          | 7.00000000  | -                                   |
| RCastyl                       | 1        | 0                          | 5.00000000  | -                                   |
| RCaadva                       | 1        | 0                          | 4.50000000  | -                                   |
| <u>CONDCODE=5 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                       | 4        | 0                          | 5.50000000  | 1.58113883                          |
| Scotlty                       | 4        | 0                          | 7.62500000  | 1.84277870                          |
| OJtaste                       | 4        | 0                          | 5.12500000  | 1.84277870                          |
| OJconvt                       | 4        | 0                          | 8.12500000  | 1.10867789                          |
| Banadhs                       | 4        | 0                          | 6.12500000  | 1.10867789                          |
| Banskt                        | 4        | 0                          | 4.50000000  | 1.08012345                          |
| RCastyl                       | 4        | 0                          | 3.00000000  | 1.87082869                          |
| RCaadva                       | 4        | 0                          | 5.37500000  | 0.25000000                          |

Table 4-15 (continued)

| <u>Variable</u>               | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|-------------------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDCODE=5 - CONSIST=2</u> |          |                      |             |                               |
| Scotabs                       | 1        | 0                    | 3.50000000  | -                             |
| Scotlty                       | 1        | 0                    | 5.00000000  | -                             |
| OJtaste                       | 1        | 0                    | 6.00000000  | -                             |
| OJconvt                       | 1        | 0                    | 8.50000000  | -                             |
| Banadhs                       | 1        | 0                    | 4.00000000  | -                             |
| Bansktt                       | 1        | 0                    | 7.50000000  | -                             |
| RCastyl                       | 1        | 0                    | 7.50000000  | -                             |
| RCaadva                       | 1        | 0                    | 5.00000000  | -                             |
| <u>CONDCODE=6 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                       | 4        | 0                    | 7.50000000  | 0.91287093                    |
| Scotlty                       | 4        | 0                    | 5.12500000  | 0.47871355                    |
| OJtaste                       | 4        | 0                    | 7.00000000  | 1.08012345                    |
| OJconvt                       | 4        | 0                    | 6.62500000  | 3.03795436                    |
| Banadhs                       | 4        | 0                    | 6.37500000  | 2.49582986                    |
| Bansktt                       | 4        | 0                    | 4.75000000  | 0.28867513                    |
| RCastyl                       | 4        | 0                    | 5.12500000  | 0.25000000                    |
| RCaadva                       | 4        | 0                    | 4.12500000  | 1.75000000                    |
| <u>CONDCODE=6 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                       | 2        | 0                    | 5.25000000  | 2.47487373                    |
| Scotlty                       | 2        | 0                    | 4.25000000  | 1.76776695                    |
| OJtaste                       | 2        | 0                    | 7.25000000  | 1.06066017                    |
| OJconvt                       | 2        | 0                    | 7.50000000  | 2.12132034                    |
| Banadhs                       | 2        | 0                    | 5.50000000  | 0.70710678                    |
| Bansktt                       | 2        | 0                    | 6.25000000  | 1.76776695                    |
| RCastyl                       | 2        | 0                    | 5.25000000  | 0.35355339                    |
| RCaadva                       | 2        | 0                    | 5.75000000  | 0.35355339                    |
| <u>CONDCODE=7 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                       | 1        | 0                    | 5.50000000  | -                             |
| Scotlty                       | 1        | 0                    | 7.00000000  | -                             |
| OJtaste                       | 1        | 0                    | 5.00000000  | -                             |
| OJconvt                       | 1        | 0                    | 7.50000000  | -                             |
| Banadhs                       | 1        | 0                    | 7.00000000  | -                             |
| Bansktt                       | 1        | 0                    | 7.00000000  | -                             |
| RCastyl                       | 1        | 0                    | 4.00000000  | -                             |
| RCaadva                       | 1        | 0                    | 2.50000000  | -                             |

Table 4-15 (continued)

