

ABSTRACT

AN ANALYSIS OF THE EFFECTIVENESS OF POST-TRANSACTION COMMUNICATIONS IN REDUCING COGNITIVE DISSONANCE

By

Shelby D. Hunt

The purpose of the research was to investigate some of the decision oriented marketing implications of Leon Festinger's theory of cognitive dissonance. The study used an "after only with control" design to examine whether certain post-transaction messages from a retailer to recent purchasers would be effective in assisting the consumer in reducing dissonance, and, if the messages were effective in reducing dissonance, what benefits would accrue to the retailer for providing the messages.

A sample population consisting of purchasers of refrigerators from a major department store in the Detroit Metropolitan Area was randomly divided into a control and two experimental groups with a total sample size of one hundred and fifty-two households. One experimental group received a letter from the department store giving the consumers post-transaction reassurances that buying a specific appliance was an excellent decision. The second experimental group received a telephone call from the department

store expressing the same types of reassurances as were given in the letter. The control group received no post-transaction message.

Interviews were conducted with all subjects approximately 7 days after the transaction.

To determine whether the messages were effective in reducing dissonance, the extent of post-transaction doubt concerning the purchase decision was used as an indicator of the magnitude of dissonance the subjects were experiencing. The questions were constructed using a seven step rating scale similar to a semantic differential type of instrument.

The major guiding hypothesis of the study was that the dissonance scores of the two experimental groups would be lower, less dissonant, than the scores of the subjects in the control group. The findings of the study revealed that the subjects in the group which received the post-transaction letter were less dissonant than the control group, but the subjects in the group which received the telephone call had higher dissonance scores than did the control group.

The second guiding hypothesis was that the groups which received the post-transaction messages would have more favorable attitudes toward the store than the control group. The findings revealed a general tendency for the group which received the letter to have more favorable attitudes toward the store than the control group. Contrary to the hypothesis,

the group which received the telephone call had less favorable attitudes toward the store than the control group.

The third guiding hypothesis was that the groups which received the post-transaction reassurances would be more predisposed to purchase at the store than the control group. The findings of the study revealed that the subjects who received the letter tended to have higher expectations of future purchases than did the subjects in the control group. Contrary to hypothesis, the subjects in the telephone call group tended to have lower expectations of future purchases than did the control group.

The fourth guiding hypothesis concerned whether certain types of consumers would be more likely to experience dissonance than others. The findings showed no significant relationship between dissonance and any of the demographic variables investigated.

Since one type of post-transaction message, the telephone call, tended to increase dissonance, the study concludes that a general policy recommendation of providing post-transaction reassurances to recent purchasers may be ill-advised. Much more research is needed before definitive policy recommendations can be made using cognitive dissonance as a theoretical foundation.

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By

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A THESIS

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

DOCTOR OF PHILOSOPHY

Department of Marketing and Transportation

1968



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ACKNOWLEDGMENTS

A doctoral dissertation is never the work of only one individual. I would like to express my thanks to those who assisted me in the study.

Dr. Bernard J. LaLonde, Professor, Department of Marketing and Transportation, who, as chairman of my dissertation committee, provided valuable counsel throughout all phases of the research project and gave unselfishly of his time and energy whenever a crisis arose.

Dr. Stanley C. Hollander, Professor, Department of Marketing and Transportation, whose scholarly demeanor is an inspiration to all his students.

Dr. Hideya Kumata, Professor, Department of Communication, whose early suggestions considerably strengthened the research design.

The J. L. Hudson Company, Detroit, Michigan, whose financial assistance and cooperation made the study possible. Special thanks go to Howard Kushmar, Assistant Director of Research, for his technical assistance.

Finally, I should like to express my deep appreciation for the efforts of my wife, Suzanne, who not only contributed her typing expertise, but also assisted in the field work and was a consistent source of encouragement and understanding.

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CHAPTER I

INTRODUCTION

Purpose of Study

There have been few theories developed in the behavioral sciences which have sparked as much empirical research as Leon Festinger's theory of cognitive dissonance [23]. Although the research in the area is voluminous, very little of it is of direct applicability to marketing. The purpose of the research is to investigate some marketing implications derived from the theory of cognitive dissonance. Before discussing these implications, and the research methodology, it is appropriate to briefly review Festinger's theory.

Review of the Theory of Cognitive Dissonance

Definition 1: "[Cognitions are] the things a person knows about himself, about his behavior, and about his surroundings. These elements, then, are "knowledges". . . [23:9].

Definition 2: "Two [cognitions] are in a dissonant relation if, considering these two alone, the obverse of one element would follow from the other" [23:13].

Definition 3: "[Two cognitions are consonant] if . . . one does follow from the other" [23:15].

Definition 4: "[Two cognitions are irrelevant] where one cognitive element implies nothing at all concerning [the] other element" [23:11].

To illustrate the above definitions, assume that a housewife had been considering the merits of a General Electric washing machine versus a Whirlpool machine, and that she finally purchased a Whirlpool machine. The cognition that the General Electric "mini-basket" is a desirable feature to have on a washing machine would be dissonant with the cognition that the purchaser actually selected a Whirlpool washing machine. The cognition that the General Electric machine did not have a "self cleaning filter" is consonant with the cognition that she selected a Whirlpool. The cognition that the housewife likes sirloin steak would be irrelevant to the cognition that she selected a Whirlpool.

With the above definitions in mind, the core of the theory of cognitive dissonance may be stated:

1. There may exist dissonant or "nonfitting" relations among cognitive elements.
2. The existence of dissonance gives rise to pressures to reduce the dissonance and to avoid increases in dissonance.
3. Manifestations of the operation of these pressures include behavior changes, changes of cognition, and circumspect exposure to new information and new opinions [23:31].

The basic hypotheses which Festinger promotes are that: "the existence of dissonance, being psychologically uncomfortable,

will motivate the person to try to reduce dissonance and achieve consonance" [23:3]. "The magnitude of postdecision dissonance is an increasing function of the general importance of the decision and of the relative attractiveness of the unchosen alternatives" [23:264].

Given that the person is experiencing some magnitude of cognitive dissonance, there are three major methods by which the person may reduce this dissonance through time:

1. By changing one or more of the elements involved in dissonant relations.
2. By adding new cognitive elements that are consonant with already existing cognitions.
3. By decreasing the importance of the elements involved in the dissonant relations [23:264].

Implications of Dissonance Theory to Marketing

If the theory of cognitive dissonance is an accurate representation of reality, then a multitude of marketing implications can be derived:

1. Since most products are available in many alternative stores, a consumer will experience dissonance as a result of selecting a particular store. There will be some favorable cognitions with respect to the alternatives not selected.
2. If several brands are available for a product, then dissonance will be present if the unchosen brands have attributes which are superior to the chosen brand as perceived by the consumer.

3. A consumer experiencing cognitive dissonance as a result of store selection will seek, and be very receptive to, advertising by that store as a means of reducing cognitive dissonance.
4. A consumer experiencing cognitive dissonance as a result of the brand selection decision will seek, and be receptive to, the advertising of the manufacturer as a means of reducing dissonance. The receptivity of the consumer to manufacturer's messages will be greater post-decision than pre-decision since dissonance is a post-decision phenomenon [24:19,30].
5. The greater the importance of the purchase decision (e.g., the higher the price) the greater the dissonance--*ceteris paribus*.
6. The greater the number of stores (brands) for a particular purchase, the greater the dissonance.
7. If a consumer finds the level of dissonance intolerable, and discovers no method for reducing the dissonance to a tolerable level, he may negate the decision by returning the product purchased [31:75].
8. Since the consumer seeks means to reduce dissonance after the sale, it may be wise not to "oversell" him on the product. It is preferable for the product to exceed consumer expectations rather than merely satisfy them or fall short of them [50:62].

9. When post-decision dissonance is reduced, the initial decision becomes difficult to reverse. Thus, there is a likelihood of complete adoption, that is, repeat sales [50:63].
10. Post-decision dissonance is likely to be greatest after the purchase of recently established products from lesser known companies [50:64].

The above delineated marketing implications have not gone unnoticed by the authors of many modern marketing textbooks. The following quotation is typical of suggestions which are frequently made:

The existence of possible negative postpurchase feelings indicates the marketer might benefit from directing some of his communications to the recent buyer, rather than all of them to the potential buyer. The recent buyer may need assurance that he has made the right choice. If he is in a dissonant state, he will be looking for supportive evidence in the form of advertising and other communications. The appliance manufacturer may take the opportunity of building assurances into the information brochures that accompany his product. Manufacturers also can run advertisements showing recent purchasers showing satisfaction with their choice, and why. Unless the seller dispels the dissonance by some positive efforts, he may lose the customer unnecessarily [31:75].

Statement of the Problem

The theory of cognitive dissonance would lead one to conclude that the consumer would be very receptive to communications from the retailer and the manufacturer immediately after an "important" purchase. The research is designed to answer the following questions:

1. Do consumers experience cognitive dissonance after the purchase of a "major" appliance?
2. Are some types of consumers more likely than others to experience dissonance?
3. Are communications from retailers and/or manufacturers effective in assisting consumers in their efforts to reduce cognitive dissonance?
4. What is the relative effectiveness of various types of communications in assisting consumers in their efforts to reduce cognitive dissonance?
5. If the communications are effective in assisting consumers in their efforts to reduce cognitive dissonance, what benefits will accrue to the retailer for supplying these communications?

Hypotheses

The research hypotheses are reproduced in detail in Appendix B. The hypotheses are divided into five sections with the following guiding hypotheses as the underlying rationale:

A. The major guiding hypothesis of the research is that manufacturers and/or retailers can assist consumers in their efforts to reduce cognitive dissonance by providing post-transaction reassurances. Furthermore, not all types of post-transaction messages will be equally effective. The research hypotheses in section A posit the effectiveness of

the different messages in assisting consumers in their efforts to reduce cognitive dissonance.

B. A second guiding hypothesis is that one of the benefits which will accrue to the retailer for providing dissonance reducing information is that the groups which receive assistance will then view the store more favorably than the groups which do not receive assistance. The research hypotheses in section B posit the differences in the attitudinal dimensions which comprise the store image of the three groups.

C. A third guiding hypothesis is that retailers will benefit from providing dissonance reducing information because the assisted groups will be more predisposed to purchase at that store than the group which does not receive assistance. Section C contains hypotheses positing differences in predisposition to buy among the three groups.

D. Past research has indicated that people who expend more effort shopping will experience less cognitive dissonance [13]. Using this as a guiding hypothesis, section D posits the relationship between shopping effort and perceived dissonance for each group.

E. Prior research has indicated that certain personality types are more likely to experience cognitive dissonance than others [8:14-15]. However, there has been no research which would suggest that the level of cognitive dissonance should vary with any of the six demographic

characteristics of age, education, family income, social class, stage in the family life cycle, and race. The research hypotheses in section E postulate the relationships between the demographic variables and perceived dissonance for each group.

Methodology

A department store was asked to cooperate in the research project by supplying lists of the names and addresses of customers who recently purchased refrigerators. Except for persons without established credit, the names were available on the day following the transaction. Names of those customers without established credit were received as soon as credit was approved. The customers were divided on a random basis into three groups:

1. Group 1 was a control group and received no post-transaction message from the retailer.
2. Group 2 was sent a letter on department store stationery, and signed by the appliance department manager, expressing his appreciation for the customer's purchase and reassuring her that her selection of that particular brand and model was a "good" one. (See Appendix E for a copy of the letter.)
3. Group 3 received a telephone call from the researcher, who, with permission, represented himself as a department store employee. The oral message used

similar copy to that which group 2 received (see Appendix F).

Interviews were conducted by professional interviewers one to three days after the consumer received the post-transaction message, the five part questionnaire was administered (see Appendix C). Part I of the questionnaire consisted of six questions on a semantic differential scale, the mean of which was used as an indicator of perceived dissonance.

Part II of the questionnaire consisted of semantic differential questions to measure the five attitudinal dimensions postulated to make up the department store image:

1. Merchandise suitability
2. Store services
3. Store congeniality
4. Sales personnel
5. Locational convenience.

The above attitudinal dimensions were drawn in part from a study of aggregate department store images by Robert G. Wyckham [48:84].

One of the benefits hypothesized to accrue to retailers when they assist consumers in their attempts to reduce dissonance is that the consumers who receive assistance will have more favorable attitudes toward the store than the consumers who do not receive assistance, the control group.

Part III of the questionnaire was to determine how the consumer perceived his future shopping behavior. It is hypothesized that the groups which receive assistance from the retailer will be more predisposed to purchase at the retailer's store than those who do not receive assistance.

Part IV was to determine whether perceived dissonance decreased as shopping effort increased, as has been reported in the literature [13].

Part V contained demographic data of seven types:

1. Age
2. Education
3. Family income
4. Race
5. Brand experience
6. Stage in family life cycle
7. Social class.

The above data were used to determine if there were any demographic correlates with the level of perceived dissonance, i.e., were certain types of people more likely to experience dissonance than others?

A computer program was then used to test the various specific research hypotheses using the Mann-Whitney U test statistic and the Kruskal-Wallis one-way analysis of variance (see Appendix G).