| <u>Variable</u>               | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|-------------------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDCODE=7 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                       | 4        | 0                    | 5.50000000  | 0.40824829                    |
| Scotlty                       | 4        | 0                    | 4.00000000  | 1.08012345                    |
| OJtaste                       | 4        | 0                    | 5.12500000  | 2.92617498                    |
| OJconvt                       | 4        | 0                    | 9.00000000  | 0.81649558                    |
| Banadhs                       | 4        | 0                    | 8.12500000  | 0.75000000                    |
| Bansktt                       | 4        | 0                    | 6.00000000  | 1.77951304                    |
| RCastyl                       | 4        | 0                    | 4.87500000  | 1.03077641                    |
| RCaadva                       | 4        | 0                    | 3.00000000  | 0.70710678                    |
| <u>CONDCODE=8 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                       | 2        | 0                    | 7.50000000  | 0.00000000                    |
| Scotlty                       | 2        | 0                    | 6.50000000  | 0.00000000                    |
| OJtaste                       | 2        | 0                    | 4.50000000  | 0.70710678                    |
| OJconvt                       | 2        | 0                    | 5.50000000  | 1.41421356                    |
| Banadhs                       | 2        | 0                    | 7.25000000  | 0.35355339                    |
| Bansktt                       | 2        | 0                    | 7.00000000  | 1.41421356                    |
| RCastyl                       | 2        | 0                    | 5.00000000  | 0.70710678                    |
| RCaadva                       | 2        | 0                    | 3.25000000  | 3.18198052                    |
| <u>CONCODE=8 - CONSIST=1</u>  |          |                      |             |                               |
| Scotabs                       | 4        | 0                    | 6.12500000  | 1.93110504                    |
| Scotlty                       | 4        | 0                    | 5.87500000  | 0.25000000                    |
| OJtaste                       | 4        | 0                    | 5.62500000  | 0.62915287                    |
| OJconvt                       | 4        | 0                    | 7.87500000  | 1.31497782                    |
| Banadhs                       | 4        | 0                    | 6.37500000  | 1.49303941                    |
| Bansktt                       | 4        | 0                    | 7.12500000  | 1.54784797                    |
| RCastyl                       | 4        | 0                    | 4.25000000  | 1.55456318                    |
| RCaadva                       | 4        | 0                    | 3.50000000  | 1.41421356                    |
| <u>CONCODE=9 - CONSIST=0</u>  |          |                      |             |                               |
| Scotabs                       | 5        | 0                    | 6.10000000  | 0.74161985                    |
| Scotlty                       | 5        | 0                    | 5.10000000  | 0.65192024                    |
| OJtaste                       | 5        | 0                    | 5.80000000  | 1.89076704                    |
| OJconvt                       | 5        | 0                    | 8.10000000  | 0.96176920                    |
| Banadhs                       | 5        | 0                    | 5.70000000  | 1.35092561                    |
| Bansktt                       | 5        | 0                    | 5.90000000  | 1.51657509                    |
| RCastyl                       | 5        | 0                    | 4.30000000  | 1.15108644                    |
| RCaadva                       | 5        | 0                    | 4.80000000  | 1.03682207                    |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|--------------------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDCODE=9 - CONSIST=1</u>  |          |                      |             |                               |
| Scotabs                        | 1        | 0                    | 2.50000000  | -                             |
| Scotlty                        | 1        | 0                    | 6.00000000  | -                             |
| OJtaste                        | 1        | 0                    | 4.00000000  | -                             |
| OJconvt                        | 1        | 0                    | 7.50000000  | -                             |
| Banadhs                        | 1        | 0                    | 8.00000000  | -                             |
| Bansktt                        | 1        | 0                    | 9.00000000  | -                             |
| RCastyl                        | 1        | 0                    | 3.00000000  | -                             |
| RCaadva                        | 1        | 0                    | 2.00000000  | -                             |
| <u>CONDCODE=10 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 4        | 0                    | 7.00000000  | 1.47196014                    |
| Scotlty                        | 4        | 0                    | 5.62500000  | 0.62915287                    |
| OJtaste                        | 4        | 0                    | 5.37500000  | 1.54784797                    |
| OJconvt                        | 4        | 0                    | 8.37500000  | 1.79698822                    |
| Banadhs                        | 4        | 0                    | 5.62500000  | 2.17466473                    |
| Bansktt                        | 4        | 0                    | 6.75000000  | 2.21735578                    |
| RCastyl                        | 4        | 0                    | 4.25000000  | 1.89296945                    |
| RCaadva                        | 4        | 0                    | 2.12500000  | 0.85391256                    |
| <u>CONDCODE=10 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 1        | 0                    | 4.50000000  | -                             |
| Scotlty                        | 1        | 0                    | 6.00000000  | -                             |
| OJtaste                        | 1        | 0                    | 4.00000000  | -                             |
| OJconvt                        | 1        | 0                    | 8.50000000  | -                             |
| Banadhs                        | 1        | 0                    | 8.50000000  | -                             |
| Bansktt                        | 1        | 0                    | 5.00000000  | -                             |
| RCastyl                        | 1        | 0                    | 5.50000000  | -                             |
| RCaadva                        | 1        | 0                    | 3.50000000  | -                             |
| <u>CONDCODE=11 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 6        | 0                    | 4.58333333  | 2.08366664                    |
| Scotlty                        | 6        | 0                    | 5.83333333  | 1.88856206                    |
| OJtaste                        | 6        | 0                    | 5.16666667  | 1.80739223                    |
| OJconvt                        | 6        | 0                    | 8.33333333  | 1.12546287                    |
| Banadhs                        | 6        | 0                    | 4.75000000  | 0.75828754                    |
| Bansktt                        | 6        | 0                    | 4.50000000  | 2.09761770                    |
| RCastyl                        | 6        | 0                    | 3.41666667  | 1.85517295                    |
| RCaadva                        | 6        | 0                    | 4.58333333  | 0.91742393                    |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=12 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 6        | 0                          | 6.50000000  | 2.19089023                          |
| Scotlty                        | 6        | 0                          | 4.08333333  | 2.03510851                          |
| OJtaste                        | 6        | 0                          | 6.50000000  | 3.22490310                          |
| OJconvt                        | 6        | 0                          | 6.91666667  | 2.87083031                          |
| Banadhs                        | 6        | 0                          | 7.25000000  | 1.78185297                          |
| Banskt                         | 6        | 0                          | 5.16666667  | 0.68313005                          |
| RCastyl                        | 6        | 0                          | 6.50000000  | 0.83666003                          |
| RCaadva                        | 6        | 0                          | 4.33333333  | 2.06559112                          |
| <u>CONDCODE=13 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 1        | 0                          | 4.50000000  | -                                   |
| Scotlty                        | 1        | 0                          | 9.00000000  | -                                   |
| OJtaste                        | 1        | 0                          | 2.00000000  | -                                   |
| OJconvt                        | 1        | 0                          | 7.50000000  | -                                   |
| Banadhs                        | 1        | 0                          | 2.50000000  | -                                   |
| Banskt                         | 1        | 0                          | 2.00000000  | -                                   |
| RCastyl                        | 1        | 0                          | 2.00000000  | -                                   |
| RCaadva                        | 1        | 0                          | 6.00000000  | -                                   |
| <u>CONDCODE=13 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 4        | 0                          | 5.12500000  | 0.94648472                          |
| Scotlty                        | 4        | 0                          | 5.87500000  | 1.88745861                          |
| OJtaste                        | 4        | 0                          | 4.87500000  | 2.78013789                          |
| OJconvt                        | 4        | 0                          | 8.87500000  | 0.94648472                          |
| Banadhs                        | 1        | 0                          | 5.75000000  | 2.90114920                          |
| Banskt                         | 1        | 0                          | 6.37500000  | 1.49303941                          |
| RCastyl                        | 1        | 0                          | 4.37500000  | 1.03077641                          |
| RCaadva                        | 1        | 0                          | 3.50000000  | 1.77951304                          |
| <u>CONDCODE=13 - CONSIST=2</u> |          |                            |             |                                     |
| Scotabs                        | 1        | 0                          | 5.00000000  | -                                   |
| Scotlty                        | 1        | 0                          | 5.00000000  | -                                   |
| OJtaste                        | 1        | 0                          | 7.00000000  | -                                   |
| OJconvt                        | 1        | 0                          | 7.50000000  | -                                   |
| Banadhs                        | 1        | 0                          | 6.50000000  | -                                   |
| Banskt                         | 1        | 0                          | 7.00000000  | -                                   |
| RCastyl                        | 1        | 0                          | 5.50000000  | -                                   |
| RCaadva                        | 1        | 0                          | 5.00000000  | -                                   |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=14 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 2        | 0                          | 6.75000000  | 1.06066017                          |
| Scotlty                        | 2        | 0                          | 5.50000000  | 0.00000000                          |
| OJtaste                        | 2        | 0                          | 4.50000000  | 0.70710678                          |
| OJconvt                        | 2        | 0                          | 7.50000000  | 2.12132034                          |
| Banadhs                        | 2        | 0                          | 5.00000000  | 4.24264069                          |
| Bansktt                        | 2        | 0                          | 8.00000000  | 0.00000000                          |
| RCastyl                        | 2        | 0                          | 4.75000000  | 0.35355339                          |
| RCaadva                        | 2        | 0                          | 4.25000000  | 1.76776695                          |
| <u>CONDCODE=14 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 4        | 0                          | 6.75000000  | 1.55456318                          |
| Scotlty                        | 4        | 0                          | 4.87500000  | 0.62915287                          |
| OJtaste                        | 4        | 0                          | 5.00000000  | 0.81649658                          |
| OJconvt                        | 4        | 0                          | 5.87500000  | 1.49303941                          |
| Banadhs                        | 4        | 0                          | 5.75000000  | 1.65831240                          |
| Bansktt                        | 4        | 0                          | 6.37500000  | 1.18145391                          |
| RCastyl                        | 4        | 0                          | 5.12500000  | 1.10867789                          |
| RCaadva                        | 4        | 0                          | 2.62500000  | 0.62915287                          |
| <u>CONDCODE=15 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 5        | 0                          | 3.30000000  | 1.56524758                          |
| Scotlty                        | 5        | 0                          | 5.50000000  | 0.00000000                          |
| OJtaste                        | 5        | 0                          | 3.80000000  | 2.13892496                          |
| OJconvt                        | 5        | 0                          | 8.30000000  | 1.20415946                          |
| Banadhs                        | 5        | 0                          | 5.40000000  | 1.55724115                          |
| Bansktt                        | 5        | 0                          | 5.80000000  | 2.46475151                          |
| RCastyl                        | 5        | 0                          | 4.00000000  | 2.80624304                          |
| RCaadva                        | 5        | 0                          | 3.70000000  | 1.75356779                          |
| <u>CONDCODE=15 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 1        | 0                          | 2.50000000  | -                                   |
| Scotlty                        | 1        | 0                          | 5.50000000  | -                                   |
| OJtaste                        | 1        | 0                          | 7.00000000  | -                                   |
| OJconvt                        | 1        | 0                          | 10.00000000 | -                                   |
| Banadhs                        | 1        | 0                          | 10.00000000 | -                                   |
| Bansktt                        | 1        | 0                          | 9.50000000  | -                                   |
| RCastyl                        | 1        | 0                          | 4.00000000  | -                                   |
| RCaadva                        | 1        | 0                          | 2.00000000  | -                                   |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|--------------------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDCODE=16 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 4        | 0                    | 7.37500000  | 1.93110504                    |
| Scotlty                        | 4        | 0                    | 5.50000000  | 0.40824829                    |
| OJtaste                        | 4        | 0                    | 5.00000000  | 2.16024690                    |
| OJconvt                        | 4        | 0                    | 7.50000000  | 2.61406452                    |
| Banadhs                        | 4        | 0                    | 4.62500000  | 1.18145391                    |
| Bansktt                        | 4        | 0                    | 5.37500000  | 0.47871355                    |
| RCastyl                        | 4        | 0                    | 4.62500000  | 1.65201897                    |
| RCaadva                        | 4        | 0                    | 2.12500000  | 1.43614066                    |
| <u>CONDCODE=16 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 2        | 0                    | 7.50000000  | 1.41421356                    |
| Scotlty                        | 2        | 0                    | 5.00000000  | 0.70710678                    |
| OJtaste                        | 2        | 0                    | 6.75000000  | 1.76776695                    |
| OJconvt                        | 2        | 0                    | 8.75000000  | 0.35355339                    |
| Banadhs                        | 2        | 0                    | 5.25000000  | 0.35355339                    |
| Bansktt                        | 2        | 0                    | 8.25000000  | 0.35355339                    |
| RCastyl                        | 2        | 0                    | 5.50000000  | 0.70710678                    |
| RCaadva                        | 2        | 0                    | 4.25000000  | 1.76776695                    |
| <u>CONDCODE=17 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 3        | 0                    | 5.16666667  | 1.00083300                    |
| Scotlty                        | 3        | 0                    | 3.66666667  | 1.15470054                    |
| OJtaste                        | 3        | 0                    | 3.66666667  | 0.76376262                    |
| OJconvt                        | 3        | 0                    | 6.00000000  | 1.50000000                    |
| Banadhs                        | 3        | 0                    | 6.16666667  | 1.75594229                    |
| Bansktt                        | 3        | 0                    | 4.50000000  | 0.50000000                    |
| RCastyl                        | 3        | 0                    | 4.83333333  | 0.76376262                    |
| RCaadva                        | 3        | 0                    | 5.16666667  | 0.57735027                    |
| <u>CONDCODE=17 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 3        | 0                    | 4.66666667  | 1.25830574                    |
| Scotlty                        | 3        | 0                    | 4.66666667  | 0.76376262                    |
| OJtaste                        | 3        | 0                    | 4.66666667  | 0.57735027                    |
| OJconvt                        | 3        | 0                    | 8.00000000  | 1.32287566                    |
| Banadhs                        | 3        | 0                    | 5.16666667  | 1.52752523                    |
| Bansktt                        | 3        | 0                    | 5.33333333  | 2.36290781                    |
| RCastyl                        | 3        | 0                    | 5.16666667  | 0.57735027                    |
| RCaadva                        | 3        | 0                    | 4.83333333  | 0.76376262                    |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|--------------------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDCODE=18 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 2        | 0                    | 4.75000000  | 0.35355339                    |
| Scotlty                        | 2        | 0                    | 3.50000000  | 2.82842712                    |
| OJtaste                        | 2        | 0                    | 4.25000000  | 3.18198052                    |
| OJconvt                        | 2        | 0                    | 7.50000000  | 1.41421356                    |
| Banadhs                        | 2        | 0                    | 3.50000000  | 3.53553391                    |
| Bansktt                        | 2        | 0                    | 5.50000000  | 1.41421356                    |
| RCastyl                        | 2        | 0                    | 5.00000000  | 0.00000000                    |
| RCaadva                        | 2        | 0                    | 5.25000000  | 1.06066017                    |
| <u>CONDCODE=18 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 3        | 0                    | 4.66666667  | 1.25830574                    |
| Scotlty                        | 3        | 0                    | 4.33333333  | 1.52752523                    |
| OJtaste                        | 3        | 0                    | 5.50000000  | 1.50000000                    |
| OJconvt                        | 3        | 0                    | 7.33333333  | 2.46644143                    |
| Banadhs                        | 3        | 0                    | 6.16666667  | 2.02072594                    |
| Bansktt                        | 3        | 0                    | 7.16666667  | 0.28867513                    |
| RCastyl                        | 3        | 0                    | 5.00000000  | 0.86602540                    |
| RCaadva                        | 3        | 0                    | 5.66666667  | 0.28867513                    |
| <u>CONDCODE=19 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 4        | 0                    | 6.87500000  | 1.31497782                    |
| Scotlty                        | 4        | 0                    | 6.37500000  | 1.18145391                    |
| OJtaste                        | 4        | 0                    | 5.62500000  | 2.49582986                    |
| OJconvt                        | 4        | 0                    | 7.25000000  | 2.39791576                    |
| Banadhs                        | 4        | 0                    | 6.50000000  | 0.91287093                    |
| Bansktt                        | 4        | 0                    | 6.50000000  | 0.57735027                    |
| RCastyl                        | 4        | 0                    | 4.25000000  | 1.04083300                    |
| RCaadva                        | 4        | 0                    | 2.62500000  | 1.70171482                    |
| <u>CONDCODE=19 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 2        | 0                    | 7.50000000  | 0.70710678                    |
| Scotlty                        | 2        | 0                    | 5.75000000  | 0.35355339                    |
| OJtaste                        | 2        | 0                    | 3.00000000  | 0.00000000                    |
| OJconvt                        | 2        | 0                    | 7.75000000  | 0.35355339                    |
| Banadhs                        | 2        | 0                    | 5.00000000  | 0.00000000                    |
| Bansktt                        | 2        | 0                    | 5.00000000  | 2.82842712                    |
| RCastyl                        | 2        | 0                    | 6.50000000  | 1.41421356                    |
| RCaadva                        | 2        | 0                    | 2.75000000  | 2.47487373                    |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=20 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 6        | 0                          | 6.41666667  | 0.86120071                          |
| Scotlty                        | 6        | 0                          | 5.25000000  | 0.61237244                          |
| OJtaste                        | 6        | 0                          | 5.58333333  | 1.49721965                          |
| OJconvt                        | 6        | 0                          | 6.50000000  | 1.92353841                          |
| Banadhs                        | 6        | 0                          | 4.25000000  | 2.04328167                          |
| Bansktt                        | 6        | 0                          | 4.50000000  | 1.67332005                          |
| RCastyl                        | 6        | 0                          | 5.58333333  | 1.53025052                          |
| RCaadv                         | 6        | 0                          | 2.25000000  | 1.25499004                          |
| <u>CONDCODE=21 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 4        | 0                          | 4.87500000  | 0.94648472                          |
| Scotlty                        | 4        | 0                          | 5.25000000  | 0.28867513                          |
| OJtaste                        | 4        | 0                          | 5.37500000  | 1.10867789                          |
| OJconvt                        | 4        | 0                          | 7.75000000  | 2.10158670                          |
| Banadhs                        | 4        | 0                          | 6.00000000  | 0.70710678                          |
| Bansktt                        | 4        | 0                          | 5.75000000  | 2.02072594                          |
| RCastyl                        | 4        | 0                          | 3.50000000  | 1.41421356                          |
| RCaadv                         | 4        | 0                          | 5.00000000  | 2.38047614                          |
| <u>CONDCODE=21 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 1        | 0                          | 8.00000000  | -                                   |
| Scotlty                        | 1        | 0                          | 5.00000000  | -                                   |
| OJtaste                        | 1        | 0                          | 6.50000000  | -                                   |
| OJconvt                        | 1        | 0                          | 8.00000000  | -                                   |
| Banadhs                        | 1        | 0                          | 9.00000000  | -                                   |
| Bansktt                        | 1        | 0                          | 5.00000000  | -                                   |
| RCastyl                        | 1        | 0                          | 7.00000000  | -                                   |
| RCaadv                         | 1        | 0                          | 4.50000000  | -                                   |
| <u>CONDCODE=22 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 3        | 0                          | 6.83333333  | 0.76376262                          |
| Scotlty                        | 3        | 0                          | 3.66666667  | 2.46644143                          |
| OJtaste                        | 3        | 0                          | 4.66666667  | 0.76376262                          |
| OJconvt                        | 3        | 0                          | 6.83333333  | 2.36290781                          |
| Banadhs                        | 3        | 0                          | 5.33333333  | 2.56580072                          |
| Bansktt                        | 3        | 0                          | 4.66666667  | 1.60727513                          |
| RCastyl                        | 3        | 0                          | 5.00000000  | 1.32287566                          |
| RCaadv                         | 3        | 0                          | 4.83333333  | 1.04083300                          |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=22 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 2        | 0                          | 5.50000000  | 0.00000000                          |
| Scotlty                        | 2        | 0                          | 3.25000000  | 1.06066017                          |
| OJtaste                        | 2        | 0                          | 6.00000000  | 2.12132034                          |
| OJconvt                        | 2        | 0                          | 8.25000000  | 1.76776695                          |
| Banadhs                        | 2        | 0                          | 5.75000000  | 0.35355339                          |
| Bansktt                        | 2        | 0                          | 6.00000000  | 2.12132034                          |
| RCastyl                        | 2        | 0                          | .50000000   | 0.00000000                          |
| RCaadva                        | 2        | 0                          | 4.50000000  | 2.82842712                          |
| <u>CONDCODE=23 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 3        | 0                          | 6.00000000  | 0.50000000                          |
| Scotlty                        | 3        | 0                          | 5.33333323  | 0.28667513                          |
| OJtaste                        | 3        | 0                          | 5.66666667  | 0.57735027                          |
| OJconvt                        | 3        | 0                          | 8.33333333  | 1.60727513                          |
| Banadhs                        | 3        | 0                          | 7.00000000  | 0.50000000                          |
| Bansktt                        | 3        | 0                          | 4.50000000  | 1.80277564                          |
| RCastyl                        | 3        | 0                          | 5.66666667  | 1.44337567                          |
| RCaadva                        | 3        | 0                          | 5.00000000  | 1.50000000                          |
| <u>CONDCODE=23 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 3        | 0                          | 5.66666667  | 1.15470054                          |
| Scotlty                        | 3        | 0                          | 5.00000000  | 0.50000000                          |
| OJtaste                        | 3        | 0                          | 4.33333333  | 2.36290781                          |
| OJconvt                        | 3        | 0                          | 8.66666667  | 0.76376262                          |
| Banadhs                        | 3        | 0                          | 5.00000000  | 1.80277564                          |
| Bansktt                        | 3        | 0                          | 7.16666667  | 0.57735027                          |
| RCastyl                        | 3        | 0                          | 3.16666667  | 1.89296945                          |
| RCaadva                        | 3        | 0                          | 5.50000000  | 0.86602540                          |
| <u>CONDCODE=24 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 3        | 0                          | 6.16666667  | 0.57735027                          |
| Scotlty                        | 3        | 0                          | 5.66666667  | 1.25830574                          |
| OJtaste                        | 3        | 0                          | 7.16666667  | 2.75378527                          |
| DJconvt                        | 3        | 0                          | 6.16666667  | 1.52752523                          |
| Banadhs                        | 3        | 0                          | 6.33333333  | 2.02072594                          |
| Bansktt                        | 3        | 0                          | 4.50000000  | 0.86602540                          |
| RCastyl                        | 3        | 0                          | 5.83333333  | 0.28867513                          |
| RCaadva                        | 3        | 0                          | 6.00000000  | 0.50000000                          |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|--------------------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDCODE=24 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 2        | 0                    | 6.25000000  | 1.76776695                    |
| Scotlty                        | 2        | 0                    | 5.00000000  | 0.70710678                    |
| OJtaste                        | 2        | 0                    | 5.25000000  | 0.35355339                    |
| OJconvt                        | 2        | 0                    | 4.00000000  | 4.24264069                    |
| Banadhs                        | 2        | 0                    | 7.00000000  | 2.12132034                    |
| Bansktt                        | 2        | 0                    | 4.50000000  | 2.12132034                    |
| RCastyl                        | 2        | 0                    | 5.00000000  | 0.70710678                    |
| RCaadva                        | 2        | 0                    | 4.75000000  | 1.06066017                    |
| <u>CONDCODE=25 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 1        | 0                    | 4.50000000  | -                             |
| Scotlty                        | 1        | 0                    | 6.50000000  | -                             |
| OJtaste                        | 1        | 0                    | 7.50000000  | -                             |
| OJconvt                        | 1        | 0                    | 9.00000000  | -                             |
| Banadhs                        | 1        | 0                    | 6.50000000  | -                             |
| Bansktt                        | 1        | 0                    | 6.50000000  | -                             |
| RCastyl                        | 1        | 0                    | 4.50000000  | -                             |
| RCaadva                        | 1        | 0                    | 5.00000000  | -                             |
| <u>CONDCODE=25 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 4        | 0                    | 6.62500000  | 1.49303941                    |
| Scotlty                        | 4        | 0                    | 6.75000000  | 2.25462488                    |
| OJtaste                        | 4        | 0                    | 6.00000000  | 1.58113883                    |
| OJconvt                        | 4        | 0                    | 9.37500000  | 0.75000000                    |
| Banadhs                        | 4        | 0                    | 6.62500000  | 0.85391256                    |
| Bansktt                        | 4        | 0                    | 7.37500000  | 1.70171482                    |
| RCastyl                        | 4        | 0                    | 5.62500000  | 0.75000000                    |
| RCaadva                        | 4        | 0                    | 4.12500000  | 1.60078106                    |
| <u>CONDCODE=26 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 4        | 0                    | 6.87500000  | 0.25000000                    |
| Scotlty                        | 4        | 0                    | 5.12500000  | 0.85391256                    |
| OJtaste                        | 4        | 0                    | 6.87500000  | 0.62915287                    |
| OJconvt                        | 4        | 0                    | 7.12500000  | 1.65201897                    |
| Banadhs                        | 4        | 0                    | 5.62500000  | 2.13600094                    |
| Bansktt                        | 4        | 0                    | 5.25000000  | 1.32287566                    |
| RCastyl                        | 4        | 0                    | 4.87500000  | 0.62915287                    |
| RCaadva                        | 4        | 0                    | 3.50000000  | 0.70710678                    |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N<br/>Missing</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> |
|--------------------------------|----------|----------------------|-------------|-------------------------------|
| <u>CONDCODE=26 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 2        | 0                    | 8.00000000  | 0.70710678                    |
| Scotlty                        | 2        | 0                    | 4.00000000  | 2.12132034                    |
| OJtaste                        | 2        | 0                    | 6.50000000  | 1.41421356                    |
| OJconvt                        | 2        | 0                    | 6.25000000  | 1.76776695                    |
| Banadhs                        | 2        | 0                    | 4.25000000  | 1.76776695                    |
| Banskt                         | 2        | 0                    | 5.50000000  | 2.12132034                    |
| RCastyl                        | 2        | 0                    | 5.25000000  | 0.35355339                    |
| RCaadva                        | 2        | 0                    | 4.50000000  | 0.00000000                    |
| <u>CONDCODE=27 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 3        | 0                    | 6.50000000  | 4.09267639                    |
| Scotlty                        | 3        | 0                    | 4.16666667  | 1.52752523                    |
| OJtaste                        | 3        | 0                    | 5.50000000  | 1.50000000                    |
| OJconvt                        | 3        | 0                    | 7.83333333  | 0.57735027                    |
| Banadhs                        | 3        | 0                    | 6.16666667  | 1.52752523                    |
| Banskt                         | 3        | 0                    | 6.00000000  | 1.00000000                    |
| RCastyl                        | 3        | 0                    | 3.00000000  | 1.50000000                    |
| RCaadva                        | 3        | 0                    | 4.33333333  | 1.44337567                    |
| <u>CONDCODE=27 - CONSIST=1</u> |          |                      |             |                               |
| Scotabs                        | 2        | 0                    | 6.25000000  | 1.06066017                    |
| Scotlty                        | 2        | 0                    | 5.00000000  | 1.41421356                    |
| OJtaste                        | 2        | 0                    | 4.25000000  | 1.76776695                    |
| OJconvt                        | 2        | 0                    | 8.75000000  | 0.35355339                    |
| Banadhs                        | 2        | 0                    | 5.25000000  | 1.06066017                    |
| Banskt                         | 2        | 0                    | 4.00000000  | 1.41421356                    |
| RCastyl                        | 2        | 0                    | 3.00000000  | 2.82842712                    |
| RCaadva                        | 2        | 0                    | 3.50000000  | 2.82842712                    |
| <u>CONDCODE=28 - CONSIST=0</u> |          |                      |             |                               |
| Scotabs                        | 4        | 0                    | 6.37500000  | 0.85391256                    |
| Scotlty                        | 4        | 0                    | 5.00000000  | 1.08012345                    |
| OJtaste                        | 4        | 0                    | 6.00000000  | 1.63299316                    |
| OJconvt                        | 4        | 0                    | 8.25000000  | 2.36290781                    |
| Banadhs                        | 4        | 0                    | 3.75000000  | 2.95803989                    |
| Banskt                         | 4        | 0                    | 6.00000000  | 1.77951304                    |
| RCastyl                        | 4        | 0                    | 5.25000000  | 1.19023807                    |
| RCaadva                        | 4        | 0                    | 3.50000000  | 0.70710678                    |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=28 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 2        | 0                          | 8.50000000  | 2.12132034                          |
| Scotlty                        | 2        | 0                          | 5.50000000  | 0.00000000                          |
| OJtaste                        | 2        | 0                          | 7.50000000  | 0.70710678                          |
| OJconvt                        | 2        | 0                          | 9.25000000  | 1.06066017                          |
| Banadhs                        | 2        | 0                          | 7.50000000  | 0.70710678                          |
| Bansktt                        | 2        | 0                          | 7.25000000  | 2.47487373                          |
| RCastyl                        | 2        | 0                          | 5.00000000  | 0.70710678                          |
| RCaadva                        | 2        | 0                          | 1.75000000  | 1.06066017                          |
| <u>CONDCODE=29 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 4        | 0                          | 6.62500000  | 1.10867789                          |
| Scotlty                        | 4        | 0                          | 5.12500000  | 1.65201897                          |
| OJtaste                        | 4        | 0                          | 5.00000000  | 0.40824829                          |
| OJconvt                        | 4        | 0                          | 7.00000000  | 2.34520788                          |
| Banadhs                        | 4        | 0                          | 6.00000000  | 0.91287093                          |
| Bansktt                        | 4        | 0                          | 5.00000000  | 1.08012345                          |
| RCastyl                        | 4        | 0                          | 5.37500000  | 1.65201897                          |
| RCaadva                        | 4        | 0                          | 3.50000000  | 2.12132034                          |
| <u>CONDCODE=29 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 2        | 0                          | 5.25000000  | 1.06066017                          |
| Scotlty                        | 2        | 0                          | 6.50000000  | 1.41421356                          |
| OJtaste                        | 2        | 0                          | 5.00000000  | 2.82842712                          |
| OJconvt                        | 2        | 0                          | 9.25000000  | 1.06066017                          |
| Banadhs                        | 2        | 0                          | 4.25000000  | 0.35355339                          |
| Bansktt                        | 2        | 0                          | 4.50000000  | 0.70710678                          |
| RCastyl                        | 2        | 0                          | 4.50000000  | 4.24264069                          |
| RCaadva                        | 2        | 0                          | 4.25000000  | 0.35355339                          |
| <u>CONDCODE=30 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 1        | 0                          | 8.00000000  | -                                   |
| Scotlty                        | 1        | 0                          | 5.50000000  | -                                   |
| OJtaste                        | 1        | 0                          | 5.00000000  | -                                   |
| OJconvt                        | 1        | 0                          | 8.00000000  | -                                   |
| Banadhs                        | 1        | 0                          | 5.00000000  | -                                   |
| Bansktt                        | 1        | 0                          | 6.50000000  | -                                   |
| RCastyl                        | 1        | 0                          | 5.50000000  | -                                   |
| RCaadva                        | 1        | 0                          | 3.50000000  | -                                   |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=30 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 5        | 0                          | 6.90000000  | 1.78185297                          |
| Scotlty                        | 5        | 0                          | 5.90000000  | 0.41833001                          |
| OJtaste                        | 5        | 0                          | 5.80000000  | 1.25499004                          |
| OJconvt                        | 5        | 0                          | 7.90000000  | 1.85067555                          |
| Banadhs                        | 5        | 0                          | 5.00000000  | 1.58113883                          |
| Bansktt                        | 5        | 0                          | 6.30000000  | 1.71755640                          |
| RCastyl                        | 5        | 0                          | 5.50000000  | 0.61237244                          |
| RCaadva                        | 5        | 0                          | 4.00000000  | 2.42383993                          |
| <u>CONDCODE=31 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 2        | 0                          | 5.25000000  | 0.35355339                          |
| Scotlty                        | 2        | 0                          | 4.25000000  | 0.35355339                          |
| OJtaste                        | 2        | 0                          | 5.75000000  | 1.06066017                          |
| OJconvt                        | 2        | 0                          | 9.00000000  | 0.70710678                          |
| Banadhs                        | 2        | 0                          | 6.50000000  | 0.00000000                          |
| Bansktt                        | 2        | 0                          | 5.50000000  | 0.70710678                          |
| RCastyl                        | 2        | 0                          | 5.00000000  | 0.70710678                          |
| RCaadva                        | 2        | 0                          | 5.50000000  | 2.12132034                          |
| <u>CONDCODE=31 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 4        | 0                          | 5.12500000  | 3.49702254                          |
| Scotlty                        | 4        | 0                          | 5.50000000  | 1.41421356                          |
| OJtaste                        | 4        | 0                          | 4.37500000  | 1.70171482                          |
| OJconvt                        | 4        | 0                          | 8.12500000  | 1.75000000                          |
| Banadhs                        | 4        | 0                          | 6.37500000  | 1.75000000                          |
| Bansktt                        | 4        | 0                          | 5.00000000  | 1.58113883                          |
| RCastyl                        | 4        | 0                          | 4.37500000  | 0.85391256                          |
| RCaadva                        | 4        | 0                          | 4.00000000  | 2.51661148                          |
| <u>CONDCODE=32 - CONSIST=0</u> |          |                            |             |                                     |
| Scotabs                        | 1        | 0                          | 10.00000000 | -                                   |
| Scotlty                        | 1        | 0                          | 5.50000000  | -                                   |
| OJtaste                        | 1        | 0                          | 5.00000000  | -                                   |
| OJconvt                        | 1        | 0                          | 5.50000000  | -                                   |
| Banadhs                        | 1        | 0                          | 5.50000000  | -                                   |
| Bansktt                        | 1        | 0                          | 5.00000000  | -                                   |
| RCastyl                        | 1        | 0                          | 3.00000000  | -                                   |
| RCaadva                        | 1        | 0                          | 7.50000000  | -                                   |