Limitations of the Study

Caution should be exercised in generalizing the results of the study because of the following reasons:

1. Since the study was limited to only one type of purchase (refrigerators), generalizing to other types of purchases may not be possible.
2. Since the study was conducted in only one metropolitan area (Detroit), generalizing to other geographic areas may not be possible.
3. The study used an "after only" measurement; hence, the determination of causal relationships between the independent variables (the messages) and the dependent variables (perceived dissonance, etc.) is basically inferential rather than experimental.
4. There is no validated technique for measuring dissonance directly.

Contributions of the Study to Marketing Theory

It is anticipated that the research will be useful for those who are attempting to develop a meaningful theory of consumer behavior by placing in proper perspective the role of cognitive dissonance theory as a component of a general theory of consumer behavior. Possible specific contributions to marketing theory are as follows:

1. Cognitive dissonance theory postulates that a person will experience dissonance after a decision when the

decision is "important" and where the unchosen alternatives have at least some characteristics which are superior to the chosen alternative [23:262]. It would appear that many consumer purchase decisions could be dissonance producing, and, hence, cognitive dissonance theory should be an integral part of any general theory of consumer behavior. The research provides information on whether at least one particular type of purchase decision is dissonance producing.

2. If consumers do experience dissonance after a major purchase decision, it is important to know whether some types of consumers are more likely than others to experience dissonance. Some evidence is available in the literature that certain personality types are more likely than others to experience cognitive dissonance. The research provides information as to whether the level of dissonance varies with any of the six demographic variables of age, education, family income, race, life cycle, and social class.
3. Cognitive dissonance theory postulates that certain types of pre-decision activities will lead to a lessening of post-decision dissonance. In particular it is held that the physical act of shopping is one such activity [13]. The research provides

information as to the relationship between shopping effort and dissonance.

4. Cognitive dissonance theory posits the existence of several different methods by which people can reduce dissonance [23:264]. Unfortunately, the theory does not predict which particular method will be used under a particular set of circumstances. The research provides information as to whether the consumer can be induced to use a mode of dissonance reduction which is favorable to the manufacturer and/or retailer.

Contributions of the Study to Marketing Practice

To simply theorize that consumers experience cognitive dissonance is of little significance to the marketing practitioner unless he has guidance as to what he can do about dissonance, what he should do about dissonance, and what benefits will accrue to him if he does do something about dissonance. In short, what are the action-oriented implications of dissonance? Specific potential contributions are as follows:

1. The study provides information as to whether certain types of post-transaction activities, i.e., the specific communications, will be effective in reducing dissonance. Furthermore, the study indicates the

relative effectiveness of alternative actions, i.e., the different messages, in reducing dissonance.

2. A benefit posited to accrue to retailers and/or manufacturers for providing their customers with dissonance reducing information is that the recipients of the information will be more predisposed to purchase from the retailer and/or manufacturer who provides the information. The study tests whether the groups who receive assistance are in fact more predisposed to purchase than those who do not receive assistance.
3. A second benefit which might accrue to manufacturers and/or retailers for providing dissonance reducing information is that the assisted customer will have a more favorable perception of the store's total offering, i.e., "store image," than the customers who do not receive assistance. The study provides information to determine if the above actually occurs.
4. It is possible that retailers and/or manufacturers might want to send post-transaction communications to only certain types of purchasers. The study provides information as to which types of customers would most benefit from dissonance reducing information.

Organization

The organization of the study will consist of five chapters:

1. Introduction
2. Conceptual Foundations: A Review of the Literature
3. Research Design
4. The Findings
5. Conclusions and Implications for Marketing.

Chapter I introduces the study by stating its purpose and briefly reviewing the theory of cognitive dissonance and its implications to marketing. The research hypotheses are presented along with the research design and the potential contributions to both marketing theory and marketing practice.

Chapter II first reviews the literature with respect to the various methods people employ to reduce dissonance. The effects of information on dissonance reduction are discussed as well as the literature on source credibility and cognitive dissonance. Since some of the research hypotheses concern attitude change, the literature on attitude change and dissonance is reviewed, along with the relationships between dissonance and several consumer characteristics.

Chapter II sets forth the research design of the study including the basic design, sample selection procedure, treatment procedure, and the research instrument.

Chapter IV presents the findings of the study by first discussing the general results and the population. The rest of the findings follow the organization of the research hypotheses as shown in Appendix C.

Chapter V briefly summarizes the purpose and research design and then presents a review of the major findings and conclusions. The chapter concludes with the implications of the study to marketing and suggests some directions for future research.

CHAPTER II

CONCEPTUAL FOUNDATIONS: A REVIEW OF THE LITERATURE

Introduction

Chapter II is an effort to establish the underlying theoretical structure for the study by reviewing the literature relating to the research hypotheses. The literature review will be divided into five sections:

1. Modes of dissonance reduction
2. Effects of information on dissonance reduction
3. Source credibility and dissonance reduction
4. Attitude change and dissonance reduction
5. Consumer characteristics and cognitive dissonance.

Modes of Dissonance Reduction

Given that the consumer may be experiencing some magnitude of cognitive dissonance after a purchase, Festinger hypothesizes three major methods by which the consumer may reduce this dissonance:

1. By changing one or more of the cognitive elements involved in the dissonant relations.
2. By adding new cognitive elements that are consonant with already existing cognitions.

3. By decreasing the importance of the elements involved in the dissonant relations [23:264].

Brehm and Cohen expand upon the above list by including the specific dependent variables measured in various experiments as indicators of modes of dissonance reduction [11:306-308].

1. Attitude change
 - a. Opinion change
 - b. Evaluation change
2. Selective exposure to information
3. Selective recall of information
4. Perceptual distortion
5. Behavioral change.

The thrust of the present study is to attempt to determine whether certain communications from the retailer or manufacturer would be effective in assisting consumers in their efforts to reduce dissonance after a major purchase. This implies that the retailer is attempting to induce the consumer to adopt a particular mode of dissonance reduction, i.e., to add new cognitive elements that are consonant with existing cognitions. It is, therefore, appropriate to review the literature with respect to the methods people employ to reduce dissonance.

Selective Exposure to Information as a Mode of Dissonance Reduction

One of the earliest studies concerning selective perception and dissonance was conducted by Ehrlich, Guttman, Schonbach and Mills in 1957 [18:98-102]. Ehrlich et al. used a survey design with a population consisting of people who had purchased a new automobile within the past two months and people who purchased a car at least a year earlier and who owned cars at least three years old.

Two basic kinds of data were obtained: which automobile ads were preferred, from a list of heretofore unseen ads, and the percentage of actual ads that the respondents had seen and read in recent magazines and newspapers.

Ehrlich et al. hypothesized that new car owners would be experiencing cognitive dissonance and would, therefore: seek out information supportive of their decision more than old car owners and, also, would avoid information non-supportive of their decision more than old car owners. Advertising preference data did not support either of the two hypotheses. Advertising readerships data weakly supported the first hypothesis and actually contradicted the second hypothesis, i.e., ads about cars that had not been considered at all were read less than ads about cars that had been considered but not bought.

Another study on selective exposure and cognitive dissonance was conducted by Mills, Aronson, and Robinson [34:250-253]. Unlike the Ehrlich et al. study, the Mills

et al. study used an experimental manipulation of dissonance. Students were given a choice between taking an essay examination or a multiple choice examination. Dissonance was manipulated by telling some students that the examination would count 5 percent [low importance-low dissonance] and others 70 percent [high importance-high dissonance].

The opportunity to adopt selective exposure was provided by requesting that the students rank order their preferences to read several articles which were either positive or negative to essay and multiple choice examinations. The investigators hypothesized that the high dissonance group would show a stronger preference for articles supporting their decision than the low dissonance group.

The results of the study did not yield evidence in support of the study. A replication of this study by Rosen also failed to show evidence of subjects using selective exposure as a mode of dissonance reduction [40:188-190].

Adams' study attempted to demonstrate that people who are exposed to counter-attitudinal information would experience dissonance and would, therefore, selectively expose themselves to pro-attitudinal information [1:74-78]. Mothers were asked to express their opinion as to whether a child's behavior is mostly inborn or mostly learned. The mothers were then exposed to a tape recorded talk by an "expert" with about half being exposed to a view opposing their own. The mothers were then given the opportunity to

expose themselves to one of two talks to be held at the university.

If dissonance and subsequently selective exposure were operative, then one would expect the high dissonance subjects to prefer consonant information more than low dissonance subjects. This hypothesis was not confirmed.

Brehm and Cohen stress the importance of commitment in using cognitive dissonance theory as a predictive theory [11:7-10]. Sears and Freedman used strength of commitment as an experimental variable in a study using a mock jury situation [41]. High commitment (high dissonance) was obtained by telling some subjects that their first decisions were irrevocable and were to be made public. Low commitment (low dissonance) was obtained by telling the subjects that their first decisions could later be changed and were to remain confidential.

Once again there was no difference in preferences between the two groups for supportive information as dissonance theory would have predicted, nor did the two groups differ in duration of exposure to subsequent supportive and non-supportive communication.

Aaron Lowin proposed that the reason many experimental studies failed to demonstrate selective exposure on the part of dissonant subjects was that at least two modes of dealing with the dissonant information might be in use [33]. Merging approach-avoidance concepts with dissonance theory,

he proposed that a subject might either avoid dissonant information or, alternatively, approach the dissonant information and attempt to refute it. The choice between approach or avoidance was proposed to depend, at least in part, on the ease of message refutation.

Six hypotheses were developed:

1. Strong consonant information is preferred to weak consonant.
2. Weak dissonant is preferred to strong dissonant.
3. Strong consonant is preferred to strong dissonant.
4. Weak dissonant is preferred to weak consonant.
5. Strong information desired by agreeers more than disagreeers.
6. Weak information desired by disagreeers more than agreeers.

All six of the hypotheses were strongly supported by an experiment on self exposure to political propaganda executed during the Johnson-Goldwater campaign of 1964. Unfortunately, there was no experimental manipulation of dissonance and, hence, the study does not provide strong support for the link between dissonance and selective exposure.

Harold H. Kassarian and Joel B. Cohen used a survey design to investigate the public's reaction to the surgeon general's report on smoking and health [30]. They came to the following conclusion with respect to the confirmed smoker:

With rare exceptions the confirmed smoker appears to be behaving consistently with his belief system by continuing to smoke. He has justified its rationality either by disassociating his responsibility over the decision; by denying, distorting, misperceiving, or minimizing the degree of health hazard involved; and/or by selectively drawing out new cognitions and new information that will reduce the inconsistency of his own behavior and achieve consonance in his own cognitive world [30:63].

J. F. Engel attempted to replicate in a survey design [19] some aspects of the earlier study by Ehrlich et al. [18]. Two groups of subjects, one who had recently purchased new Chevrolets and a second who had not, were briefly exposed to recent automobile advertisements. If subjects responded that they had seen the advertisement, they were asked to "play back" as much of it as they could.

The investigators concluded that recent Chevrolet purchasers had not selectively exposed themselves to potentially dissonance reducing advertisements with the exception of one advertisement not intentionally included in the study which listed prices of new Chevrolets.

Selective Recall of Information as a Mode of Dissonance Reduction

Brehm designed an experiment to attempt to determine whether dissonance would result from a person's receiving information discrepant with his own, recently given, explicitly stated views [11:94]. Subjects were given the opportunity to selectively recall information so as to reduce dissonance.

The experiment was conducted by asking students to fill out a personality rating sheet on himself, a close friend, and a movie star. The sheet consisted of 40 personality traits (lazy, intelligent, etc.) with the following scale responses: "Not at all," "Moderately," "Very," and "Extremely." The subjects were then shown rating sheets on him purportedly made by his friend. Actually, 30 of the 40 ratings were identical with his own ratings of himself and 10 were discrepant by 2 points.

Subjects were then asked to attempt to memorize the fictitious rating sheet and to recall it immediately and then recall it after one week.

Since the discrepant information was expected to be dissonant producing, it was hypothesized that a smaller percentage of the discrepant information would be recalled. The results confirmed this hypothesis at the 5 percent significance level.

One part of a study by J. F. Engel also investigated selective recall as a mode of dissonance reduction [19]. Two groups of subjects, one who had recently purchased a Chevrolet and one who had not recently purchased a Chevrolet were exposed to lists of statements about Chevrolets and Plymouths. About 15 minutes after exposure the subjects were asked to recall as many of the statements as they could.

The results of this did not show selective recall to be operative. Chevrolet owners recalled about as many dissonant and consonant statements as did non-Chevrolet owners.

Perceptual Distortion as a Mode of Dissonance Reduction

Bramel designed a study to determine whether the defense mechanism of projection would be used as a mode of dissonance reduction [9:121-129]. Subjects were given fake "personality" tests and then told on a random basis that the results were either "favorable" or "unfavorable." The subjects were then hooked up to a fake galvanic skin response apparatus and were told that a dial in front of them would register any homosexual tendencies as they were exposed to pictures of men in various stages of undress. Actually the dial was manipulated by the investigator to get high responses to pictures of men with few clothes on. The subjects were asked to estimate the dial position for each picture for another person whom they had just met.