Table 4-15 (continued)

| <u>Variable</u>                | <u>N</u> | <u>N</u><br><u>Missing</u> | <u>Mean</u> | <u>Standard</u><br><u>Deviation</u> |
|--------------------------------|----------|----------------------------|-------------|-------------------------------------|
| <u>CONDCODE=32 - CONSIST=1</u> |          |                            |             |                                     |
| Scotabs                        | 4        | 0                          | 6.62500000  | 2.39356777                          |
| Scotlty                        | 4        | 0                          | 4.75000000  | 1.32287566                          |
| OJtaste                        | 4        | 0                          | 6.37500000  | 1.49303941                          |
| OJconvt                        | 4        | 0                          | 6.25000000  | 1.19023807                          |
| Banadhs                        | 4        | 0                          | 7.87500000  | 0.47871355                          |
| Bansktt                        | 4        | 0                          | 5.00000000  | 1.35400640                          |
| RCastyl                        | 4        | 0                          | 4.37500000  | 1.03077641                          |
| RCaadva                        | 4        | 0                          | 2.37500000  | 1.31497782                          |

Table 4-16

TEST OF SIGNIFICANT DIFFERENCE BETWEEN RATINGS OF  
 "NEITHER DEFENSE NOR ATTACK" (NDNA) AND "NO DEFENSE" (ND) TREATMENTS  
 BY PRODUCT ATTRIBUTE AND LEVEL OF PERCEIVED SELF-CONSISTENCY

| Product                     | Attribute   | Perceived<br>Self-<br>Consistency | Treatment | n  | Mean   | Standard<br>Deviation | t       | $\alpha$ |
|-----------------------------|-------------|-----------------------------------|-----------|----|--------|-----------------------|---------|----------|
| Scotties<br>Tissues         | Absorbent   | Low                               | ND        | 8  | 5.7500 | 1.33630621            | -1.0163 | 0.3237   |
|                             |             |                                   | NDNA      | 11 | 6.5909 | 2.03492238            |         |          |
|                             |             | High                              | ND        | 3  | 6.1667 | 1.75594229            | -0.8537 | 0.4088   |
|                             |             |                                   | NDNA      | 12 | 6.9167 | 1.27623974            |         |          |
|                             | Lint        | Low                               | ND        | 4  | 4.1250 | 2.21265301            | -1.1834 | 0.2578   |
|                             |             |                                   | NDNA      | 11 | 5.2727 | 1.45539748            |         |          |
| Minute Maid<br>Orange Juice |             | High                              | ND        | 7  | 5.1429 | 1.40577042            | -0.4062 | 0.6896   |
|                             |             |                                   | NDNA      | 12 | 5.3333 | 0.65133895            |         |          |
|                             | Taste       | Low                               | ND        | 5  | 5.7000 | 0.67082039            | 1.6905  | 0.1116   |
|                             |             |                                   | NDNA      | 12 | 5.0417 | 0.75252102            |         |          |
|                             |             | High                              | ND        | 7  | 4.3571 | 1.81920967            | -1.7205 | 0.1059   |
|                             |             |                                   | NDNA      | 10 | 5.7500 | 1.51382518            |         |          |
|                             | Convenience | Low                               | ND        | 4  | 6.0000 | 1.29099445            | -1.2054 | 0.2480   |
|                             |             |                                   | NDNA      | 12 | 7.2917 | 1.98240365            |         |          |
|                             |             | High                              | ND        | 6  | 5.5000 | 2.40831892            | -2.8285 | 0.0134   |
|                             |             |                                   | NDNA      | 10 | 8.2500 | 1.51382518            |         |          |

Table 4-16 (continued)

| <u>Product</u>          | <u>Attribute</u> | <u>Perceived<br/>Self-<br/>Consistency</u> | <u>Treatment</u> | <u>n</u> | <u>Mean</u> | <u>Standard<br/>Deviation</u> | <u>t</u> | <u><math>\alpha</math></u> |
|-------------------------|------------------|--------------------------------------------|------------------|----------|-------------|-------------------------------|----------|----------------------------|
| Band Aid<br>Bandages    | Skin-tight       | Low                                        | ND               | 4        | 5.0000      | 1.08012345                    | 0.3331   | 0.7453                     |
|                         |                  |                                            | NDNA             | 9        | 4.7778      | 1.12113534                    |          |                            |
|                         |                  | High                                       | ND               | 7        | 6.5000      | 2.12132034                    | 1.2861   | 0.2147                     |
|                         |                  |                                            | NDNA             | 13       | 5.4231      | 1.59224885                    |          |                            |
|                         | Adhesive         | Low                                        | ND               | 6        | 4.9167      | 2.53804387                    |          |                            |
|                         |                  |                                            | NDNA             | 9        | 6.5000      | 1.14564392                    |          |                            |
|                         |                  | High                                       | ND               | 5        | 5.4000      | 1.98116128                    | -1.2901  | 0.2153                     |
|                         |                  |                                            | NDNA             | 13       | 6.6154      | 1.72184308                    |          |                            |
| RCA Videodisc<br>Player | Stylus           | Low                                        | ND               | 7        | 3.7143      | 1.31836840                    | -2.4800  | 0.0255                     |
|                         |                  |                                            | NDNA             | 10       | 4.8500      | 0.52967495                    |          |                            |
|                         |                  | High                                       | ND               | 4        | 4.7500      | 2.72335577                    | -0.6758  | 0.5102                     |
|                         |                  |                                            | NDNA             | 12       | 5.2917      | 0.65568609                    |          |                            |
|                         | Advantage        | Low                                        | ND               | 4        | 3.5000      | 0.70710678                    | -1.7267  | 0.1099                     |
|                         |                  |                                            | NDNA             | 10       | 4.5000      | 1.05409255                    |          |                            |
|                         |                  | High                                       | ND               | 8        | 2.1250      | 1.15727512                    | -5.1297  | 0.0001                     |
|                         |                  |                                            | NDNA             | 12       | 4.7500      | 1.09751786                    |          |                            |

TABLE 4-17

ANALYSIS OF VARIANCE OF BELIEF LEVELS IN THE ADVANTAGE ATTRIBUTE  
OF THE RCA VIDEO DISC PLAYER ON THE PART OF RESPONDENTS WITH  
HIGH LEVEL OF PERCEIVED SELF CONSISTENCY, BY TYPE OF  
DEFENSE AND INTERVAL BETWEEN DEFENSE AND ATTACK

| A. Defense: Supportive-Same vs. No Defense               |           |             |             |          |                            |
|----------------------------------------------------------|-----------|-------------|-------------|----------|----------------------------|
| <u>Time: Two Days, Seven Days</u>                        |           |             |             |          |                            |
| <u>Source</u>                                            | <u>DF</u> | <u>SS</u>   | <u>MS</u>   | <u>F</u> | <u><math>\alpha</math></u> |
| Defense                                                  | 1         | 15.20119048 | 15.20119048 | 4.13     | 0.0670                     |
| Time                                                     | 1         | 0.73214286  | 0.73214286  | 0.20     | 0.6643                     |
| Defense x Time                                           | 1         | 0.00000000  | 0.00000000  | 0.00     | 1.0000                     |
| Error                                                    | 11        | 40.50000000 | 3.68181818  |          |                            |
|                                                          |           |             |             |          |                            |
| B. Defense: Refutational-Same vs. Refutational-Different |           |             |             |          |                            |
| <u>Time: Immediate, Two Days, Seven Days</u>             |           |             |             |          |                            |
| Defense                                                  | 1         | 0.00694444  | 0.00694444  | 0.00     | 0.9610                     |
| Time                                                     | 2         | 34.36293860 | 17.18146930 | 6.16     | 0.0144                     |
| Defense x Time                                           | 2         | 7.76206140  | 3.88103070  | 1.39     | 0.2862                     |
| Error                                                    | 12        | 33.47916667 | 2.78993056  |          |                            |

defenses were not significantly different from each other, their pooled mean and standard deviation were calculated and compared to the no-defense treatment mean. The refutational defense mean of 3.7222 ( $\alpha = 1.7249286$ ) was not significantly different from the no-defense mean ( $t = 2.6388$ ,  $\alpha > 0.01$ ).

Since neither refutational nor supportive defenses conferred immunity to the attack on the advantage attribute of the RCA videodisc player among those with high perceived self-consistency, part 'a' of Hypothesis 5 is rejected. Since none of the attacking messages were effective among those with low perceived self-consistency, part 'b' of Hypothesis 5 could not be tested.

Regarding the reason why none of the attacking messages was effective among those with low perceived self-consistency, the reasons cited above to explain why six of eight attacking messages were ineffectual could be applicable here. Or, possibly, the reason might be that since those with low perceived self-consistency are not uncomfortable with things perceived as contradictory, they did not consider any of the attacking messages to be dissonance-arousing.

### Inoculation Theory and the Level of Perceived Risk Attached to A Product

As discussed in Chapter I, the level of perceived risk attached to a product was included in the current study on an exploratory basis. Although inoculation theory does not provide a basis from which to predict how any of the research outcomes might be affected by the level of perceived risk, it was felt that perceived risk could affect the outcomes in some way.

The data of the current study indicate that the level of perceived risk attached to a product may not be useful to indicate even where inoculation theory might be applicable within a marketing context. For all respondents, the particular attribute that was attacked seemed to affect the research outcomes. However, whether the attribute that was attacked was of a high risk or low risk product appeared irrelevant. Thus, the convenience attribute of orange juice, a low risk product, was an area for the possible application of inoculation theory; the taste attribute of orange juice, though, was not such an area. Similarly, the advantage attribute of the RCA videodisc player, a high risk product, was a possible application area of the theory; the stylus attribute of this product was not.

For those respondents with a high level of perceived self-consistency, only the high risk RCA videodisc player was a candidate for inoculation theory's application.

However, the advantage attribute, and not the stylus attribute, was the possible application area.

Regardless of the product attributes considered, whether the product had a low or high level of perceived risk attached to it, or whether respondents had a low or high level of perceived self-consistency, the current study did not support the possible application of inoculation theory within a marketing context.

In the next and final chapter, the major elements of the present research undertaking will be summarized. This will be followed by the writer's conclusions about the research findings and recommendations for action and future research.

## FOOTNOTES

1. Although this third order interaction could not be explained from a practical standpoint, it could be explained statistically in terms of a spurious value. Specifically, the significant interaction could be caused by a respondent's belief level that was very different from that of the other respondents in the group. An examination of the respondents' actual ratings did not disclose such a spurious value.
2. Statistically, the finding that the six attacking messages were ineffective could be due to the fact that the sample sizes were too small to detect significant differences, even if such differences existed. To investigate this possibility, the power of the tests of significant differences was determined for each of the six tests of Table 4-12, where no significant differences were found. Specifically, the probabilities of discerning no-defense belief levels 20 percent below the neither defense nor attack belief levels were calculated. The results are as follows:

| <u>Attribute</u> | <u>20% Change in Initial<br/>Belief Due to Attack-<br/>ing Message</u> | <u>Probability of Detect-<br/>ing Change in Belief<br/>Level as Significant</u> |
|------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Absorbent        | 1.3522                                                                 | 0.5319                                                                          |
| Lint             | 1.0609                                                                 | 0.3015                                                                          |
| Taste            | 1.0727                                                                 | 0.3669                                                                          |
| Skin-tight       | 1.0318                                                                 | 0.2090                                                                          |
| Adhesive         | 1.3136                                                                 | 0.2676                                                                          |
| Stylus           | 1.0182                                                                 | 0.2546                                                                          |

It can be seen, for example, that if the message attacking the skin-tight attribute of Band-Aid bandages actually lowered the initial belief level of 5.1591 to 4.1273, there would be only a probability of 20.9 percent of concluding that this difference is significant. Equivalently, with the attacking message effective in reducing the initial belief level by 1.0318 points, there would be a probability of 79.1 percent of concluding that the message was ineffective in significantly lowering the level of belief. Thus, the power of the tests is weak. Consequently, although practical reasons can be offered to explain why the attacking messages were ineffective, statistically, they might be effective and their effectiveness might be discernable with a sample size larger than the one used here.

Significantly, the shifts in the belief levels following the no-defense treatments were in the right direction for seven of the eight product attributes. That is, the attacks reduced the initial levels of belief. For the eighth attribute, the belief level following the no-defense treatment was higher than the initial level, but this can be explained as a random result. It can be concluded, then, that the results reported herein are from a pilot study and that future research should replicate this study with a larger sample size. The analyses and interpretations which follow, though, are based upon the current findings, including the ineffectiveness of six attacking messages.

3. If the supportive-different defense was able to effect a level of belief 20 percent above that for the no-defense treatment, the probability of concluding that the supportive-different defense was effective is 0.2005. Thus, the power of this test is weak, and if, in fact, the supportive different defense is superior to the no-defense treatment, a sample size larger than the current one would be needed to discern the differences.
4. If refutational defenses are superior to a no-defense treatment and could effect a belief level 20 percent above that for the no-defense treatment, the probability of discerning this superiority for the convenience and advantage attributes is 0.2148 and 0.1131, respectively. Thus, the power of these tests is weak and a sample size larger than the current one would be needed to detect significant differences between the refutational and no-defense treatments.

## CHAPTER V

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

An attempt was made by the writer to determine if people can be immunized against marketing persuasion. The salient aspects of this attempt will be summarized in this chapter. The conclusions from the research will also be discussed. The chapter will conclude with recommendations for both action and future research.

#### Summary of the Research Undertaking

The past 15 years have seen an increase in the number and kinds of attacks to which marketers' products are subject. Encouraged by the FTC, advertisers are using comparative advertising to name competitors' products and to claim superiority over them for their own brands. The FTC has also required companies to attack their own brands in the form of corrective advertising, a remedy invoked against companies that the Commission has found guilty of deceptive advertising. In addition, it is not unusual for a firm's customers, during the maturity stage of its products' life cycles, to respond in to competitors' persuasive messages by switching to their products. And, often, the

competitors' products are neither really different from, nor superior to, those products they had been using.

It is clear that there is a marketing need to investigate methods that could effectively confer resistance to persuasion. Yet, the preponderance of work in the area of persuasive communication has focused on making communication more effective, not less.

A number of general methodologies exist which, in theory, could induce resistance to persuasion. These are outgrowths of sundry attitude change theories and were not developed specifically to reduce persuasive effectiveness. These methodologies include the behavioral commitment approach, anchoring the belief to other cognitions, inducing resistant cognitive states, and prior training in resisting persuasive attempts. These methodologies were reviewed and the limitations to their practical marketing use were discussed.

Inoculation theory stems from a biological analogy, in which a person is made resistant to some attacking virus by pre-exposure to a weakened dose of the virus. This mild dose stimulates the person's defenses, enabling him to overcome any massive viral attack to which he is later exposed, yet it is not so strong that the pre-exposure will, itself, cause the disease.

Supportive therapy, such as sufficient rest, a proper diet and vitamin supplements, is an alternative method of

conferring biological resistance. However, inoculation is likely to be superior to supportive therapy to the extent that a person has previously been brought up in a germ-free environment. Such an individual would be highly vulnerable when suddenly exposed to massive doses of the disease virus.

In order to use the inoculation analogy to derive hypotheses about producing resistance to persuasion, McGuire and his associates dealt with beliefs that had been maintained in a "germ-free" ideological environment, i.e., beliefs that were seldom, if ever, attacked and that were probably considered by individuals as impossible to attack. These beliefs were cultural truisms dealing with health issues, such as, "It's a good idea to brush your teeth after every meal if at all possible," and "Mental illness is not contagious."

Just as biological resistance to a viral attack could be induced either by supportive therapy or by inoculation, McGuire reasoned that resistance to a persuasive attack on certain health beliefs could be conferred either by providing reasons supporting the beliefs (supportive defenses) or by pre-exposing persons to arguments against the beliefs, but weakening the arguments by simultaneously refuting them (refutational defenses). However, just as biological inoculation is superior to supportive therapy in producing resistance to a viral attack, the refutational

defense should be superior to the supportive defense in inducing resistance to a persuasive attack on the cultural truisms.

The experiments that were designed to test the hypotheses that came to comprise inoculation theory were reviewed. The results supported the idea that persons could be immunized against attacks directed at cultural truisms. The current study addressed the question of whether inoculation theory could be extended to beliefs that could be the subject of marketing communications.

Within a marketing context, the great majority of consumer beliefs are not as strongly or aseptically held as cultural truisms. Nevertheless, there is evidence to support the postulate of selective exposure which is an assertion that people selectively seek information to support their beliefs and selectively avoid information that is contrary to those beliefs. Thus, even though marketing-related beliefs are assailed, people holding those beliefs may not be consciously aware of those attacks and, consequently, those beliefs, like cultural truisms, are "seldom, if ever, attacked." From this theoretical framework, one could legitimately inquire if inoculation theory can be applied to a marketing milieu.

The two published studies which attempted to extend inoculation theory to a marketing context were reviewed. Both studies concluded that such an extension is possible.

However, rather than deal with ordinary marketing issues, e.g., the benefits of a product, the authors of both studies dealt with controversial issues that were more in the realm of public policy than marketing. In addition, the messages they used to defend and attack the issues were editorials and not advertisements, requiring considerably more time for their perusal than the typical consumer advertisement.

The current study was undertaken to determine if inoculation theory could be extended to a marketing context, where the subject matter of communication is most often not controversial or particularly important to consumers.

During the Summer and Fall 1980 semesters, 181 Liberal Arts undergraduate students at Iona College, in New Rochelle, New York, participated in an experiment to test inoculation theory's applicability to marketing communication. In the first of two sessions, held either two or seven days apart from the second session, respondents were asked to participate in a study that was meant to determine to what extent one's personality affects his ability to critically analyze advertising. Respondents were given 60 seconds to read print advertising copy and to underline what they thought was the single most important idea in it.

The advertising copy was for three low-risk products, Scotties tissues, Minute Maid orange juice, and Band-Aid

bandages, and one high-risk product, the RCA videodisc player. The copy itself dealt with product attributes that were considered important by participants in two focus-group interviews, conducted prior to the commencement of the experiment.

After completing the underlining task, respondents were given 25 minutes to complete a personality test which measured the level of their perceived self-consistency.

At the second session, respondents were asked to read and underline additional advertisements and to complete two questionnaires. The first was an opinion questionnaire, which measured respondents' levels of belief in the attributes of the four experimental products, and which was to be completed within three minutes. The second questionnaire was to be completed within two minutes and was meant to determine if respondents felt that sufficient time had been provided for the completion of the different parts of the experiment; what, if anything, they had heard about the experiment before participating in it; and whether they thought the experiment could have measured something other than what they had been told it measured. At the end of this session, respondents were fully debriefed.

The experiment was designed so that some respondents received supportive defenses (messages supporting a product's attribute) followed by attacking messages, some received refutational defenses (messages refuting attacks on a

product's attribute) followed by attacking messages, some received only attacking messages, and some received neither defending nor attacking messages. For both the supportive and refutational defenses, some messages focused on the same attribute that was subsequently attacked (supportive-same and refutational-same defenses, respectively), while other messages focused on an attribute different from that subsequently attacked (supportive-different and refutational-different defenses, respectively).

The following hypotheses were tested:

- $H_1$  - Both supportive and refutational defenses are superior to a no-defense treatment in conferring resistance to persuasion.
- $H_2$  - A supportive defense is less effective than a refutational defense in conferring immunity to persuasion.
- $H_3$  - The primary effectiveness of the refutational defense rests in its ability to motivate the person to develop defenses rather than in the material provided when the attack is refuted. Thus, the effectiveness of the refutational-different defense should be equal to that of the refutational-same defense.
- $H_4$  -
  - a. Immunity conferred by refutational defenses will not decay as rapidly as that conferred by supportive defenses.
  - b. Immunity conferred by refutational-different defenses will decay less rapidly than that conferred by refutational-same defenses.

- H<sub>5</sub> - a. Refutational defenses are superior to supportive defenses in inducing resistance to persuasion among those with high perceived self-consistency.
- b. Supportive and refutational defenses are equally effective in inducing resistance to persuasion among those with low perceived self-consistency.

The rationales for these hypotheses were discussed. In addition, the level of perceived risk attached to a product was included among the independent variables in the research, on an exploratory basis, to see if the research outcomes would be affected in some way by a product having either a low or high level of perceived risk.

The data were analyzed by analyses of variance and t-tests. Support for the applicability of inoculation theory to a marketing context was not forthcoming.

Six of the eight attacking messages were found to be ineffective in significantly lowering initial levels of belief. For the two attributes whose belief levels were significantly affected by the attacking messages, the convenience attribute of Minute Maid orange juice and the advantage attribute of the RCA videodisc player, belief levels following either a supportive defense or a refutational defense were not significantly different from those following a no-defense treatment. In other words, the defensive treatments did not immunize respondents against subsequent attacks, and hypotheses 1-4 were not supported.

Classifying respondents by low and high levels of perceived self-consistency did not modify the above results. The attacking message was effective in significantly lowering the belief level in the advantage attribute of the RCA videodisc player only among those with a high level of perceived self-consistency. However, with these individuals, too, the inoculation theory hypotheses were not confirmed.

The above results were the same even when the theory was considered from the perspective of the level of perceived risk attached to a product. The data suggested that the level of perceived risk may not be useful to indicate even where inoculation theory might be applicable within a marketing context. The particular attribute that was attacked seemed to affect the research outcomes and not whether the particular product was high-risk or low-risk. Thus, the attack was effective for one of two attributes of the high-risk RCA videodisc player. It was, also, effective for one of two attributes of the low-risk Minute Maid orange juice.

### Conclusion

The principal conclusion that may be drawn from the current study is that inoculation theory may not, in fact, be applicable to a marketing context, where the communications medium is print. And even though the current study did not embrace the broadcast media, the inapplicability of the theory may be extendable to those media.

The studies which examined inoculation theory and found support for it dealt with cultural truisms and controversial issues. The important thing about the issues used, whether it was "Mental illness is not contagious," (cultural truism) or "All things considered, getting air bags installed as a safety device in new cars would be a wise decision" (controversial issue) was that they were abstract ideas. With such ideas, one cannot readily ascertain, from personal experience, their truth or falsity. How can one empirically determine if mental illness is or is not contagious? Unless one actually had air bags installed in his new car as a safety device, and found that they worked properly and were worth their additional cost, how can one really say that their installation is a wise decision? It would seem that in the area of abstract ideas one's belief can be affected by persuasive argumentation--a persuasive attack can significantly lower initial levels of belief and persuasive defenses can inoculate those beliefs.

The marketing issues used in the present study were not, generally, abstract ideas. The attributes, absorbent and lint, for Scotties tissues; taste for Minute Maid orange juice; skin-tight and adhesive for Band-Aid bandages; and stylus for the RCA videodisc player, were verifiable, either through personal experience or word-of-mouth discussions. (Although at the time of this study the RCA videodisc player was not actively marketed, so that any claims for or against

its use of a stylus were not verifiable, respondents' use of, and familiarity with, comparable styli on their stereophonic recordings could have served equally as well as experience with the videodisc player). In these instances, the attacking messages had no effect on the experience-based beliefs.

Regarding the attributes of convenience for Minute Maid orange juice and advantage for the RCA videodisc player, the attacking messages were effective in lowering initial belief levels significantly. In the case of the convenience attribute of Minute Maid orange juice, this belief may have been similar to that of a truism. In comparing the convenience of already reconstituted orange juice with frozen orange juice that requires the consumer to add water and stir, many consumers probably would have thought it unassailable that the former is more convenient. In fact, the neither defense nor attack belief level for this attribute is the highest among all the attributes rated (7.7273, Table 4-6). Pointing out, in the attack, that the heavier weight of Minute Maid compared to that of frozen orange juice should be considered when carrying home the groceries, and the additional refrigerator space taken up by Minute Maid compared to frozen juice, directed respondents to take a closer look at the meaning of convenience.

The advantage attribute of the RCA videodisc player was much like an abstract idea. Unless one had experience

with both the player and the video cassette recorders in terms of costs and performance (picture and sound quality), one could not verify that the videodisc player was or was not advantageous to video cassette recorders. In this instance, the initial belief level was significantly lowered by a persuasive attack.

The reason why inoculation theory did not apply to the attributes of convenience and advantage lies in the defensive messages themselves. The refutational messages used in the prior research with truisms and controversial issues acknowledged an opposing point-of-view and then proceeded to refute those claims. The messages began with an introductory paragraph, mentioning that the belief was clearly valid, but since occasionally one heard misguided counter-arguments attacking it, it was sound to consider some of the counter-arguments and show how they were incorrect. A separate counter-argument was mentioned and refuted in each subsequent paragraph. Thus, these messages clearly signalled that beliefs could be attacked and showed how they could be refuted. Even refutational-different defenses demonstrated that attacks could be defended. When the attacks did come, respondents were armed with belief-bolstering material.

By contrast, advertising messages are not so structured. They contain relatively simple, straightforward product benefit appeals. The defensive messages of the

current study (Appendix B) were written in this manner. There was no stimulus in the advertising that warned respondents that the particular benefit could be attacked and that such attacks could be refuted. Without such a stimulus aid, the connection between the two messages--defense, attack--may not have been made by respondents. Hence, when the attack came, they were unprepared with a defense. Inoculation did not take place.

As mentioned earlier, inoculation theory within a marketing context may not be applicable where the communications media are print and broadcast. It is within these media that advertising copy generally does not explicitly defend against possible attacks. However, where the medium of communication is personal, e.g., personal selling, inoculation theory may very well apply. This writer can attest to the successful use of the principles of the theory while he was engaged in the personal selling of mini-computers. Anticipating the nature of possible competitive attacks, and refuting them for the customer before they materialized, effectively reduced the impact of the attack when it came. The full extent of the applicability of the theory to this medium remains to be investigated.