Dissonance theory predicted that the subjects who received a "favorable" personality report would be more dissonant than those who received an "unfavorable" personality report. Furthermore, the higher dissonance subjects should "project" higher homosexual scores to other people. The results of the experiment confirmed this hypothesis, i.e., projection was used as a mode of dissonance reduction.

Yaryan and Festinger designed an experiment to determine if dissonance might produce a perceptual distortion of the probability of a future event occurring [49]. Subjects were given the same information concerning the possibility of having to take an examination over some difficult symbolic definitions. One group was told to memorize the definitions (high effort-high dissonance), while the second group was told to give them a cursory examination (low-effort-low dissonance).

The hypothesis was that the high dissonance group would have a stronger belief that they would actually have to take the examination than would the low dissonance group. The results of the experiment supported this hypothesis [49: 603-606].

Behavioral Change as a Mode of Dissonance Reduction

One of the primary objectives for a manufacturer or retailer for providing dissonance reducing messages would be to elicit a behavioral change, i.e., to obtain a higher percentage of the consumer's future purchases. It is appropriate, therefore, to review the literature relating dissonance reduction and behavioral changes.

Adams and Rosenbaum used dissonance theory to predict what would happen to the productivity of workers who were made to believe they were "overcompensated" relative to

their "fair worth" [2:161-164]. Nine subjects were assigned to each of four categories:

1. Subjects who were hired and informed that they were not qualified to earn their hourly wage.
2. Subjects who were hired and informed that they were qualified to earn their hourly wage.
3. Subjects who were hired and informed that they were not qualified to earn their piece rate.
4. Subjects who were hired and informed that they were qualified to earn their piece rate.

The investigators hypothesized that workers in group I would experience dissonance because of the disparity between their "pay" and their "worth" and that this group would then increase their productivity to reduce dissonance. The second hypothesis was that workers in group 3 would similarly be dissonant but that they would decrease their productivity so as to decrease total earnings in order to reduce dissonance. The results of the experiment supported both hypotheses.

Aronson and Carlsmith meshed a theory of expectations with cognitive dissonance theory [11:178-180]. They theorized that dissonance is aroused when events do not coincide with expectations and that an expected event is preferred to other events. A non-obvious prediction of this theory is that an undesirable, expected event is preferred over a desirable, unexpected event.

The investigators gave a set of 100 cards to the subjects one card at a time. There were three photographs on each card and the subjects were asked to attempt to identify who among the three was a schizophrenic. One group was told that they were going very poorly as they progressed, thus causing low expectations of future performance, and one group was told they were doing very well, thus causing high expectations of future performance. After the subjects had looked at their last 20 cards, the "good" subjects were told that they had done poorly on the last 20 and the "poor" subjects were told that they had done much better. Both groups were given an opportunity to change their selections on any of the last 20 cards. The number judgments changed on the repeated trial was taken as an attempt to reduce dissonance resulting from not fulfilling expectancies.

The data support the hypothesis that the group whose performance exceeded their expectations did experience dissonance, and did change their answers so as to bring together performance and expectations.

Effects of Information on Dissonance Reduction

The present research study is concerned in the implications of providing certain information to the consumer post-transaction. It is hypothesized that this information will be effective in assisting the consumer in his efforts to reduce dissonance. It is, therefore, appropriate

to review the literature with respect to the relationship between information and dissonance reduction. Since selective exposure to information after the decision is reached has already been reviewed, this section will deal only with predecision information.

Jon R. Davidson designed an experiment to examine the relationship between cognitive familiarity and subsequent dissonance reduction [24:45-59]. Subjects were asked to listen in on a faked interview between a professor and an imaginary student named "Bill." Afterwards one group was asked to do a personality rating sheet about "Bill." This forced the subjects to think about "Bill" and thus established high cognitive familiarity. Another group filled out the same rating sheet, but on themselves instead of "Bill." This established low cognitive familiarity with "Bill." Both groups were then asked to indicate how well they liked "Bill" on another rating sheet. Since "Bill" had been made to appear rather likable, most of the scores were rather high.

All subjects were then induced to read a set of negative statements about "Bill" which, supposedly, "Bill" could hear. These counter-attitudinal statements were hypothesized to create dissonance. A post-measure of how likable "Bill" was was then taken.

The difference between the pre-measure and post-measure was taken as an indicator of dissonance reduction.

To reduce dissonance in this case, subjects would lower their evaluation of "Bill" to bring their opinions more in line with their negative statements. The authors conclude:

Clearly, time spent thinking about details of the other person before the decision (before they even knew there was going to be a decision) does actually facilitate post decision dissonance reduction and does, indeed, seem to be substitutable for time spent after the dissonance already exists [24:54].

Robert J. Holloway also dealt with the issue of pre-decision information in a study concerning automobile battery purchases [29:39-43]. Subjects were asked to play the role of automobile battery purchasers and asked as a pre-measure to complete a rating form on each of 12 different brands of batteries. Each subject was placed in the situation of having to choose from among three batteries, none of which he had rated either very high or very low. At the time of decision, half the subjects were given additional information about the batteries and half were not. After the decision a post-measure of the rating of the batteries was taken.

One of the investigator's hypotheses was:

Individuals to whom additional positive information is provided to aid their decision-making will experience less dissonance than those to whom no additional positive information is provided. In other words, additional positive information concerning a purchased item should make a buyer more confident and less dissonant

than when he was not given that additional information [29:41].

Without showing the supportive data, the author concludes:

In the first significant interaction, when high inducement interacted with the two levels of information [i.e., information and no information], a significantly different amount of dissonance was measured. Thus, hypothesis 3 was in part confirmed, as the amount of positive information did affect dissonance somewhat.

The two studies just reviewed would seem to indicate that greater familiarity with the product, i.e., greater pre-decision information, would help the consumer in his efforts to reduce dissonance. The above does not seem to be entirely consistent with the following policy recommendation from a modern marketing textbook:

Since the consumer seeks means to reduce dissonance after the sale, it may be wise not to "oversell" him on the product. It is preferable for the product to exceed consumer expectations rather than merely satisfy them or fall short of them [50:62].

Source Credibility and Dissonance Reduction

The present study uses what may be assumed to be a low source credibility agent to provide the post-transaction messages to the consumers, i.e., the manager of the appliance department of the retail store at which the appliance was purchased. It is important, therefore, to examine the relationship between source credibility and cognitive dissonance.

F. A. Powell investigated the attitude change effects of low and high source credibility agents on six experimental groups composed of Michigan State University upperclassmen [37]. The experimental groups were exposed to a persuasive message under conditions of (a) high or low source credibility, (b) voluntary compliance or noncompliance, (c) high or low discrepancy in the attitude positions of source and receiver. Using a series of Likert-type attitude items, attitude change was used as an indicator of dissonance reduction.

One of the hypotheses was that greater attitude change would accrue from behavioral compliance with the position of a low credibility source than from compliance with that of a high credibility source. The hypothesis was not confirmed by the results of the experiment. The author attributed the inconclusive results on a failure to achieve the intended differences in source credibility, i.e., subjects did not perceive the two agents as being different in source credibility.

Attitude Change and Cognitive Dissonance

One of the dependent variables in the present study is "store image" which is hypothesized to consist of the following attitudinal dimensions:

1. Merchandise Suitability
2. Store Services

3. Store Congeniality
4. Sales Personnel
5. Locational Convenience

It is hypothesized that the groups which receive post-transaction reassurances will have more favorable attitudes toward the store than the group which does not receive these reassurances. For this reason it is appropriate to review the literature with respect to attitude change and cognitive dissonance.

E. E. Smith conducted an experiment using Army Reservists who, under a guise of a study of survival situations, were encouraged to eat grasshoppers after filling out a questionnaire on their liking for grasshoppers as a food [44:626-639]. Half the subjects were encouraged to eat grasshoppers by the experimenter in a relaxed, friendly manner, i.e., positive cognitions. The other half were ordered to eat the grasshoppers and the experimenter was very gruff, i.e., negative cognitions. After eating the grasshoppers, the subjects once again filled out a questionnaire on their liking for grasshoppers.

The research hypothesis was that the group exposed to the negative cognitions would find their behavior to be more discrepant with their attitude and, hence, would modify attitude to conform with behavior. The results of the experiment supported the hypothesis.

The previous experiment illustrates one of the ambiguities of using dissonance theory to predict attitude change. Interpreting the experiment differently, one could predict just the opposite results. One could characterize the situation as being truly a "forced compliance" situation and since the "negative cognitions" group was actually ordered to eat grasshoppers, they had no choice, one could hypothesize that they should experience less, not more dissonance than the group which received positive cognitions.

P. R. Stephenson hypothesized that the purchase of a major item, an automobile, would be inconsistent with an unfavorable attitude toward future economic conditions [46]. The investigator used a "before-after with control" design with economic attitude as the dependent variable as measured by the questionnaire of the University of Michigan Survey Research Center.

The results of the study did not confirm the hypothesis that subjects would change their economic attitude in a favorable direction after the purchase of an automobile.

Cohen used a "forced compliance" design to determine whether dissonance could be used to change students attitudes toward "police brutality" [11:74-78]. Soon after a student "riot" at Yale students were induced to write favorable essays on the conduct of the police during the riot by paying them sums of money ranging from \$0.50 to \$10.00. The mean difference on an attitude scale between the pre-measure

and the post-measure was used as an indicator of dissonance reduction.

The hypothesis was that as the reward for the attitude discrepant essay increased, dissonance would decrease and, therefore, attitude change would decrease. The results of the study confirmed this hypothesis.

Another "forced compliance" experiment was conducted by Rabbie, Brehm and Cohen. College students who were known to favor intercollegiate athletics were asked to write essays in favor of eliminating intercollegiate athletics. One group of subjects were given minimal rewards for writing the attitude-discrepant essay, whereas others were given much greater rewards.

The hypothesis was that those subjects who received a minimal reward should experience more dissonance and, hence, should change their attitude toward eliminating intercollegiate athletics. The results supported this hypothesis.

L. A. LoSciato examined the influences of product preferences upon dissonance reduction [32]. Subjects were asked to rate phonograph albums on a 10 point scale on a criterion of desirability. Subjects were then randomly assigned to three groups:

1. Group I were told that they could have either their third or fourth choice [high dissonance].
2. Group II were told that they could have either their third or eighth choice [low dissonance].

3. Group III were told that they were to get their third choice [control].

Group I [high dissonance] was hypothesized to attempt to reduce dissonance by revising upward their rating of the third ranked albums and downward their rating of the fourth ranked album. Chi-square analyses indicated that both changes were statistically significant, whereas an analysis of variance indicated that only the downward change of the unchosen alternative was significant.

Dissonance theory would predict that a choice among two or more membership alternatives should product dissonance and that the subsequent tension should force a re-evaluation of the selected group to a higher level. Richard J. Dieker attempted to test this derivation [17].

The investigator manipulated the freedom of choice of belonging to an attractive and a dull discussion group. It was hypothesized that the more attractive the non-chosen group, the more dissonance, and, hence, a re-evaluation of the chosen group would occur. The results of the study did not support the hypothesis.

In an unpublished dissertation J. H. Fett examined the role of volition in attitude change resulting from hearing an attacking speech. It was an attempt to remove some of the "coercion" that has accompanied many "free choice" experiments [25].

Subjects were pre-measured on 8 contemporary topics of concern and were asked to indicate their preference for hearing certain speeches on these topics. Subjects were then divided into two groups:

1. Group I (the "free choice") were told: "Here is [a type of a] speech you indicated a strong preference to hear."
2. Group II (the "coercion" group) were told: "Because so many of you want to hear the same speech, and we only have a few tapes, you will have to listen to a speech you indicated you would just as soon not hear."

Although subjects in the free choice situation changed attitudes more than subjects in the coercion condition, the difference was not statistically significant.

An experiment by Raven and Fishein dealt with changes in attitude toward extrasensory perception (ESP) [38:188-190].

Subjects were measured on their belief in ESP and subsequently asked if they were receiving any ESP images. Upon denial of the reception of images some of the subjects were punished by an electric shock and some were not.

Dissonance was hypothesized to occur because of the incongruity between admitting to not receiving an image and acceptance of the shock. Subjects could then reduce dissonance by increasing their disbelief in ESP. The results of the study supported the hypothesis.

A study by Brock used as the dependent variable non-Catholic students' attitudes toward Catholicism [12:264-271]. Students were given either a high freedom of choice or a low freedom of choice as to whether to write an essay on: "Why I would like to become a Catholic."

The results confirmed the hypothesis that attitude change toward Catholicism increased as freedom of choice to write the essay increased.

Allyn and Festinger tested the derivation from dissonance theory that pre-exposure knowledge that a communicator will oppose one's own position will result in reduction of dissonance by avoidance and defensiveness rather than by opinion change [3:35-40].