### Recommendations

In Chapter I it was stated that the current study is significant in a number of ways. First, it should be significant to marketers in providing them with an effective advertising strategy to reduce the impact of competitors' comparative advertising, and helping them extend the maturity stage of their products' life cycles. The failure to support the theory of inoculation unfortunately does not provide advertisers with such a strategy. However, the fact that six of eight attacking messages were ineffective suggests that undue concern for competitors' attacks may be unwarranted. The study suggested the difficulty of identifying product attributes important enough to make consumers reevaluate their beliefs when those attributes are attacked. It, also, suggested the reluctance on the part of consumers to rely upon advertising to influence their beliefs when personal experience with the product is possible. Thus, to offer a need-satisfying product and to facilitate additional hands-on experience with the product through free samples and money-saving coupons might be the most effective strategy to prevent consumer brand switching when a product reaches maturity.

Second, it was stated that the study should be important to the FTC by alerting it to how an advertiser required to engage in corrective advertising might moderate the effectiveness of such advertising. Even though the study

did not support the use of prior defensive treatments to mitigate the effects of an imposed corrective advertising campaign, it did suggest that it is possible to write advertising copy in a way that consumers will not be aware of the advertising's true intents and purposes. Thus, through skillful copy writing, the corrective nature of an advertisement could be masked. If the FTC wants the corrective advertising to be effective, it must insist that the corrective component of the advertising be recognized as such by consumers during copy pretesting.

In addition, since the study suggested that many product attributes are not really salient with respect to their influence on belief levels, the fact that a firm advertised a particular belief deceptively may not have stimulated sales of the firm's product, and corrective advertising focusing on that attribute may be meaningless. The Commission must determine that the deceptive claim had focused on a truly important attribute before it exerts its energies against the deceiving firm.

Finally, it was stated that the study should be of interest to scholars by possibly suggesting additional areas of research. In this respect, the results of the current study were bountiful.

Would inoculation theory work in a marketing context where consumers had experience with the product, but the product attribute benefit was not ascertainable through such

experience? For example, the advertisers of STP motor oil claimed that regular use of the product would increase a car's gasoline mileage. Such a claim cannot be substantiated through use, as gasoline mileage also depends upon the condition of the car and the car user's driving habits. Could consumers who use STP be inoculated against a message attacking the gasoline mileage claim?

It was claimed that inoculation theory might not apply to advertising in the broadcast media because of the way copy in this medium is written. This claim needs to be tested. It was also claimed that the theory might be applicable where the channel of communication is personal. This should be formally researched, not just for marketing applications but, also, for possible management relevance, e.g., in the area of personnel administration.

Focus group interviews were used to determine important product attributes which, as it turned out, may not have been important enough so that attacking them affected one's belief level. Even though measures of salience are available, do their results correctly identify belief-dependent attributes? If they don't, how can such attributes be identified?

The results of this study are, of course, subject to the imposed limitations. Future research could relax these limitations. For example, how would the outcomes be affected by varying the lengths of the messages, by using

identified competitors as the source of an attack and by defending the products of companies that differ in their market standing?

It is hoped that the results of this study, although not what were hoped for, will nevertheless be useful both in terms of what they uncovered and the questions they raised. If they are, then the writer will have made a valuable contribution to the field of marketing.

## **APPENDIXES**

## APPENDIX A

### RESEARCH DESIGN

#### TREATMENTS RECEIVED ON EACH ADVERTISEMENT

Each subject received all the treatments shown in any one column of a given block. The design of 32 conditions was replicated either five or six times, yielding a sample size of 181 subjects. Letters in the cells indicate the form of the advertisements received for each product as follows: A and A' advertisements for tissues; B and B' advertisements for orange juice; C and C' advertisements for bandages; D and D' advertisements for videodisc players.

| Treatments            |                                               | Block I: condition code number |    |    |    |    |    |    |    |
|-----------------------|-----------------------------------------------|--------------------------------|----|----|----|----|----|----|----|
|                       |                                               | 01                             | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
| Defensive<br>Messages | Refute-same,<br>immediately<br>before attack  | A                              | A' | B  | B' | C  | C' | D  | D' |
|                       | Refute-same,<br>two days<br>before attack     | B                              | B' | C  | C' | D  | D' | A  | A' |
|                       | Refute-diff.,<br>immediately<br>before attack | C'                             | C  | D' | D  | A' | A  | B' | B  |
|                       | Refute-diff.,<br>two days<br>before attack    | D'                             | D  | A' | A  | B' | B  | C' | C  |
| Attacking<br>Messages | Same counter-<br>arguments                    | A                              | A' | A  | A' | A  | A' | A  | A' |
|                       | Same counter-<br>arguments                    | B                              | B' | B  | B' | B  | B' | B  | B' |
|                       | Novel counter-<br>arguments                   | C                              | C' | C  | C' | C  | C' | C  | C' |
|                       | Novel counter-<br>arguments                   | D                              | D' | D  | D' | D  | D' | D  | D' |

| Treatments            |                                               | Block II: condition code number |    |    |    |    |    |    |    |
|-----------------------|-----------------------------------------------|---------------------------------|----|----|----|----|----|----|----|
|                       |                                               | 09                              | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Defensive<br>Messages | Refute-same,<br>immediately<br>before attack  | A                               | A' | B  | B' | C  | C' | D  | D' |
|                       | Refute-same,<br>seven days<br>before attack   | B                               | B' | C  | C' | D  | D' | A  | A' |
|                       | Refute-diff.,<br>immediately<br>before attack | C'                              | C  | D' | D  | A' | A  | B' | B  |
|                       | Refute-diff.,<br>seven days<br>before attack  | D'                              | D  | A' | A  | B' | B  | C' | C  |
| Attacking<br>Messages | Same counter-<br>arguments                    | A                               | A' | A  | A' | A  | A' | A  | A' |
|                       | Same counter-<br>arguments                    | B                               | B' | B  | B' | B  | B' | B  | B' |
|                       | Novel counter-<br>arguments                   | C                               | C' | C  | C' | C  | C' | C  | C' |
|                       | Novel counter-<br>arguments                   | D                               | D' | D  | D' | D  | D' | D  | D' |

| Treatments            |                                             | Block III: condition code number |     |     |     |     |     |     |     |
|-----------------------|---------------------------------------------|----------------------------------|-----|-----|-----|-----|-----|-----|-----|
|                       |                                             | 17                               | 18  | 19  | 20  | 21  | 22  | 23  | 24  |
| Defensive<br>Messages | Supportive,<br>immediately<br>before attack | A'                               | A   | B'  | B   | C'  | C   | D'  | D   |
|                       | Supportive,<br>two days<br>before attack    | B                                | B'  | C   | C'  | D   | D'  | A   | A'  |
|                       | None                                        | (C)                              | (C) | (D) | (D) | (A) | (A) | (B) | (B) |
|                       | None                                        | (D)                              | (D) | (A) | (A) | (B) | (B) | (C) | (C) |
| Attacking<br>Messages | Novel counter-<br>arguments                 | A                                | A'  | B   | B'  | C   | C'  | D   | D'  |
|                       | Novel counter-<br>arguments                 | B                                | B'  | C   | C'  | D   | D'  | A   | A'  |
|                       | Novel counter-<br>arguments                 | C                                | C'  | D   | D'  | A   | A'  | B   | B'  |
|                       | None                                        | (D)                              | (D) | (A) | (A) | (B) | (B) | (C) | (C) |

| Treatments            |                                             | Block IV: condition code number |     |     |     |     |     |     |     |
|-----------------------|---------------------------------------------|---------------------------------|-----|-----|-----|-----|-----|-----|-----|
|                       |                                             | 25                              | 26  | 27  | 28  | 29  | 30  | 31  | 32  |
| Defensive<br>Messages | Supportive,<br>immediately<br>before attack | A'                              | A   | B'  | B   | C'  | C   | D'  | D   |
|                       | Supportive,<br>seven days<br>before attack  | B                               | B'  | C   | C'  | D   | D'  | A   | A'  |
|                       | None                                        | (C)                             | (C) | (D) | (D) | (A) | (A) | (B) | (B) |
|                       | None                                        | (D)                             | (D) | (A) | (A) | (B) | (B) | (C) | (C) |
| Attacking<br>Messages | Novel counter-<br>arguments                 | A                               | A'  | B   | B'  | C   | C'  | D   | D'  |
|                       | Novel counter-<br>arguments                 | B                               | B'  | C   | C'  | D   | D'  | A   | A'  |
|                       | Novel counter-<br>arguments                 | C                               | C'  | D   | D'  | A   | A'  | B   | B'  |
|                       | None                                        | (D)                             | (D) | (A) | (A) | (B) | (B) | (C) | (C) |

**APPENDIX B**  
**ADVERTISING COPY**

It has come to our attention that some people are not using Scotties facial tissues properly.

Because Scotties are absorbent, some people think they can use them as a blotter, with their new fountain pens. Don't. Use a blotter.

Some people use Scotties to wipe up all sorts of spills. Don't. Use a paper towel.

So, for what should you use Scotties? For sniffles, sneezes, applying cold cream, removing make-up, pampering your skin,.....

Scotties, the not all-purpose absorbent facial tissue.

..

Scotties facial tissues are strong enough for that thunderous sneeze, yet soft enough for a baby's tender skin.

But not always.

You see, Scotties facial tissues are strong and soft when they are fresh. And they will stay fresh a long time.

When Scotties are not fresh, they will become linty to warn you that their effectiveness has been reduced. This will most likely happen after you have been carrying Scotties around for many days in your pocket. Just take some fresh Scotties from the box and feel protected.

Scotties won't let you down without warning you in advance.

There was a time when people used to carry linen handkerchiefs in their pocket or purse, to be used for sniffles and sneezes. But that was before we introduced Scotties facial tissues.

Today, Scotties facial tissues are so absorbent that they have replaced handkerchiefs for sniffles and sneezes. And because Scotties are absorbent, they have even rushed in where handkerchiefs feared to tread.

Today, you will see Scotties used for applying cold cream and removing make-up and..... .

Scotties, the absorbent facial tissue.

No one enjoys the discomfort of a cold or the flu. So if you should come down with either, get plenty of rest, take aspirin, drink liquids, and use Scotties facial tissues.

Scotties are the facial tissues you can rely on. They're strong enough to cover up a thunderous sneeze, yet so soft that they won't irritate your tender skin.

Scotties come in a large variety of colors and designs in a dispenser you'll find convenient to use.

So use Scotties, the strong and soft facial tissue.

In continuing efforts to monitor the advertising claims of American business, we tested Scott Paper Company's claim that Scotties facial tissues are absorbent.

We took two Scotties tissues and two Marcal tissues, another brand that did not claim to be absorbent. We spilled two small glasses of water on a kitchen table and tried to wipe them up with the tissues. Both the Scotties and the Marcals could not absorb the spills.

Marcal doesn't claim to be absorbent and it isn't. Scotties claims to be absorbent and it isn't.

The Truth in Advertising Committee

Committed to Uncovering Advertising Abuses

Advertisers are eager to tell customers the good things about their products. But seldom do they say what might be wrong with those products.

For example, Scott Paper Company advertises that their Scotties facial tissues are soft. We took a close look at that product and found that Scotties ARE soft -- much TOO soft. Which is why they become linty after only a few days in your pocket or purse.

Scott Paper Company won't tell you that. But we will.

The Truth in Advertising Committee

Committed to Uncovering Advertising Abuses

Is there a difference between frozen orange juice and Minute Maid orange juice? You be the judge.

Frozen orange juice has to be reconstituted. That means you have to add water to it. In most cases, the water you add is tap water == possibly hard water, certainly impure water.

With Minute Maid, we've already added the water. Pure water. Fresh water.

Is there a difference between frozen orange juice and Minute Maid orange juice? You can taste the difference.

Why do consumers prefer ready-made Minute Maid orange juice to frozen orange juice? Convenience is why.

Unlike frozen orange juice which you have to make, Minute Maid is already made for you.

Unlike frozen orange juice which, when first made is not cold and refreshing, refrigerated Minute Maid is immediately ready to be enjoyed.

And, unlike frozen orange juice, there are no messy containers to wash when you've finished Minute Maid.

So, if convenience is important to you, buy ready-made Minute Maid orange juice-- the convenient orange juice.

Everyone knows that "new improved" is better than "the same old thing." So we at Minute Maid set out to improve our orange juice.

We asked some of our customers how they thought we could improve Minute Maid. They told us they love the taste of our orange juice. They love the fact that it is made from 100% orange juice. They love the way our orange juice refreshes them and quenches their thirst. They loved everything about Minute Maid orange juice.

And so will you.

When you wake up in the morning and want to start the day with a refreshing drink, isn't it convenient to have ready-made Minute Maid orange juice in the refrigerator?

When you want to take a break during the day and pause for a delightful pick-me-up, isn't it convenient to have Minute Maid orange juice at your disposal?

And in the evening, straight or in a screwdriver, doesn't Minute Maid conveniently hit the spot?

Any time of day, ready-made Minute Maid orange juice is the convenient drink.

The next time you pick up a container of Minute Maid orange juice at the supermarket, read the label. You'll see that the orange juice is made "from concentrate." That means you are paying for someone to add water to what was originally frozen juice concentrate.