Young subjects were exposed to a lecture advocating that the minimum age for driving be raised. A pre-test showed this to be an attitude discrepant communication. Half the subjects were forewarned of the speaker's bias; the other half were told that the purpose was to study the personality of the speaker.

The results of the study confirmed the hypothesis that the group not forewarned of the speaker's bias would exhibit more attitude change than the group that was forewarned.

A recent experiment by J. Beijk examined the reduction of subjective feelings of fatigue due to dissonance [7:45-54]. Subjects were either given low payment (high

dissonance) or high payment (low dissonance) for participating in the experiment. Subjects were fatigued by exercising on a bicycle ergometer and then asked their subjective feelings' about how tired they felt.

The low payment group (high dissonance) was hypothesized to attempt to reduce dissonance by decreasing their feelings of subjective fatigue. The hypothesis was rejected.

Consumer Characteristics and Cognitive Dissonance

Of significant importance to marketing is whether certain types of consumers are more likely to experience dissonance than others. This information is necessary if dissonance theory is to be used as a vehicle for market segmentation. The present study contains hypotheses with regard to demographic variables, social class variables, shopping effort and their relationships with cognitive dissonance. The literature with respect to most of these variables has been modest, but there has been considerable speculation and experimentation on effort and dissonance.

Aronson tested the derivation from dissonance theory that the degree of effort expended by a person in attempting to obtain a reward has an effect on the relative attractiveness of stimuli associated with rewarded versus unrewarded trials [4:375-380].

Subjects were required to fish for containers of different colors, some of which had money in them (the

reward). For some of the subjects the task was made very simple (low effort) and for others very difficult (high effort). Subjects were asked to rate the relative attractiveness of the two colors before and after the experiment.

The hypothesis was that the high effort group should experience more dissonance which should partially reverse the effect of the reward and bring the relative attractiveness of the two colors chosen together. The results showed that the low effort group increased whereas, the high effort group showed no change in the relative attractiveness of the two colors.

A study by Zimbardo also examined the relationship between effort and dissonance [11:30-31]. Subjects who were in favor of the adoption of a numerical grading system at New York University were asked to read a counter-attitudinal report on numerical grading systems. Effort was manipulated by having the subjects read the report aloud under differing conditions of delayed auditory feedback. High effort subjects had a feedback of .3 seconds delay while low effort subjects had a .01 seconds delay.

The hypothesis was that high effort subjects would experience more dissonance than low effort subjects and would reduce this dissonance by changing their attitude in a more negative direction. The results of the study supported the hypothesis.

An unpublished Ph.D. dissertation by Richard Cardozo also dealt with consumer effort in addition to consumer product expectations [13].

Some of the subjects were asked to simulate a shopping experience by going through a catalogue consisting of descriptions of various ball-point pens and to write down one feature which impressed them for half the items shown (low effort). The task consumed about 15 minutes. Other subjects were asked to go through a similar catalogue and record five different features for each of the 31 items (high effort). The task consumed about one hour. Each subject then received a modest ball-point pen as a reward.

One hypothesis was that the high effort group would experience considerable dissonance because the reward would not be commensurate with the effort expended. To reduce dissonance, the subjects would evaluate the pen more highly than those subjects who expended little effort. This hypothesis was confirmed.

Gerald D. Bell explored the relationships among a consumer's confidence, ease of persuasibility, and cognitive dissonance [8]. The investigator interviewed 234 persons who had recently purchased an automobile. A measure of the amount of dissonance the consumer was experiencing was obtained by asking questions which would reveal the respondent's attitudes and feelings about his purchase, i.e., how much doubt the consumer was experiencing. Generalized

self-confidence was measured using the items originated by Day and Hamblin [15:499-511]. Persuasibility was measured by first asking respondents in separate questions to what extent they were influenced by the salesman on price, payments, color, etc. and then combining the score on these same characteristics.

The findings showed no significant relationship between persuasibility and dissonance until the investigator controlled for self-confidence. For those who were high on self-confidence, if they were easily persuaded in purchasing their new car, they were high on dissonance. Conversely, those who were low on self-confidence and were easily persuaded had little dissonance. The author concludes that the automobile industry might well increase the amount of advertising directed toward the recent purchaser, especially those who were easily persuaded.

Lance Canon developed an experiment which also concerned self-confidence and dissonance, although in this case the amount of self-confidence was experimentally manipulated [24:83-95]. Subjects were assigned several problems to solve. As the subjects were solving the problems, half were told that their solutions were correct and that most of their colleagues' answers were not correct (thus building the subject's self-confidence). The other half were told that they had given incorrect solutions, but the majority of

their colleagues' answers were correct (thus building low self-confidence).

At the end of the last problem, half the subjects were told that they would subsequently be forced to rebut a series of written probing questions as to why their answers were correct. The other half were told that they simply had to write a short essay supporting their positions. Each subject was then given the opportunity to rate his preference for reading a list of articles, some of which were dissonant with the subject's position and some of which were consonant. It was thought that the dissonant articles would be more useful to the group which had to rebut probing questions than to the group which simply had to write an essay. There were, then, four groups:

1. High confidence-highly useful
2. High confidence-less useful
3. Low confidence-highly useful
4. Low confidence-less useful.

The two major hypotheses were:

1. The high confidence-highly useful group would prefer to read the dissonant articles so as to prepare arguments to rebut the probing questions.
2. The low confidence-less useful group would strongly prefer consonant articles.

The results of the experiment supported the above major hypotheses.

A consideration of some of the features of the open-closed minded position of Rokeach [39] suggested to Samuel Fillenbaum that there might be a relationship between dogmatism and a person's ability to tolerate dissonance [26:47-50].

The experimental design was essentially the same as that used in an earlier study by Aronson and Mills [5:177-181]. In that experiment persons who were forced to undergo an unpleasant initiation in order to gain a group liked the group more than people who were spared the initiation. Fillenbaum modified the experiment by first administering the Dogmatism scale (form E consisting of 40 items) to all subjects.

The hypothesis was that there would be a positive correlation between dogmatism and dissonance, i.e., the very dogmatic subjects would, therefore, show a higher liking for the group than the low dogmatic subjects. The results of the experiment supported this hypothesis.

Cognitive Dissonance Experimentation: A Commentary

The foregoing literature review is not purported to be an exhaustive review of cognitive dissonance experimentation. It is, however, designed to be a balanced presentation of the evidence from prior research concerning the specific hypotheses to be examined in the present study. Some of the

evidence supported the present research hypotheses, some of it did not, and much of it was inconclusive.

The ambiguity and inconclusiveness as well as the sheer volume of experimentation on cognitive dissonance has prompted several psychologists (notably S. E. Asch, and Natalia and Alphonse Chapanis [14]) to critically review the research on dissonance theory. The criticisms of Chapanis and Chapanis roughly fall into two classes [14]:

1. [Dissonance] experimental manipulations are usually so complex and the crucial variables so confounded that no valid conclusions can be drawn from the data.
2. A number of fundamental methodological inadequacies in the analysis of the results . . . vitiate the findings.

Chapanis and Chapanis point out that dissonance is an intervening variable whose existence is inferred from measuring observable dependent variables. To test dissonance theory it is necessary to create various degrees of dissonance by introducing various discrepant cognitions within the subject. The dissonance researchers rarely use dissonance theory to predict highly structured simple events, but, rather, to predict complex social events. In order to do this experimentally, they have constructed extremely complicated situations with elaborate instructions to the subject to generate dissonance. Under these situations, therefore,

how can one be certain that dissonance and dissonance alone was created?

After discussing five typical cases where the variables were confounded Chapanis and Chapanis make the following recommendations [14:11].

1. It is possible to design experiments so that [the variables] are not confounded. . . . We recommend first of all that the experimental manipulations be simplified.
2. Our second recommendation is that additional control groups be included in the design.
3. Our third recommendation is that a little more attention be given to discovering the possible cognitions that a S might have about the situation, particularly those which might be contrary to dissonance theory.

Chapanis and Chapanis review further the treatment of the data in dissonance experiments and point out three major flaws:

1. Rejection of cases. This was their most important criticism, not only because it was so basic a flaw, but also because supporters of dissonance theory do it so often. In a total of 7 experiments the percentage of subjects used and subsequently discarded ranged from 10% to 82%. It is difficult to assess the meaning of a statistical test on data when many of the subjects have been systematically discarded after data collection and analysis.
2. Inadequate design. Most of the experiments are some variant of a 2X2 factorial with unequal, nonproportional, and generally small N's in each cell. These restrictions make it impossible for the authors to carry out ordinary analyses of variance. Instead we find them using a hodgepodge of "t" tests and a statistic which they refer to as an "interaction t." . . . The principal difficulty is that in making such multiple comparisons [without an overall test of significance] the experimenter is allowing himself a number of opportunities to find an event (significance) which normally occurs infrequently [14:18].

3. Straining for significance. . . . Authors tend to present results as significant and as supporting the dissonance theory prediction when the probabilities are greater than the usually accepted value of .05. . . . It is extremely disconcerting to find these statistically nonsignificant trends quoted authoritatively in subsequent reports and later reviews as substantiating the theory, without any qualifying statements.

In conclusion, the author must agree that the more recent experimentation in dissonance theory is entirely consistent with the closing comment of Chapanis and Chapanis, ". . . All of the considerations detailed above lead us to concur with Asch's evaluation of the evidence for dissonance theory and return once more a verdict of not proven [14:21]."

CHAPTER III

RESEARCH DESIGN

Basic Design

The basic research design of the thesis may be classified as an "experimental design--after only, with control group" [28:111]. It is an experimental design because there was manipulation of one assumed causal variable, and there was a random assignment of subjects to experimental and control groups. It is "after only" because measurements were not taken prior to the "treatment." The design may be represented in symbols as:

	<u>Experimental Groups</u>		
	<u>1</u>	<u>2</u>	<u>3</u>
Sample Selection	R_1	R_2	R_3
Experimental Variable		X_2	X_3
After Measurement	O_1	O_2	O_3

The notation used above is as follows:

R indicates that individuals were selected at random to receive various treatments.

X represents the exposure of a particular group to a particular treatment.

O refers to the measurement taken.

Therefore, the second column of the above table would be read, "Group 2, selected at random from the population, was exposed to treatment X_2 , and then measurement O_2 was taken." The control group (R_1) received no treatment.

Although it was not feasible to obtain a specific pre-treatment measure, use is made of a prior study which used a similar measurement tool to determine how different socio-economic groups perceived department store "images." This is the closest thing to a pre-test which is practicable [48].

The lack of a specific pre-test may not be as unfortunate as some believe:

The pre-test is a concept deeply imbedded in the thinking of research workers but it is not actually essential to true experimental designs. Almost all the agricultural experiments are run without pre-tests. In the social sciences, however, it seems difficult to give up the notion that the experiment and control groups might have been unequal before differential experimental treatment and rely upon randomization to reassure us that there will be a lack of initial biases between groups. Perhaps this belief comes from the fact that we have not run many experiments in the social sciences and marketing [6:35].

Sample Selection Procedure

A major department store in the Detroit metropolitan area, The J. L. Hudson Co., was asked to participate in the study. After consultation with the department store, it was decided to use recent purchasers of refrigerators as subjects for the following reasons:

1. Refrigerators are one of the most expensive items that department stores sell. Therefore, if price is a manifestation of "importance," then a refrigerator purchase decision would be an "important" decision.
2. The department store carried several "brand name" lines of refrigerators. Therefore, not only will the customer have to decide in which store to make the purchase, but also, which brand in which store. This increases the possibility of there occurring dissonant cognitions.
3. There are a bewildering array of special features on refrigerators, e.g., styles, colors, special compartments, revolving shelves, automatic defrosting, rollers, etc. The consumer in many cases will be forced to accept a unit which will not have every specific feature she desires, which will introduce dissonant cognitions.
4. In the opinion of appliance department personnel, refrigerator purchasers experienced more post-transaction anxiety than most purchasers of comparably priced department store items.

The department store made available a list of the names and addresses of all purchasers of refrigerators. The list was made available in general on the day following the transaction except for those who did not have credit established. The names of those who did not have credit

established were provided on the day immediately following credit approval.

From the above described lists the following types of customers were excluded from the population:

1. Corporate, professional, and other business customers were excluded.
2. Customers who lived outside Detroit or the immediate suburbs were excluded. (See Appendix F for a listing of the suburbs included in the sample.)
3. All employees of the department store were excluded.
4. Purchasers of "built in" appliances were excluded.

From this revised list, customers were placed into three groups on a random basis.

Treatment Procedure

Each of the three groups received a different post-transaction message (treatment).

Group I.--Group I was a control and received no post-transaction message.

Group II.--Group II received a personal letter with the following characteristics (see Appendix E for the actual message):

1. Department store letterhead stationery.
2. Signed by the appliance department manager. It was hypothesized that the above would increase the source credibility of the message.

3. A sentence expressing appreciation for the customer's purchase.
4. Several sentences reassuring the customer on the following points:
 - a. Her selection of the department store was "correct."
 - b. Her selection of the particular brand-model was "correct."
 - c. The department store "stands behind" the merchandise it sells.

Group III.--Group III received a telephone call from the researcher, who represented himself as an employee of the department store. The message that was used in the letter sent to group II was delivered orally to group III with a few modifications (see Appendix F).

Interview Procedure

All interviewing was conducted by a team of professional interviewers hired from the Market Opinion Research Co. of Detroit, Michigan. Personal interviews were used because it was believed that the length and complexity of the questionnaire required interviewer supervision. Also, a mailed questionnaire would have allowed the respondent too much time to deliberate on the questions, the returns would have been low, and control of the "time frame" would have been lost. Since dissonance was expected to decrease

through time, it was important to keep the time from decision to interview as constant as possible.

An attempt was made to interview each subject no sooner than three days after the subject's name was received. The three day delay was necessary so that the subjects in groups II and III could receive the messages.

Interviewers were instructed to telephone subjects in advance to arrange appointments preferably on the third day after the subject's name was received. If an appointment could not be obtained on that particular day, then the interviewer was instructed to attempt to obtain an appointment on either of the two immediately following days. If an appointment could not be made on any of the three above designated days, then the subject was dropped from the list.

Telephone calls were made at various times during the day so as to avoid a "working wife" bias.

In an attempt to increase the percentage completion rate, interviewers were permitted to cluster subjects and make some "cold" calls. However, any subjects who were not at home on the "cold" calls were telephoned for an appointment.

The above procedures were designed to attempt to minimize and hold constant the time from transaction to interview. Since cognitive dissonance is expected to decrease through time, it is desirable to hold the time from transaction to measurement as uniform as possible.

Interviewers were instructed to interview the female head of the household. If the household consisted of a single male, then he was interviewed.

The above procedure was continued until a total sample size of 150 completed interviews were obtained.

The Questionnaire

The basic measurement tool selected for the research was a modified form of semantic differential. The semantic differential is a tool which has been widely used to measure the meaning of words since its introduction by Osgood, Suci, and Tennenbaum [36].

Since its introduction the semantic differential has been used in at least the following primary applications:

1. Comparing corporate images, both among suppliers of particular product classes and against an "ideal" or standard image of what respondents think a company should be [48].
2. Comparing brands and services of competing suppliers.
3. Determining the attitudinal characteristics of purchasers of particular product classes or brands within a product group.
4. Analyzing the effectiveness of advertising and other promotional stimuli on attitude change [28:202].

The original semantic differential scale requires respondents to make repeated judgments of how they perceive a particular concept along a seven point interval-ordinal scale between two bipolar adjectives. For example:

Concept Z

Cold: _____:_____ : _____:_____ : _____:_____ : _____:Hot
 Very Quite Slightly Neutral Slightly Quite Very

An "X" in the appropriate interval then indicates both the direction and the intensity of the respondent's feeling toward the concept.

Several important modifications of the original semantic differential scale have been proposed to make it more useful in marketing research [35:28-29]. Mindak has suggested the use of descriptive nouns and phrases (in addition to bipolar adjectives) to make the tool more applicable to marketing problems.

The research employed phrases and sometimes complete sentences instead of simply bipolar adjectives.

The semantic differential has the following advantages:

1. It is a quick, efficient means of getting in readily quantifiable form for large samples not only the direction but intensity of opinions and attitudes toward a concept. . . .
2. It provides a comprehensive picture of the "image" or meaning of a product or personality.
3. It represents a standardized technique for getting at the multitude of factors which go to make up a brand or product "image."
4. It is easily repeatable and quite reliable.
5. It avoids stereotyped responses and allows for individual frames of reference.
6. It eliminates some of the problems of question phrasing . . . [35:28-29].

The Questionnaire, which is reproduced in Appendix C, is divided into five parts: I. Perceived Dissonance; II. Store Image; III. Predisposition to Purchase; IV. Shopping Effort Expended; V. Demographic and Other Data.

Part I: Perceived Dissonance

There are at least three methods by which one might attempt to measure the level of cognitive dissonance a subject might be experiencing. One possibility would be to attempt to measure certain physiological correlates of dissonance [15:392-399]. However, submitting the subject to a polygraph type of apparatus in his home was not a viable alternative for the research.

A second possibility would use cognitive dissonance theory proper as a guide. Dissonance theory states: "The total amount of dissonance that exists between two clusters of cognitive elements is a function of the weighted proportion of all relevant relations between the two clusters that are dissonant. The term "weighted proportion" is used because each relevant relation would be weighted according to the importance of the elements involved in that relation" [23:18].

It might, then, be possible to:

1. Determine all the relevant cognitions for each consumer.
2. Determine which ones are dissonant and which are consonant.
3. Determine the "relative importance" of each cognition.
4. Use the weighted average of the proportion of dissonant cognitions to consonant cognitions as an indicator of the level of cognitive dissonance.

Unfortunately, steps (1) and (3) pose problems with no ready resolution and, hence, this method was not adopted.

A third method of deriving an indicator of the level of cognitive dissonance, which was the method selected for use, is to ask the subject questions concerning how much doubt the respondent has about his decision. A similar method was used by Gerald Bell in a study of automobile purchasers [8:14].

Essentially, the subject could be experiencing dissonance because of cognitions which were inconsistent with two decisions:

1. The selection of the store (store dissonance).
2. The selection of the brand (brand dissonance).

Questions 1 and 3 under Part I are indicators of store selection dissonance, and questions 2 and 4 are indicators of brand dissonance. Questions 5 and 6 have elements of both store and brand dissonance.

The seven point scale was numbered for each question in such a manner that the higher the number, the higher the dissonance. The mean perceived dissonance was then defined as the mean score of the subject's answers to questions 1-6 in Part I.

Part II: Store Image

One of the hypotheses is that as a result of the post-transaction communication by the retailer, the subject

would view the store more favorably. In other words, those subjects who were assisted by the retailer in their efforts to reduce cognitive dissonance will have more favorable attitudes toward the retailer than those who were not assisted by the retailer.

Part II of the questionnaire breaks store image into five attitudinal dimensions:

1. Merchandise Suitability
2. Store Services
3. Store Congeniality
4. Sales Personnel
5. Locational Convenience.

Dimensions 1, 3, 4, and 5 are the attitudes used by Robert G. Wyckham in his study of aggregate department store images [48:84]. They were adapted from a previous article by George Fisk [27:5]. The dimension of Store Services was added for purposed of the present research, and the original questionnaire utilized by Wyckham to measure the attitudes was modified to better suit the needs of the study.

For each question under the five attitudinal dimensions a "1" was a "most favorable" response as viewed by the store.

Part III. Predisposition to Buy

Part III contains a question to attempt to determine how the customer perceived his future shopping behavior and

to test the hypothesis that the groups which received post-transaction communications would be more predisposed to buy at that store than the control group.

Part IV. Shopping Effort

Part IV contains questions to attempt to determine whether cognitive dissonance decreased as shopping effort increased, as has been reported [13]. The following method was used to translate the answers to high, medium, and low shopping efforts:

<u>High Effort</u>	<u>Medium Effort</u>	<u>Low Effort</u>
(IV-1-b)+(IV-2-c)	(IV-1-a)+(IV-2-c)	(IV-1-a)+(IV-1-a)
(IV-1-c)+(IV-2-a)	(IV-1-b)+(IV-2-a)	(IV-1-a)+(IV-1-b)
(IV-1-c)+(IV-2-b)	(IV-1-b)+(IV-2-b)	
(IV-1-c)+(IV-2-c)		

The first line would read: "If the respondent checked "b" to question IV-1, and "c" to question IV-2, then he would be classed as high shopping effort, i.e., he visited two stores and compared three or more brands."

Questions 1, 7, and 8 concerning age, marital status, and presence of children were used to determine the stage of the family life cycle. The following stages were used:

1. Young, single
2. Young, married, no children
3. Young, married, with children
4. Older, married, with children
5. Older, married, no children
6. Older, single.

By "young" is meant that the respondent is under 40 years of age. A person over 40 years of age is classified as "older." By single is meant that the respondent is not married, widowed, divorced, or separated. By "children" is meant children living at home or away at school who are supported by the respondent.

Questions 9, 10, 11, 12, 13, 14, and 15 were used to estimate the social class of the respondent.

Part V: Demographic Data

Part V contains demographic data of seven types:

1. Age
2. Education
3. Family income
4. Race
5. Brand experience
6. State in the family life cycle
7. Social class

The data were used to determine if there were significant demographic correlates with high, medium, and low dissonance. Also, the brand experience data were used to determine whether people who have had extensive experience with a brand would have significantly lower perceived dissonance.

Data Collection and Analysis

Each questionnaire was scored by hand and the data transferred to computer punch cards for the following variables:

1. Mean perceived dissonance
2. Mean merchandise suitability
3. Mean store services
4. Mean congeniality
5. Mean sales personnel
6. Mean locational convenience
7. Predisposition to buy
8. Shopping effort category
9. Age category
10. Educational category
11. Income category
12. Race category
13. Brand experience category
14. Stage in the family life cycle
15. Social class.

A computer program was then employed to determine the Mann-Whitney U statistic and a Kruskal-Wallis one-way analysis of variance. The Mann-Whitney U statistic is a non-parametric test to determine the probability that two independent samples, which may be of unequal size, have come

from identical populations. The procedure for the calculation of the statistic is described in Appendix G.

The Kruskal-Wallis one-way analysis of variance by ranks is a test for determining whether "k" independent samples are from different populations. The procedure for determining the Kruskal-Wallis H is described in Appendix G.

CHAPTER IV

THE FINDINGS

Introduction

The findings of the experiment on the effectiveness of post-transaction communications in reducing cognitive dissonance are presented in Chapter IV.

The chapter begins with some of the general results of the interviewing, including the number of interviews attempted, the percentage of interviews completed, the length of time for the typical interview, and the average length of time from transaction to interview.

The second part of the chapter compares the attitudinal characteristics of the population under study with the attitudinal characteristics of the much larger sample of the general public obtained by R. G. Wyckham [48].

The rest of the findings in Chapter IV follow the organization of the research hypotheses (described in detail in Appendix B):

1. The effectiveness of post transaction communications in reducing cognitive dissonance.
2. Attitude change and dissonance reduction.

3. Predisposition to purchase and dissonance reduction
4. Consumer characteristics and cognitive dissonance

General Results

A total of 152 interviews were obtained between June 21, 1968 and July 16, 1968. Since the original sample consisted of 335 subjects, the completion rate was 45 percent. Of those who were not interviewed, 48 percent were "not at home." A large variety of other reasons accounted for the other 52 percent, including: "too busy," "don't want to be bothered," "illness in the family," and a general suspicion of all interviewers.

Two additional interviews were obtained but had to be discarded. In one case the subject had cancelled her order and had replaced it with a refrigerator from another department store. The responses were directed toward the other department store and, therefore, the subject was dropped. The second interview which was discarded was of an employee of the department store.

Interviewing time averaged about 35 minutes. Interviewers indicated that subjects seemed to understand the questions well and were very willing to talk about their purchases.

The average time from transaction to interview was as follows:

1. Control Group = 7.6 days
2. "Letter Group"¹ = 7.1 days
3. "Telephone Group" = 7.4 days.

The Population

As discussed in the research design chapter, the design of the study was an "after only-with control group." Since no pretest was possible, it is appropriate to investigate whether the attitudes toward the department store of the sample were similar to the attitudes of the general public as found in the much larger survey design of R. G. Wyckham [48]. Both studies used the same department store.

Table 1 shows the overall means of the three attitudes which the two studies had in common. The numbers represent the arithmetic average of the mean scores for each person for each attitude in each group. The "overall means" are presented for descriptive purposes only and no statistical tests will be done on them. All statistical tests will be conducted on the underlying data in accordance with the procedures as outlined in Appendix G.

Since the scales were constructed such that higher numbers reflect more unfavorable attitudes than lower numbers, Table 1 would indicate that the overall population had

¹Henceforth in the report, the group which received the letter message after the transaction will be referred to as the "letter group" and the group which received the post-transaction telephone call will be referred to as the "telephone group."

Table 1. Comparison of the overall means of the three attitudes in common between the present study and R. G. Wyckham's study [48]

Attitudes	R. G. Wyckham's Results	Results of Present Study		
		Control Group	Letter Group	Telephone Group
Overall Mean Merchandise Stability	2.47	2.03	2.00	2.26
Overall Mean Sales Personnel	2.75	2.14	1.90	2.35
Overall Mean Store Location	2.53	1.97	1.93	2.11

less favorable attitudes toward the department store than the present sample under study. The finding is reasonable, since one would expect that a department store's own customers would have more favorable attitudes toward the store than would a sample of the general population.

Table 2 uses the basic data to test the null hypothesis that the various groups come from the same population, i.e., does the sample under study have significantly more favorable attitudes toward the department store than a sample drawn from the general public? In each case the null hypothesis that the two samples came from the same population is rejected at a significance level substantially less than the .01 level. It would seem clear that, at least for the three attitudinal dimensions, the present sample is not representative of the general public in the Detroit metropolitan area.