Do yourself a favor. If you're thirsty for the taste of orange juice, buy frozen orange juice. Then you add water. And save money.

A message from the National Consumer Advisory Service --  
a nonprofit organization dedicated to making you a  
better consumer

Is ready-made Minute Maid orange juice really more convenient than frozen orange juice?

True, you have to reconstitute frozen orange juice before you can drink it, but a can of frozen orange juice weighs considerably less than a quart container of Minute Maid, a factor you should consider when you're carrying home the groceries. And if you're stocking up on juice, two or three quarts of Minute Maid take up much more refrigerator space than two or three cans of frozen juice.

If it's convenience you want, you'll find it with frozen orange juice.

A message from the National Consumer Advisory Service --

a nonprofit organization dedicated to making you a  
better consumer

Some consumers have written us, wanting to know why their skin is discolored and wrinkled where they have used a Band-Aid brand bandage. If you, too, have wondered about this, let's set the record straight. If a bandage is not skin-tight, dust or other foreign substances can enter an open wound and cause a serious infection. The wrinkled skin you have when you remove a Band-Aid brand bandage is an assurance that our bandage was skin-tight.

Band-Aid brand bandages won't help your wound heal faster. But it won't make it heal slower, either.

What makes Band-Aid brand bandages better than other bandages? Band-Aid bandages have more adhesive than the others, so they stick... and stick...until you take them off.

Other bandages don't stick securely to your skin; they become loose. That's when dirt and bacteria can get into your wound and infect it.

You'll know when that happens by the pain you'll feel.

But with Band-Aid brand bandages, the only pain you'll feel is the momentary "ouch" when you take them off.

Oh, the pain of those cuts and bruises. But, oh, the agony of those infected cuts and bruises.

For the pain of cuts and bruises, reach for Band-Aid brand bandages. When you use Band-Aid brand bandages you can be sure that no foreign substances will get into your wound to infect it. That's because our bandages fit you skin-tight. So, for the relief of pain and the prevention of agony, don't ask for any bandage, ask for Band-Aid bandages.

Cuts and bruises can be painful. If you get a cut or a bruise, take care of it. Clean it, dry it, and put a Band-Aid brand bandage over it.

Band-Aid bandages have extra adhesive so they really stick to your skin, keeping out bacteria that could infect your wound. While nature does her job, healing your cut or bruise, Band-Aid bandages do their job, protecting your skin.

Band-Aid bandages won't come off, until you take them off.

Remember the last time you cut yourself and needed a bandage? Remember what your skin looked like when you removed the bandage? If you used Band-Aid brand bandages your skin probably was wrinkled and unsightly.

We tested several different brands of bandage and found that only Band-Aids have this effect. Since wrinkled skin does not mean your cut has healed any faster, why use a bandage that calls unsightly attention to yourself?

Consumer Products Testing Laboratories

Where Making You a Smarter Shopper is Our Goal

Some people can't stand the pain of a cut. Others can't stand the pain of removing a bandage once the cut has healed.

Cuts can hurt, but must bandages hurt, too?

We tested several different brands of bandage and found that only one brand, Band-Aid brand bandages, really hurts when it is removed. Further testing demonstrated that Band-Aid bandages had much more adhesive than any other brand of bandage.

You can't prevent the pain caused by a cut, but you can prevent the pain caused by a bandage.

Consumer Products Testing Laboratories

Where Making You a Smarter Shopper is Our Goal

We designed RCA's new videodisc system to operate like a record turntable. But with two major differences. First, the discs you play will let you see and hear outstanding entertainment on your TV screen at your convenience. Second, you needn't ever worry that a worn stylus will ruin your favorite discs.

The stylus has a tracking weight of less than 0.005 grams. It barely touches the disc's grooves. It is made of a diamond-like material that, in exhaustive tests, was not worn after 10,000 hours of use.

When the stylus eventually wears, it will not touch the disc at all. That's the time to replace it.

RCA's videodisc system -- an engineering marvel.

Why the RCA videodisc system?

Our research department discovered that what most people want in a video system is to view pre-recorded material of their own choosing at convenient times.

So RCA developed the videodisc system. Because it is a player and not a recorder, it costs much less than videocassette recorders. You can choose your entertainment from a wide selection of pre-recorded discs, the size of standard LP records. And the discs cost a lot less than pre-recorded cassettes.

Ask your local RCA dealer about the new RCA videodisc system -- the inexpensive entertainment alternative.

RCA's new videodisc system looks like a conventional record turntable. It has a diamond-like stylus that resembles a conventional record tone arm. But here's where comparisons end.

The new RCA videodisc system attaches to your TV set. When stylus meets disc, you and your family can view movies, theater productions, television programs, opera, educational features and sporting events, at your leisure.

Just when you thought your home entertainment center was complete, RCA expanded your options -- the videodisc system, an entertainment alternative.

RCA is proud to introduce the latest technological innovation in the field of entertainment -- RCA's videodisc system (VDS).

The RCA VDS looks like an ordinary hi-fi turntable that attaches to your television receiver. With the VDS you can play material pre-recorded on discs the size of standard LP records. You can choose discs from a wide selection of pre-recorded movies, theatrical productions, television programs, operas, educational features and sporting events.

Ask your local RCA dealer for a demonstration of our videodisc system -- then complete your home entertainment center with RCA -- products for the 80's and beyond.

RCA's videodisc system enables you to view on your TV screen, material pre-recorded on discs the size of an LP record. The system is composed of a specially designed turntable that reads the audio and visual signals on the disc through a stylus.

We feel that unless the stylus is replaced when it is worn, it can ruin your discs. But there is no indication when the stylus should be replaced. We believe that RCA's videodisc system has two costs you should be aware of -- the replacement cost of a worn-out stylus and ruined discs.

Consumers' Product Evaluation Group

Helping Consumers Judge New Products for More than a Decade

RCA has just introduced their videodisc system, a new television peripheral. The system looks like a standard hi-fi turntable and operates like one, too. The RCA system plays material pre-recorded on record-like discs, transmitting the images onto your TV screen.

And here is the problem. RCA's videodisc system is merely a player. Unlike videocassette systems, including RCA's own Selectavision, you cannot record any programs with the videodisc system.

In our estimation, consumers should pass up the RCA videodisc system in favor of the more versatile videocassette recorders.

Consumers' Product Evaluation Group

Helping Consumers Judge New Products for More than a Decade

APPENDIX C  
OPINION SURVEY

Note: Beliefs on each of the four advertised products are measured by four items as follows:

- a. Minute Maid orange juice: items 1, 6, 10, 14
- b. Band-Aid brand bandages: items 2, 7, 11, 15
- c. Scotties facial tissues: items 3, 5, 9, 13
- d. RCA's videodisc system: items 4, 8, 12, 17

Five of the items are "reversed" as they appear on the questionnaire, i.e., the left end is given a value of "10" and the right "1" in assessing belief of the advertised claim. All other items receive a "1" value on the left and "10" on the right.

Items 6 and 16 are repeated as a reliability check.

Please record the last four digits of your Social Security number here:

— — — —

We are interested in determining the extent to which the ability to read advertisements analytically is affected by a person's opinions about the advertised products. Thus, we here ask you to indicate your personal opinion about the truth of the statements listed below by circling the one number that best indicates your judgement of the truth of that statement. Notice that the larger the number, the more true the statement is judged; the smaller the number the more false it is judged.

Please respond to each of the 17 statements on this and the following pages by indicating your own personal opinion of the statement's truth, regardless of whether your opinion agrees or disagrees with some or all of the material read in this test. Answer the questions in the order presented and do not skip any question. Work rapidly, as only three minutes are allowed for answering all 17 questions.

1. Minute Maid orange juice tastes better than reconstituted frozen orange juice.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

2. Band-Aid brand bandages prevent wounds from becoming infected because they are skin-tight.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

3. Scotties facial tissues are absorbent.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

4. The stylus on RCA's videodisc system will not ruin discs.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

5. Scotties facial tissues become linty because they are too soft.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

6. Minute Maid orange juice is more convenient than frozen orange juice.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

7. The extra adhesive on Band-Aid brand bandages makes Band-Aid better than other bandages.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

8. Because RCA's videodisc system is a player and cannot record, it is less preferable to a videocassette recorder which both records and plays.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

9. Since Scotties facial tissues cannot wipe up water spills, they are not absorbent.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

10. Because Minute Maid orange juice is already reconstituted, it tastes better than frozen orange juice.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

11. Band-Aid brand bandages wrinkle your skin because they are skin-tight to promote healing.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

12. Because there is no indication when the stylus on RCA's videodisc system is worn and should be replaced, it could ruin discs.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

13. Scotties facial tissues become linty when they are not fresh.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

14. Having ready made Minute Maid orange juice in the refrigerator when you want it is convenient.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

15. Band-Aid brand bandages have too much adhesive.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

16. Minute Maid orange juice is more convenient than frozen orange juice.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

17. The fact that RCA's videodisc system does not record may be an advantage over videocassette recorders.

|            |   |          |   |           |   |          |   |            |    |
|------------|---|----------|---|-----------|---|----------|---|------------|----|
| 1          | 2 | 3        | 4 | 5         | 6 | 7        | 8 | 9          | 10 |
| DEFINITELY |   | PROBABLY |   | UNCERTAIN |   | PROBABLY |   | DEFINITELY |    |
| FALSE      |   | FALSE    |   |           |   | TRUE     |   | TRUE       |    |

APPENDIX D  
CRITIQUE OF THE EXPERIMENT

Please write the last four digits of your social security number here: \_ \_ \_ \_

Directions: Please indicate your answers by placing a check (✓) in the appropriate space and by writing in the space provided.

1. Having participated in this two-part study, please indicate whether you think enough time was provided for you to complete each task.

|                                            | Not enough<br>time was<br>provided | Enough time<br>was<br>provided | Too much<br>time was<br>provided |
|--------------------------------------------|------------------------------------|--------------------------------|----------------------------------|
| <b>Part I</b>                              |                                    |                                |                                  |
| Analysis of advertisements                 | _____                              | _____                          | _____                            |
| Completion of personality<br>questionnaire | _____                              | _____                          | _____                            |
| <b>Part II</b>                             |                                    |                                |                                  |
| Analysis of advertisements                 | _____                              | _____                          | _____                            |
| Completion of opinion<br>questionnaire     | _____                              | _____                          | _____                            |

2. Did you hear anything about any part of this study before you participated in it?  

☐ Yes      ☐ No
3. If you answered "yes" to question 2, please indicate what it was you heard about the study.  

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
4. What else, if anything, besides your ability to analyze advertising, do you think this study may have measured?  

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Thank you.

**APPENDIX E**  
**MEASURE OF SELF-CONSISTENCY PERSONALITY TEST**

Please record the last four digits of your social security number  
here: \_ \_ \_ \_

1. From the following list of 17 personality traits, please select five that best describe you. Circle the five that you choose.

|             |             |
|-------------|-------------|
| optimistic  | studious    |
| honest      | considerate |
| reliable    | kind        |
| sincere     | friendly    |
| cautious    | independent |
| practical   | happy       |
| sensitive   | tolerant    |
| idealistic  | adventurous |
| intelligent |             |

2. From the following list of 17 personality traits, please select five that best describe you. Circle the five that you choose.

|                |                          |
|----------------|--------------------------|
| impatient      | worrier                  |
| self-conscious | moody                    |
| rebellious     | immature                 |
| quick-tempered | easily influenced        |
| lazy           | gullible                 |
| envious        | often feel misunderstood |
| disorganized   | stubborn                 |
| guilt-ridden   | noisy                    |
| self-centered  |                          |

3. Please record the ten traits you have circled in questions (1) and (2) in the spaces provided down the side of the following matrix. Repeat the ten words in the spaces provided across the bottom of the matrix.

|           |    |    |    |    |    |    |    |    |    |     |
|-----------|----|----|----|----|----|----|----|----|----|-----|
| 1. _____  |    |    |    |    |    |    |    |    |    |     |
| 2. _____  |    |    |    |    |    |    |    |    |    |     |
| 3. _____  |    |    |    |    |    |    |    |    |    |     |
| 4. _____  |    |    |    |    |    |    |    |    |    |     |
| 5. _____  |    |    |    |    |    |    |    |    |    |     |
| 6. _____  |    |    |    |    |    |    |    |    |    |     |
| 7. _____  |    |    |    |    |    |    |    |    |    |     |
| 8. _____  |    |    |    |    |    |    |    |    |    |     |
| 9. _____  |    |    |    |    |    |    |    |    |    |     |
| 10. _____ |    |    |    |    |    |    |    |    |    |     |
|           | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
|           |    |    |    |    |    |    |    |    |    |     |

4. Please rate the degree of conflict or incompatibility you perceive between each pair of traits in the above matrix. Use a scale from 0 to 5, with 0 indicating that the two traits don't contradict each other, but tend to go hand in hand, and 5 indicating that the two traits contradict each other and do not go hand in hand. Write your rating of each pair of traits in the proper space in the above matrix.