The Effectiveness of the Post-Transaction Communications in Reducing Cognitive Dissonance

The major guiding hypothesis of the study was that post-transaction reassurances from a retailer to recent purchasers would be effective in assisting the consumer in reducing dissonance (see Appendix B for the specific research hypotheses). The hypothesis was that the mean perceived dissonance scores, operationally defined as the mean of the responses to questions A1 through A6 of Appendix C, for the group which received the telephone call would be lower, less

Table 2. Summary of Mann-Whitney and associated probabilities with the null hypotheses that the attitudes of the sample of the general public taken by R. G. Wyckham [48] are the same as the attitudes of the groups composing the present sample

Attitude	Less Favorable Group	More Favorable Group	U ^a	p ^b	Level of Significance
Merchandise Suitability	General Public	Control Group	14381	0.0000	.01
Merchandise Suitability	General Public	Letter Group	9339	0.0001	.01
Merchandise Suitability	General Public	Telephone Group	9339	0.0001	.01
Sales Personnel Sales	General Public	Control Group	15338	0.0001	.01
Sales Personnel Sales	General Public	Letter Group	9443	0.0002	.01
Sales Personnel Sales	General Public	Telephone Group	9443	0.0002	.01
Store Location	General Public	Control Group	14671	0.0000	.01
Store Location	General Public	Letter Group	10642	0.0040	.01
Store Location	General Public	Telephone Group	10642	0.0040	.01

^aValue of Mann-Whitney U with n₂ greater than 20.

^bProbabilities of true null hypotheses.

dissonant, than the scores of the group which received the letter, which would in turn be lower than the control group.

Table 3 shows the overall mean perceived dissonance for each group.

Table 3. Overall mean perceived dissonance by group

Group	N	Overall Mean Perceived Dissonance
Control Group	66	2.11
Letter Group	43	1.90
Telephone Group	43	2.31

Although no statistical analysis will be performed on the overall group means, the means do serve as useful descriptive statistics to demonstrate the trends of the data.

Contrary to expectations, the overall group means would indicate that the group which received reassurances via the telephone was experiencing greater dissonance than either the control group or the group which received the letter. However, the letter group did have a lower overall mean perceived dissonance score than did the control group, which is in accordance to expectations.

To test the overall significance of the trends, the underlying data were subjected to a Kruskal-Wallis one way

analysis of variance by ranks (see Appendix G for statistical procedure explanation). The results of the test are summarized in Table 4.

Table 4. Summary of Kruskal-Wallis H and associated probabilities with the null hypothesis that the perceived dissonance scores of the three groups came from the same population

Kruskal-Wallis H ^a	p ^b	Level of Significance
5.3513	.0689	NS

^aSee Appendix G for statistical procedures.

^bProbability of a true null hypothesis.

Since the test statistic does not quite meet the customary .05 level of significance, the above findings as to the relationships of the dissonance among groups must be taken to be tentative.

Further analysis of the basic perceived dissonance data was conducted by examining the relationship between each group and every other group, two at a time, using a Mann Whitney U test statistic (see Appendix G for statistical procedures). Table 5 summarizes the findings of the analysis.

Table 5 supports the results of the earlier descriptive statistics in that the dissonance of the telephone group was greater than the dissonance of the control group,

Table 5. Summary of Mann-Whitney U and associated probabilities with the null hypotheses that each pair of groups comes from the same population

More Dissonant Group	Less Dissonant Group	U ^a	p ^b	Level of Significance
Control Group	Letter Group	1236.5	0.1279	NS
Telephone Group	Control Group	1185.5	0.0733	NS
Telephone Group	Letter Group	663.5	0.0119	.05

^aValue of Mann-Whitney U with n_2 greater than 20.

^bProbability of a true null hypothesis.

which, in turn, was greater than the dissonance of the letter group. However, only the differences between the telephone group and the letter group reached the .05 level of significance.

Attitude Change and Dissonance Reduction

A second guiding hypothesis concerns one of the benefits posited to accrue to retailers for providing dissonance reducing information. It was hypothesized that the groups which received assistance in reducing dissonance would subsequently view the store more favorably than the group which did not receive assistance (see Appendix B for the specific research hypotheses).

Table 6 shows the overall group means for each of the attitudes operationally defined to comprise the "store image":

1. Overall mean merchandise suitability
2. Overall mean store services
3. Overall mean sales personnel
4. Overall mean store congeniality
5. Overall mean store location.

Table 6. Overall mean for each attitude for each group

Group	N	Overall Group Mean ^a
<u>Merchandise Suitability:</u>		
Control	66	2.03
Letter	43	2.00
Telephone	43	2.26
<u>Store Services:</u>		
Control	66	1.88
Letter	43	1.94
Telephone	43	2.19
<u>Sales Personnel:</u>		
Control	66	2.14
Letter	43	1.90
Telephone	43	2.35
<u>Store Congeniality:</u>		
Control	66	1.95
Letter	43	1.85
Telephone	43	2.40
<u>Store Location:</u>		
Control	66	1.97
Letter	43	1.93
Telephone	43	2.11

^aThe arithmetic average of the mean scores of all subjects for each attitude in each group.

The overall means serve only as descriptive statistics, with all tests of significance conducted on the underlying data.

In general the results paralleled the dissonance findings. The telephone group, contrary to expectations, had the most unfavorable position for each of the five attitudinal dimensions comprising "store image." The scales were constructed so that high numbers are more unfavorable than low numbers. The group which received the letter did react according to expectations and had the most favorable position for every attitude with the exception of store services. For the attitude of store services the tendency was for the control group to be slightly more favorable than the group which received the letter.

Table 7 is a summary of the Krushal-Wallis one way analysis of variance on the underlying data to determine whether the overall differences among the groups for each attitude were significant. Since the results show that only the differences among the groups for the attitude of store congeniality were significant at the .05 level, the above findings that the telephone group had the most unfavorable attitudes, and that the letter group had the most favorable attitudes, must be considered as tentative.

Table 7 also shows that the least significant of all differences was for the attitude of store location. Since store location is probably the most "objective" of all the

Table 7. Summary of Kruskal-Wallis H and associated probabilities with the null hypothesis that for each attitude the scores of the three groups came from the same population

Attitude	Kruskal-Wallis H ^a	p ^b	Level of Significance
Merchandise Suitability	2.7712	0.2502	NS
Store Services	5.3079	0.0704	NS
Sales Personnel	4.4020	0.1106	NS
Store Congeniality	8.6811	0.0130	.05
Store Location	0.9597	0.6189	NS

^aSee Appendix G for statistical procedures.

^bProbability of a true null hypothesis.

attitudes, it would, therefore, be expected to be the most resistant to change.

Further analysis of the data on attitudes was conducted by examining differences between groups, taken two at a time, using the Mann-Whitney U test statistic. Table 8 summarizes the results of the tests.

The data support the overall means in that the telephone group consistently had less favorable attitudes toward the store than the other two groups, and that the letter group generally had more favorable attitudes toward the store than either the control or telephone group. Only four of the fifteen possible tests are significant at the .05 level.

Table 8. Summary of Mann-Whitney U and associated probabilities with the null hypothesis that the differences in attitude scores between pairs of groups come from the same population

Less Favorable Group	More Favorable Group	U ^a	P ^b	Level of Significance
<u>Merchandise Suitability:</u>				
Control	Letter	1402.0	0.4579	NS
Telephone	Control	1184.5	0.0725	NS
Telephone	Letter	754.0	0.0700	NS
<u>Store Services:</u>				
Letter	Control	1291.5	0.2133	NS
Telephone	Control	1065.0	0.0138	.05
Telephone	Letter	745.0	0.0597	NS
<u>Sales Personnel</u>				
Control	Letter	1226.5	0.1153	NS
Telephone	Control	1232.5	0.1231	NS
Telephone	Letter	687.0	0.0197	.05
<u>Store Congeniality:</u>				
Control	Letter	1347.5	0.3279	NS
Telephone	Control	1016.0	0.0060	.01
Telephone	Letter	618.5	0.0040	.01
<u>Store Location:</u>				
Control	Letter	1376.0	0.3943	NS
Telephone	Control	1294.5	0.2192	NS
Telephone	Letter	819.0	0.1800	NS

^aValue of Mann-Whitney U with n_2 greater than 20.

^bProbability of a true null hypothesis.

Predisposition to Purchase
and Dissonance Reduction

A second benefit posited to accrue to the retailer for providing dissonance reducing information was that the consumers who received assistance would be more predisposed to purchase from the retailer than those who did not receive assistance (see Appendix B for the specific research hypotheses). Table 9 presents the mean predisposition to purchase for each group.

Table 9. Mean predisposition to purchase for each group

Group	N	Predisposition to Purchase ^a
Control Group	66	2.92
Letter Group	43	2.70
Telephone Group	43	3.30

^aThe arithmetic average of the scores of all subjects in each group.

Low scores are more favorable than high scores, i.e., the subjects indicated that they intended to do a higher percentage of their shopping at that store than they did in the past.

The descriptive statistics would indicate that in general the letter group had higher expectations of future purchasing than had the control group. Also, the control

group had higher expectations of future purchases than did the group which received the telephone call. The latter result is not consistent with the research hypothesis but is consistent with the findings of the dissonance section.

A Kruskal-Wallis one way analysis of variance by ranks was conducted on the underlying data and the results of the test for overall significance are summarized in Table 10. The results indicate that the overall differences among the three groups are not significant.

Table 10. Summary of Kruskal-Wallis H and associated probabilities with the null hypothesis that the predisposition to purchase scores of the three groups came from the same population

Kruskal-Wallis H ^a	p ^b	Level of Significance
3.9676	0.1375	NS

^aSee Appendix G for statistical procedures.

^bProbability of a true null hypothesis.

Mann-Whitney U statistics were then computed for the three groups taken two at a time. Table 11 summarizes the results of the tests.

The findings corroborate the overall means in that the telephone group did have the lowest expectations of future purchases, whereas the letter group had the highest.

Table 11. Summary of Mann-Whitney U and associated probabilities with the null hypothesis that the differences in predisposition to purchase between pairs of groups come from the same population

Less Favorable Group	More Favorable Group	U ^a	p ^b	Level of Significance
Control	Letter	1323.5	0.2624	NS
Telephone	Control	1197.5	0.0678	NS
Telephone	Letter	719.5	0.0268	.05

^aValue of Mann Whitney U with n_2 greater than 20.

^bProbability of a true null hypothesis.

However, only the differences between the telephone group and the letter group are significant.

Consumer Characteristics and Cognitive Dissonance

The final hypotheses of the study were concerned with whether certain types of consumers were more likely to experience dissonance than other types. Of particular interest was whether consumers who expended more effort in shopping for the appliance would subsequently experience less dissonance, as had been claimed [13].

The consumers in each of the three groups were classified in the following 14 categories:

1. Shopping effort expended
2. Number of stores visited while shopping
3. Number of brands considered while shopping

4. Education level of consumer
5. Race of consumer
6. Age of consumer
7. Family income of consumer
8. Brand of appliance purchased
9. Branch of store from which purchase was made
10. Consumer's previous experience with purchased brand
11. Stage in the family life cycle
12. Social class of consumer
13. Sex of consumer
14. The interviewer who administered the questionnaire.

A Kruskal-Wallis one way analysis of variance by ranks was conducted for each category for each group. The test statistic was computed for each group individually, instead of for all groups taken together, in an attempt to prevent confounding of the variables. The results are summarized in Table 12, which, because of its length, has been placed in Appendix A.

Without exception, Table 12 shows no significant differences among the dissonance scores of the subjects when they were classified by any of the categories investigated.

A Concluding Note

The findings of the experiment have been presented in Chapter IV and have followed the organization of the research hypotheses. Since a summary of the hypotheses and findings is presented in Chapter V, no such review is made here.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

The purpose of Chapter V is to present a summary of the study and the major conclusions.

The chapter begins with a brief summary of the purpose of the research and the research design. The next section reviews the research hypotheses and the findings. The next section contains the major conclusions and implications for marketing. The last section suggests some directions for future research.

Brief Summary of Purpose and Research Design

The purpose of the research was to investigate some of the action-oriented marketing implications of the theory of cognitive dissonance. The study has investigated whether certain post-transaction messages from a retailer to recent purchasers would be effective in assisting the consumer in reducing dissonance, and, if the messages were effective in reducing dissonance, what benefits accrued to the retailer for providing the messages.

An "after only-with control" design was used in the experiment to test the above marketing implications of cognitive dissonance theory.

A sample population consisting of purchasers of refrigerators from a major department store in the Detroit metropolitan area was randomly divided into a control and two experimental groups with a total $N = 152$. One experimental group received a letter from the department store giving the consumers post-transaction reassurances (see Appendix E for the message). The second experimental group received a telephone call from the department store expressing the same types of post-transaction reassurances as were contained in the letter (see Appendix F for the message).

Interviews were conducted with all subjects approximately 7 days after the transaction took place.

To determine whether the messages were effective in reducing dissonance, the extent of post-transaction doubt was used as an indicator of the magnitude of dissonance the groups were experiencing. To determine what benefits might accrue to the retailer for providing the dissonance reducing messages, the attitudes of the consumers toward the store, as well as the consumers' expectations of future shopping behavior, were measured.

Demographic data were obtained to determine whether certain types of people were more inclined to experience dissonance than others. Of particular concern was the

relationship between shopping effort and dissonance, since previous studies had shown an inverse relationship between dissonance and shopping effort.

Overall tests of significance were conducted using the Kruskal-Wallis one way analysis of variance. Pair comparisons were made using the Mann-Whitney U test statistic (see Appendix G for statistical procedures).

Review of Hypotheses and Findings

The following sections will review the findings of the study with respect to each guiding hypothesis.

Guiding Hypothesis No. 1: The Effectiveness of Post-Transaction Communications in Reducing Cognitive Dissonance

The major guiding hypothesis of the study was that post-transaction reassurances from a retailer would be effective in assisting customers in reducing cognitive dissonance. The study hypothesized that the dissonance scores of the group which received the telephone call would be lower than the group which received the letter, which would, in turn, be lower than the control group. (See Appendix B for the specific research hypotheses.)

Findings of the Study

There was a tendency for the dissonance scores of the subjects in the letter group to be lower than the dissonance scores of the control group, as hypothesized. Contrary

to the hypothesis, the dissonance scores of the telephone group were the highest of the three groups. Although the overall differences among the groups were not significant at the .05 level, the differences between the letter group and the telephone group were significant.

Guiding Hypothesis No. 2:
Attitude Change and
Dissonance Reduction

The second guiding hypothesis posited that the groups which received the post-transaction messages would, subsequently, have more favorable attitudes toward the store than the control group which received no post-transaction message.

Findings of the Study

There was a general tendency for the attitudes of the letter group to be more favorable than the control group. Contrary to the hypothesis, the attitudes of the telephone group were the most unfavorable of any of the three groups. Only the differences among the groups for the attitude of store congeniality were significant at the .05 level.

Guiding Hypothesis No. 3:
Predisposition to Purchase
and Dissonance Reduction

The third guiding hypothesis posited that the groups which received the post-transaction messages would be more predisposed to purchase from the store than the control group which received no post-transaction message.

Findings of the Study

The subjects who received the letter tended to have higher expectations of future purchases than did the subjects in the control group. Contrary to the hypothesis, the subjects in the control group tended to have higher expectations of future purchases than did the subjects in the telephone group. Although the overall differences among the three groups were not significant, the differences between the telephone group and the letter group were significant at the .05 level.

Guiding Hypothesis No. 4: Consumer Characteristics and Cognitive Dissonance

The fourth guiding hypothesis concerned whether certain types of consumers would be more likely to experience dissonance than other types. It was hypothesized that as shopping effort increased, dissonance would decrease. It was further hypothesized that there would be no relationship between level of dissonance and each of the following variables:

1. Number of stores visited while shopping
2. Number of brands considered while shopping
3. Education level of consumer
4. Race of consumer
5. Age of consumer
6. Family income of consumer
7. Brand of appliance purchased

8. Branch of store from which purchase was made
9. Consumer's previous experience with purchased brand
10. Stage in the family life cycle
11. Social class of consumer
12. Sex of consumer
13. The interviewer who administered the questionnaire.

Findings of the Study

Contrary to the hypothesis, there was no significant relationship found between shopping effort and the level of dissonance. Also, there was no significant relationship between dissonance and any of the other demographic variables.

Conclusions and Implications for Marketing

The major conclusions and implications for marketing based on the author's interpretation of the results of the study are presented in the following sections. Since most of the findings did not achieve the customary .05 level of significance, the conclusions must be considered as tentative.

1. The major conclusion of the study concerns whether post-transaction reassurances from a retailer to recent purchasers would be effective in reducing dissonance. The study yielded evidence to support the conclusion that at least some types of messages would be effective in reducing dissonance, since the subjects in the letter group did tend

to experience less dissonance than did the subjects in the control group. However, it would appear that good intentions are no substitute for good information, since the subjects who received the telephone call actually experienced more dissonance than the subjects in the control group.

Neither theory nor the other findings of the study explain why the results of the telephone group were contrary to expectations. The author offers the following conjectures as possibly contributing to the finding:

1. The subjects who received the telephone call may have suspected some ulterior motive for its purpose.
2. The telephone call may have interrupted some of the subjects at inopportune times.
3. Some of the subjects may have been annoyed by firms that sell over the telephone, and, therefore, interpreted the telephone call as a sales device.

The above conclusions would imply that retailers and/or manufacturers should exercise great caution before embarking on a program designed to help reduce the dissonance of recent purchasers. Not only might the program be ineffective in helping the recent purchasers, but, also, the program could aggravate the situation by increasing the dissonance of recent purchasers. Certainly, extensive pre-testing of any specific program would be advisable.

2. The second conclusion of the study concerns one of the benefits posited to accrue to the retailer for providing post-transaction reassurances to recent purchasers. Since the subjects who received the letter generally had

more favorable attitudes toward the store than did the control group, it would appear that a program of providing post-transaction reassurances might be effective in improving the attitudes toward the store of recent purchasers. However, since the attitudes of the telephone group were less favorable than the control group, it would be erroneous to conclude that all such programs would result in more favorable attitudes.

The above conclusions would imply that if a retailer and/or manufacturer desired to use post-transaction reassurances as a vehicle to improve the attitudes of recent purchasers, extensive pre-testing of such a program would be recommended since the efforts could have either positive or negative results.

3. The third conclusion concerns another benefit posited to accrue to the retailer for providing post-transaction reassurances to recent purchasers. It would appear that it is possible to increase the consumer's expectations of future shopping activity by providing post-transaction reassurances, since the letter group had higher "predispositions to purchase" than the control group. Once again, all well-intentioned efforts cannot be expected to be rewarded, since the telephone group actually had lower expectations of future shopping activity than did the control group.

The above conclusions would not necessarily imply that the subjects that received the post-transaction reassurances would actually purchase more in the future than the control group. Intentions are not necessarily the same as behavior. Only a study with a longitudinal design could yield information as to whether respondents actually behaved according to expectations.

4. The fourth conclusion concerns whether certain types of consumers are more likely to experience dissonance than other types. The study did not yield evidence to support the assertion that any one of the 14 demographic variables was correlated with dissonance.

The above would imply that at the present time none of the 14 demographic variables can be used with confidence as a market segmentation tool for predicting propensity to experience dissonance among consumers.

Cognitive Dissonance and Marketing: A Commentary

The study has attempted to test some of the implications of the theory of cognitive dissonance to marketing. As with many research projects, the study appears to have raised at least as many questions as it has answered:

1. Why did the telephone call actually increase post-transaction anxiety in the subjects, instead of reducing it?

2. Since the telephone call was not effective, would such an impersonal, hit-or-miss technique such as advertising be effective, as has been suggested in the marketing literature [31:75]?
3. Would different copy in either the letter or telephone call have changed the results?
4. The letter appeared to be effective in helping consumers reduce anxiety. Would it be worthwhile for a retailer to initiate such a program? Would the benefits be worth the costs when compared with other programs?
5. Would a larger survey-type design have been successful in segmenting the customers along demographic characteristics with respect to dissonance?
6. Do the absolute values of the dissonance scores have any significance? Without a benchmark against which to compare, it is difficult to make any statement as to the absolute level of post-transaction anxiety the subjects were experiencing. Only comparisons between groups were possible.

In an age when words such as "interdisciplinary," "transdisciplinary," and "multidisciplinary" are the fad, it is well to reflect on the dangers of borrowing theories from other disciplines. Most modern marketing texts which have sections on consumer behavior will discuss the theory of

cognitive dissonance. Unfortunately, some texts present the theory in much more positive terms than would appear warranted.

The jury is still out on dissonance theory, and the results of the present study would indicate that policy recommendations based on dissonance theory are tenuous. Such general recommendations as: "Manufacturers also can run advertisements showing recent purchasers showing satisfaction with their choice, and why," may be ill-advised since there exists no experimental evidence to support the assumption that the advertisements would be effective in accomplishing the desired result. What is worse, since the telephone call in the study actually aggravated the situation instead of improving it, such general policy recommendations might produce negative results instead of simply being ineffective.

Marketing cannot afford to be, and should not be, parochial, and yet, borrowing a theory from another discipline (even under the halo of being "interdisciplinary") must be done only after extensive investigation of the theory in a marketing context. There would appear to be a great deal of research to be done before definitive policy recommendations can be made using dissonance theory as a foundation.

Suggestions for Future Research

There are numerous directions that future research could take in the general area of the marketing implications of cognitive dissonance theory. The following represent a sample of the author's suggestions:

1. The study was restricted to one type of purchase, major appliances, and to one type of product within this group, refrigerators. Replication of the study across product categories would provide information on how "important" the purchase has to be in order for dissonance to be a factor. The study could provide information as to whether price is a good indicator of "importance." Such studies could seek to delineate which types of purchases are most likely to be dissonance arousing.

2. The study was limited to one type of store, a "conventional" department store. Replication of the study for other types of establishments would be useful, e.g., for "discount" stores. Such studies could seek to delineate the possible relationships among store prestige, service policies, merchandising policies and consumer dissonance.

3. The study used two types of post-transaction messages, a letter and a telephone call. Other studies could use different media and/or different copy. Newspapers or television advertising might have completely different results. The copy could go into the more technical details of the product. Such studies would reveal whether the

negative results of the telephone call were unique to that particular medium.

4. Finally, the research design did not permit the inclusion of information concerning the differences in shopping behavior of the three groups after the receipt of the post-transaction message. A longitudinal design which included this important variable would be desirable.

APPENDIX A

TABLE 12

APPENDIX A

Table 12. Summary of Kruskal-Wallis H and associated probabilities with the null hypothesis that the perceived dissonance scores of the subjects when classified by the various consumer characteristics came from the same population

Group	Kruskal-Wallis H^a	p^b	Level of Significance
<u>Shopping effort expended:</u>			
Control	0.3388	0.8442	NS
Letter	2.7440	0.2541	NS
Telephone	0.9780	0.6132	NS
<u>Number of stores visited while shopping:</u>			
Control	1.4506	0.4842	NS
Letter	2.2788	0.3200	NS
Telephone	2.5512	0.2793	NS
<u>Number of brands considered while shopping:</u>			
Control	3.8433	0.1464	NS
Letter	0.4391	0.8029	NS
Telephone	3.4074	0.1820	NS
<u>Educational level of consumer:</u>			
Control	16.3885	0.0118	.05
Letter	1.5246	0.9102	NS
Telephone	2.7763	0.7344	NS
<u>Race of consumer:</u>			
Control	0.9121	0.6338	NS
Letter	2.5335	0.2817	NS
Telephone	0.3693	0.5434	NS
<u>Age of consumer:</u>			
Control	3.9178	0.5613	NS
Letter	2.0662	0.7236	NS
Telephone	5.8286	0.2123	NS
<u>Family income of consumer:</u>			
Control	7.2397	0.2992	NS
Letter	5.7553	0.4512	NS
Telephone	12.1455	0.0588	NS

Table 12--Continued

Group	Kruskal-Wallis H^a	p^b	Level of Significance
<u>Brand of appliance purchased:</u>			
Control	6.9864	0.1366	NS
Letter	2.5743	0.4620	NS
Telephone	3.9427	0.4138	NS
<u>Branch of store from which purchase was made:</u>			
Control	6.1705	0.2900	NS
Letter	4.7791	0.3107	NS
Telephone	1.2320	0.8728	NS
<u>Consumer's previous experience with purchased brand:</u>			
Control	0.6415	0.7256	NS
Letter	2.2370	0.3268	NS
Telephone	3.5776	0.1672	NS
<u>Stage in the family life cycle:</u>			
Control	7.3137	0.1202	NS
Letter	1.5023	0.9128	NS
Telephone	5.1216	0.4012	NS
<u>Social class of consumer:</u>			
Control	5.3734	0.0681	NS
Letter	0.4339	0.9332	NS
Telephone	0.4380	0.8033	NS
<u>Sex of consumer:</u>			
Control	1.0285	0.3105	NS
Letter	1.9408	0.1638	NS
Telephone	0.0147	0.9036	NS
<u>The interviewer who administered the questionnaire:</u>			
Control	1.2918	0.8628	NS
Letter	3.7157	0.4458	NS
Telephone	2.6310	0.7566	NS

^aThe test statistic was computed for each group individually, instead of for all groups taken together, in an attempt to prevent confounding of the variables.

^bProbability of a true null hypothesis.

APPENDIX B

RESEARCH HYPOTHESES

APPENDIX B

RESEARCH HYPOTHESES

A guiding hypothesis of the proposed research is that manufacturers and/or retailers can assist consumers in their efforts to reduce cognitive dissonance by providing post-transaction reassurances. Furthermore, not all types of post-transaction messages will be equally effective. The specific hypotheses are:

A1. The mean perceived dissonance scores of subjects in Group III will be lower than the subjects in Group I, and the differences will be significant.

A2. The mean perceived dissonance scores of the subjects in Group II will be lower than the subjects in Group I, and the differences will be significant.