For example, if you have written "reliable" for trait one and "noisy" for trait ten, and you perceive these two traits as being slightly contradictory, you might rate the pair "1" and you would write "1" in the upper, right-hand box of the matrix.

## **BIBLIOGRAPHY**

## BIBLIOGRAPHY

- Aaker, David A. and John G. Myers, Advertising Management. (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975).
- Bennett, Edith B., "Discussion, Decision, Commitment and Consensus in 'Group Decision'," Human Relations (August 1955), Vol. 8, No. 3, pp. 251-273.
- Bither, Steward W., Ira J. Dolich and Elaine B. Nell, "The Application of Attitude Immunization Techniques in Marketing," Journal of Marketing Research (February 1971), Vol. 8, No. 1, pp. 56-61.
- Britt, Stewart Henderson, Psychological Principles of Marketing and Consumer Behavior (Lexington, Massachusetts: Lexington Books, 1978).
- Brown, Cheryl L., "Intervening Variables in Resistance to Persuasion," Dissertation Abstracts International (March 1972), Vol. 32 (9-B), pp. 5421-5422.
- Burgoon, Michael, et al., "Propensity of Persuasive Attack and Intensity of Pretreatment Messages as Predictors of Resistance to Persuasion," Journal of Psychology, (January 1976), Vol. 92, No. 1, pp. 123-129.
- Cantril, Hadley, "Behavior Under Situational Stress: The Invasion from Mars," Readings in Social Psychology, Eds. Eleanor Maccoby, et al. (New York: Henry Holt and Company, 1958).
- Citron, Abraham F. and John Harding, "An Experiment in Training Volunteers to Answer Anti-Minority Remarks," Journal of Abnormal and Social Psychology (April 1950), Vol. 45, No. 2, pp. 310-328.
- Cohen, Arthur R., Jack W. Brehm and Bill Latane, "Choice of Strategy and Voluntary Exposure to Information Under Public and Private Conditions," Journal of Personality (March 1959), Vol. 27, No. 1, pp. 63-73.
- Colley, Russell H., Ed., Defining Advertising Goals (New York: Association of National Advertisers, 1961).
- Crane, Edgar, "Immunization: With and Without Use of Counter-Arguments," Journalism Quarterly (Autumn 1962), Vol. 39, No. 4, pp. 445-450.

- Cronen, Vernon and Gary LaFleur, "Inoculation Against Persuasive Attacks: A Test of Alternative Explanations," Journal of Social Psychology (August 1977), Vol. 102, No. 2, pp. 255-265.
- Crutchfield, Richard S., "Conformity and Character," American Psychologist (May 1955), Vol. 10, No. 5, pp. 191-198.
- Cunningham, Scott, "The Major Dimensions of Perceived Risk," Risk Taking and Information Handling, Ed. Donald F. Cox (Boston, Massachusetts: Division of Research, Graduate School of Business Administration, Harvard University, 1967).
- Deutsch, Morton and Harold B. Gerard, "A Study of Normative and Informational Social Influences Upon Individual Judgement," Journal of Abnormal and Social Psychology (November 1955), Vol. 51, No. 3, pp. 629-636.
- Dipboye, Robert L., "The Effectiveness of One-Sided and Two-Sided Appeals as a Function of Familiarization and Context," Journal of Social Psychology (June 1977), Vol. 102, No. 1, pp. 125-131.
- Himmelfarb, Samuel and Alice H. Eagly, "Orientations to the Study of Attitudes and their Change," Readings in Attitude Change, Eds. Samuel Himmelfarb and Alice H. Eagly (New York: John Wiley and Sons, Inc., 1974).
- Hovland, Carl I., Irving L. Janis and Harold H. Kelley, Communication and Persuasion (New Haven, Connecticut: Yale University Press, 1953).
- Hughes, G. David, Attitude Measurement for Marketing Strategies (Glenview, Illinois: Scott, Foresman and Company, 1971).
- Insko, Chester A., Theories of Attitude Change (New York: Appleton-Century-Crofts, 1967).
- Isaacs, Morton, "Involvement as a Factor in Resistance to Persuasion," Dissertation Abstracts International (January, 1973), Vol. 33 (7-A), p. 3775.
- Janis, Irving L. and Seymour Feshbach, "Effects of Fear-Arousing Communications," Journal of Abnormal and Social Psychology (January 1953), Vol. 48, No. 1, pp. 78-92.

- Janis, Irving L. and Peter B. Field, "Sex Differences and Personality Factors Related to Persuasibility," Personality and Persuasibility, Eds. I.L. Janis and C.I. Hovland (New Haven, Connecticut: Yale University Press, 1959).
- Janis, Irving L. and Donald Rife, "Persuasibility and Emotional Disorder," Personality and Persuasibility, Eds. I.L. Janis and C.I. Hovland (New Haven, Connecticut: Yale University Press, 1959), pp. 121-140.
- Jones, Vicki A., "Cognitive Structure and Resistance to Persuasion," Dissertation Abstracts International (June 1972), Vol. 32 (12-A), p. 7086.
- Katz, Elihu, "On Reopening the Question of Selectivity in Exposure to Mass Communications," Theories of Cognitive Consistency: A Sourcebook, Ed. Robert P. Abelson, et al. (Chicago, Illinois: Rand McNally and Company, 1968).
- Kiesler, Charles A., Barry E. Collins and Norman Miller, Attitude Change (New York: John Wiley and Sons, Inc., 1969).
- Lavidge, Robert J. and Gary A. Steiner, "A Model for Predictive Measurements of Advertising Effectiveness," Journal of Marketing (October 1961), Vol. 25, No. 6, pp. 59-62.
- Lesser, Gerald S. and Robert P. Abelson, "Personality Correlates of Persuasibility in Children," Personality and Persuasibility, Eds. I.L. Janis and C.I. Hovland (New Haven, Connecticut: Yale University Press, 1959).
- Linton, Harriet and Elaine Graham. "Personality Correlates of Persuasibility," Personality and Persuasibility, Eds. I.L. Janis and C.I. Hovland (New Haven, Connecticut: Yale University Press, 1959).
- Manis, Melvin, "Immunization, Delay and the Interpretation of Persuasive Messages," Journal of Personality and Social Psychology (June 1965), Vol. 1, No. 6, pp. 541-550.
- Manis, Melvin and Joan B. Blake, "Interpretation of Persuasive Messages as a Function of Prior Immunization," Journal of Abnormal and Social Psychology (March 1963), Vol. 66, No. 3, pp. 225-230.
- Mausner, Bernard, "The Effect of Prior Reinforcement on the Interaction of Observer Pairs," Journal of Abnormal and Social Psychology (January 1954), Vol. 49, No. 1, pp. 65-68.

- McGuire, William J., "Cognitive Consistency and Attitude Change," Journal of Abnormal and Social Psychology (May 1960), Vol. 60, No. 3, pp. 345-353.
- \_\_\_\_\_, "The Effectiveness of Supportive and Refutational Defenses in Immunizing and Restoring Beliefs Against Persuasion," Sociometry (June 1961), Vol. 24, No. 2, pp. 184-197.
- \_\_\_\_\_, "Persistence of the Resistance to Persuasion Induced by Various Types of Prior Belief Defenses," Journal of Abnormal and Social Psychology (April 1962), Vol. 64, No. 4, pp. 241-248.
- \_\_\_\_\_, "Inducing Resistance to Persuasion," Advances in Experimental Social Psychology, Vol. 1, Ed. Leonard Berkowitz (New York: Academic Press, 1964).
- \_\_\_\_\_, "Persuasion, Resistance and Attitude Change," Handbook of Communications, Eds. Ithiel de Sola Pool, et al. (Chicago, Illinois: Rand McNally College Publishing Company, 1973).
- McGuire, William J. and Demetrios Papageorgis, "The Relative Efficacy of Various Types of Prior Belief-Defense in Producing Immunity Against Persuasion," Journal of Abnormal and Social Psychology (March 1961), Vol. 62, No. 2, pp. 327-337.
- McGurrian, Martin C., "Person Perception, Dissonance and Resistance to Persuasion," Dissertation Abstracts International (June 1972), Vol. 32 (12-A), pp. 7087-7088.
- Miller, Michael D. and Michael Burgoon, "Predictions of Resistance to Persuasion: Propensity of Persuasive Attack, Pretreatment Language Intensity and Expected Delay of Attack," Journal of Psychology (January 1977), Vol. 95, No. 1, pp. 105-110.
- Newcomb, Theodore Mead, The Acquaintance Process (New York: Henry Holt and Company, 1961).
- Nunnally, Jum C., Psychometric Theory (New York: McGraw-Hill, 1967).
- Nunnally, Jum C. and Howard M. Bobren, "Variables Concerning the Willingness to Receive Communications on Mental Health," Journal of Personality (March 1959), Vol. 27, No. 1, pp. 38-46.

- Papageorgis, Demetrios and William J. McGuire, "The Generality of Immunity to Persuasion Produced by Pre-Exposure to Weakened Counterarguments," Journal of Abnormal and Social Psychology (May 1961), Vol. 62, No. 3, pp. 475-481.
- Perry, Michael and B. Curtis Hamm, "Canonical Analysis of Relations Between Socioeconomic Risk and Personal Influence in Purchase Decisions," Journal of Marketing Research (August 1969), Vol. 6, No. 3, pp. 351-354.
- Pryor, Albert, "Resistance to Persuasive Attacks Against Belief Levels Varying in Initial Levels of Acceptance," Dissertation Abstracts International (May, 1973), Vol. 33 (11-B), p. 5548.
- Ray, Michael L., "The Effect of Choice Controversy and Selectivity on the Effectiveness of Various Defenses to Persuasion," Dissertation Abstracts (1967), Vol. 28 (6-A), pp. 2340-2341.
- \_\_\_\_\_, "Biases in Selection of Messages Designed to Induce Resistance to Persuasion," Journal of Personality and Social Psychology (August 1968), Vol. 9, No. 4, pp. 335-339.
- Robinson, John P. and Phillip R. Shaver, Measures of Social Psychological Attitudes (Ann Arbor, Michigan: Survey Research Center, Institute of Social Research, 1973).
- Rogers, Ronald W. and Donald L. Thistlethwaite, "An Analysis of Active and Passive Defenses in Inducing Resistance to Persuasion," Journal of Personality and Social Psychology (April 1969), Vol. 11, No. 4, pp. 301-308.
- Rosenbaum, Milton E. and Douglas E. Franc, "Opinion Change as A Function of External Commitment and Amount of Discrepancy from the Opinion of Another," Journal of Abnormal and Social Psychology (July 1960), Vol. 61, No. 1, pp. 15-20.
- Samelson, Franz, "Conforming Behavior Under Two Conditions of Conflict in the Cognitive Field," Journal of Abnormal and Social Psychology (September 1957), Vol. 55, No. 2, pp. 181-187.
- Sawyer, Alan G., "The Effects of Repetition of Refutational and Supportive Advertising Appeals," Journal of Marketing Research (February 1973), Vol. 10, No. 1, pp. 23-33.

- Sternthal, Brian, Persuasion and the Mass Communication Process. Unpublished doctoral dissertation. Ohio State University, 1972.
- Stone, Vernon A., "Personality Factors in Immunizing Against Source or Content of Persuasive Messages," Dissertation Abstracts (1967), Vol. 28 (3-A), p. 1129.
- \_\_\_\_\_, "Individual Differences and Inoculation Against Persuasion," Journalism Quarterly (Summer 1969), Vol. 46, No. 2, pp. 267-273.
- Szybillo, George J. and Richard Heslin, "Resistance to Persuasion: Inoculation Theory in a Marketing Context," Journal of Marketing Research (November 1973), Vol. 10, No. 4, pp. 396-403.
- Tannenbaum, Percy H., "Initial Attitude Toward Source and Concept as Factors in Attitude Change Through Communication," Public Opinion Quarterly (Summer 1956), Vol. 20, No. 2, pp. 413-425.
- Van Dyke, James E., "Inoculation, Commitment and the Attenuation of Persuasive Influence," Dissertation Abstracts International (March 1974), Vol. 34 (9-A, Pt. 1), pp. 5409-5410.
- Webster's New Twentieth Century Dictionary, 2nd ed. Unabridged. (William Collins Publishers, Inc., 1979).
- Weiss, Walter and Bernard J. Fine, "The Effect of Induced Aggressiveness on Opinion Change," Journal of Abnormal and Social Psychology (January 1956), Vol. 52, No. 1, 109-114.
- Wellins, Richard and Elliott McGinnies, "Counterarguing and Selective Exposure to Persuasion," Journal of Social Psychology (October 1977), Vol. 103, No. 1, pp. 115-127.
- Zajonc, Robert B., "The Process of Cognitive Tuning in Communication," Journal of Abnormal and Social Psychology (September 1960), Vol. 61, No. 2, pp. 159-167.