A2.1. The mean perceived dissonance scores of the subjects in Group III will be lower than the subjects in Group II, and the differences will be significant.

A second guiding hypothesis is that one of the benefits posited to accrue to the retailer for providing dissonance reducing information is that the groups which receive assistance will then view the store more favorably than the groups which do not receive assistance. The specific hypotheses are:

B1. The mean scores of the subjects in Group III for each of the five additional dimensions of store image will be lower (more favorable) than the mean scores of subjects in Group I, and the differences will be significant.

B2. The mean scores of the subjects in Group II for each of the five additional dimensions of store image will be lower (more favorable) than the mean scores of subjects in Group I, and the differences will be significant.

B2.1. The mean scores of the subjects in Group III for each of the five additudinal dimensions of store image will be lower (more favorable) than the mean scores of subjects in Group II, and the differences will be significant.

A second benefit posited to accrue to the retailer for providing dissonance reducing information is that the assisted groups will be more predisposed to purchase at that store than the group which does not receive assistance. The specific hypotheses are:

C1. The mean scores of subjects in Group III for predisposition to buy will be lower (more favorable) than the mean scores for subjects in Group I, and the differences will be significant.

C2. The mean scores of subjects in Group II for predisposition to buy will be lower (more favorable) than the mean scores for subjects in Group I, and the differences will be significant.

C2.1. The mean scores of subjects in Group III for predisposition to buy will be lower (more favorable) than the mean scores for subjects in Group II, and the differences will be significant.

Past research has indicated that people who expend more effort in shopping will experience less cognitive dissonance [5]. The specific hypotheses are:

D1. Within each of the three groups of subjects, those individuals who are classified as "Low Effort" will have higher mean perceived dissonance scores than those who are classified as "Medium Effort," and the differences will be significant.

D1.1. Within each of the three groups of subjects, those individuals who are classified as "Low Effort" will have higher mean perceived dissonance scores than those who are classified as "High Effort," and the differences will be significant.

D2. Within each of the three groups of subjects, those individuals who are classified as "Medium Effort" will have higher mean perceived dissonance scores than those who are classified as "High Effort," and the differences will be significant.

Prior research has indicated that certain personality types are more likely to experience cognitive dissonance than others [8:14-15]. However, there has been no research which would indicate that the level of cognitive dissonance

should vary with any of the six demographic variables of age, education, family income, stage in the family life cycle, social class, and race. The specific hypotheses are:

E1. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by age.

E2. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by education.

E3. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by income.

E4. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by race.

E5. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by stage in the family life cycle.

E6. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by social class.

E7. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by brand purchased.

E8. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by number of stores visited.

E9. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified by number of brands considered.

E10. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified on the basis of whether they are credit card purchasers or not.

E11. Within each of the three groups there will be no significant differences in mean perceived dissonance scores when subjects are classified on the basis of whether the appliance has been delivered or not.

APPENDIX C

THE QUESTIONS USED

APPENDIX C

THE QUESTIONS USED

I. Perceived Dissonance

1. If a friend were going to buy a similar appliance, I would (would not) recommend this store.
2. If a friend were going to buy a similar appliance, I would (would not) recommend this brand.
3. There is no doubt (considerable doubt) in my mind as to whether I should have made my purchase in this store.
4. There is no doubt (considerable doubt) in my mind as to whether I should have selected this particular brand of appliance.
5. I got a "good deal" ("bad deal") on this appliance.
6. I should have spent more (less) time in "shopping around" for this appliance.

II. Store Image

A. Merchandise Suitability

1. They show the newest styles sooner (later) than other department stores.
2. Sells high (low) quality merchandise.
3. The merchandise they sell is (is not) the kind I like to buy.
4. You can always (never) find a wide variety of things to choose from.
5. A good (poor) place to get new ideas about home furnishings.
6. Rarely (frequently) runs out of merchandise.
7. Prices are likely to be lower (higher) here than in other department stores for the same merchandise.

8. When they have a sale, the sale merchandise is of (below) regular quality.
9. I am always (never) satisfied with the goods I buy there after I purchase them.

B. Store Services

1. They are liberal (strict) on exchanges and returns.
2. Their advertising is informative (not informative).
3. Charge account policies are good (poor).
4. Very liberal (strict) in cashing checks.
5. Repair services on appliances are excellent (poor).
6. A reliable (an unreliable) store.

C. Sales Personnel

1. Sales people make you feel that you are important (unimportant).
2. Sales people know (don't know) their merchandise very well.
3. Sales people are (are not) interested in being of service to customers.
4. Sales people are courteous (discourteous) to customers.
5. Sales people make you feel comfortable (uncomfortable) if you are just browsing.
6. Sales people are always (never) there when you need them.

D. Congeniality

1. A warm, friendly (cold, unfriendly) store.
2. The store is never (often) too crowded for enjoyable shopping.
3. I am likely (unlikely) to meet people like myself there.

4. The appearance of the store is attractive (not attractive).
5. Shopping at the store is enjoyable (not enjoyable).

E. Locational Convenience

1. Easy (difficult) for me to get there.
2. Parking facilities are excellent (poor).
3. I can (can't) save time by shopping there.
4. The way departments in the store are arranged makes it easy (difficult) to find things.
5. Convenient (inconvenient) because it is near (not near) other stores I want to shop at.

III. Predisposition to Buy

1. In the future I plan to do a much higher (much lower) percentage of my shopping in this store than I have done in the past.

IV. Shopping Effort

1. How many stores did you visit in shopping for this appliance (including the final choice)?
 - a. one
 - b. two
 - c. three or more
2. How many brands did you consider in shopping for this appliance (including the final choice)?
 - a. one
 - b. two
 - c. three or more

V. Demographic Data

1. Please indicate the letter which corresponds to your age category.
 - A. Less than 20 years
 - B. More than 20 but less than 30 years
 - C. More than 30 but less than 40 years
 - D. More than 40 but less than 50 years
 - E. More than 50 but less than 65 years
 - F. 65 years or more

2. Please indicate the letter which corresponds to the last year of school which you completed.
- A. Grade school or less
 - B. Some high school
 - C. Graduated from high school
 - D. Some college
 - E. Graduated from college
 - F. Graduate or advanced degree
3. Please indicate the letter which corresponds to your total family income before taxes last year.
- A. Less than \$4,000
 - B. \$4,000-\$7,999
 - C. \$8,000-\$9,999
 - D. \$10,000-\$12,499
 - E. \$12,500-\$14,999
 - F. \$15,000-\$24,999
 - G. \$25,000 or more
4. What is the race of the respondent?
- A. White
 - B. Negro
 - C. Other_____ (please specify)
5. Was your "old" appliance the same brand as your "new" appliance?
- a. Yes_____
 - b. No_____
 - c. Did not previously own this type of appliance_____
- IF ANSWER TO 5 IS "b" OR "c" THEN ASK QUESTION 6.
6. Do you at the present time own any other major kitchen and/or laundry appliance [stove, refrigerator, dishwasher, clothes washer, dryer, or freezer] which is the same brand as your new appliance?
- a. Yes_____
 - b. No_____
7. Are you married?
- _____ A. Married
 - _____ B. Single
 - _____ C. Widowed
 - _____ D. Divorced, Separated

8. Do you have children living at home? [INCLUDE CHILDREN SUPPORTED BY PARENTS WHO ARE AWAY AT SCHOOL].
- ☐ A. Yes
☐ B. No
☐ C. Not applicable
9. What is the occupation of the male head of the household? [IF NO MALE HEAD THEN WHAT IS THE OCCUPATION OF THE FEMALE HEAD?]
-
10. Where does he (she) work? [COMPANY NAME, ETC.]
-
11. Please indicate the letter which corresponds to the greatest source of your family income.
- ☐ A. Inherited wealth
☐ B. Profits and dividends
☐ C. Earned salary
☐ D. Earned hourly wage
☐ E. Other, please specify
12. Do you own or rent this building?
- ☐ A. Own
☐ B. Rent
13. Would you please indicate which price category this home would fall into if it were placed on the market today?
- ☐ A. More than \$50,000
☐ B. \$35,000 to \$49,999
☐ C. \$20,000 to \$34,999
☐ D. \$15,000 to \$19,999
☐ E. \$12,000 to \$14,999
☐ F. \$10,000 to \$11,999
☐ G. Less than \$10,000
14. Would you please indicate the category into which your monthly rent falls?
- ☐ A. More than \$500
☐ B. \$250 to \$499
☐ C. \$150 to \$249
☐ D. \$100 to \$149

- ☐ E. \$75 to \$99
- ☐ F. \$50 to \$74
- ☐ G. Less than \$50

15. Please observe the respondent's neighborhood and indicate into which of the following classifications it falls:

- ☐ A. Very high; North Shore, etc.
- ☐ B. High; the better suburbs and apartment house areas
- ☐ C. Above average; areas all residential, larger than average space around homes; apartment areas in good condition
- ☐ D. Average; residential neighborhoods, no deterioration in area
- ☐ E. Below average; area not quite holding its own
- ☐ F. Low; considerably deteriorated, run-down, and semi-slum
- ☐ G. Very low; slum.

APPENDIX D

INTERVIEWER INSTRUCTIONS AND QUESTIONNAIRE

APPENDIX D

INTERVIEWER INSTRUCTIONS

Interview Kit

Each interviewer will be provided with the following:

- a. List of subjects.
- b. Identification card and letter.
- c. Questionnaires, instructions, and respondent category cards.

Subject lists

All interviewers will be supplied with a list of subjects at least one day prior to the day the interviewing will take place. The list will contain the following for each subject:

- a. Name and address.
- b. Telephone number.
- c. Respondent number.
- d. Brand name and type of appliance purchased.
- e. Date on which interview will be conducted.

Who will be interviewed?

The female head of the household will be interviewed. If there is no female head of the household, then the male head of the household can be interviewed. No one is to be interviewed who is not on the subject list.

What about call-backs?

No interviews are to be made before the date on the subject list. If the female head of the household is not at home or cannot be interviewed at that time, try to arrange an appointment for later that day or one of the two days

immediately following. If this is not possible, the subject should be dropped from the active list and a notation made to that effect on the subject list. Telephone calls to set-up appointments are to be attempted. Subjects may be dropped from the active list if there is no answer after three telephone calls. If two calls are in the afternoon, then the third must be in the evening, and vice-versa.

The Questionnaire

The questionnaire is in three parts: one part (pages 1-4) contains demographic questions to be asked of the respondent. Part II of the questionnaire (pages 8-14), which contain the rating scales, should then be self-administered by the respondent. Upon the conclusion of the rating scales, the demographic questions in Part III (pages 5-7) should be asked.

Be certain that the respondent's number appears both on the front of the questionnaire and in the upper left corner of page 8.

QUESTIONNAIRE

COGNITIVE DISSONANCE RESEARCH STUDY

DEPARTMENT OF MARKETING AND TRANSPORTATION ADMINISTRATION

MICHIGAN STATE UNIVERSITY

EAST LANSING, MICHIGAN

Respondent No.: _____

Name: _____

Street Address: _____

City, State: _____

Telephone: _____

Purchase Date: _____

Interview Date: _____

Appliance Type and Brand: _____

C7
C8

Interviewer Name: _____

C9

Do Not Write Below This Line

C1

C2

C3

No: _____

C4

Group: _____

C5

Days: _____

C6

Introduction

Good morning [AFTERNOON, EVENING], my name is _____
from the Market Opinion Research Company. We are conducting a study
for Michigan State University concerning appliance purchasing habits.
Several major companies are cooperating on the study and our records
indicate that you recently purchased a refrigerator. Is that correct?
[PAUSE FOR REPLY].

May I come in to ask a few questions about your purchase experience?

[AFTER GAINING ENTRY, GET RESPONDENT TO SIT DOWN FOR FOLLOWING
QUESTIONS].

8.1 How many stores did you visit in shopping for this appliance
C10including the final choice?

- _____ A. One
_____ B. Two
_____ C. Three or more

8.2 Which stores did you visit?
C11 _____

8.3. In which store did you make your final purchase? [BE
C12 SPECIFIC, NORTHLAND, EASTLAND, ETC.]

8.5. Why did you decide to buy your refrigerator at that store?
C13 [PROBE]

- 9.1 How many brands did you consider in shopping for this
C14 appliance?
*C15 _____ A. One or two
_____ B. Three or four
_____ C. Five or more

9.2. Which brands did you consider when you were shopping?

- 9.3 Why did you select your final brand? [PROBE]
C16 _____

- 10.1 Was your "old" appliance the same brand as your "new"
C17 appliance?
_____ A. Yes
_____ B. No
_____ C. Did not previously own this type of appliance.

- 10.2 Do you at the present time own any other major kitchen
C18 and/or laundry appliances which are the same brand as
*C19 your new appliance?
_____ A. Yes
_____ B. No

[PUT RESPONDENT'S NUMBER IN THE UPPER LEFT CORNER OF THE FIRST
PAGE OF THE RATING SCALE PORTION OF THE QUESTIONNAIRE. HAND
RESPONDENT THE RATING SCALES AND INSTRUCT HER AS FOLLOWS:]

Since you have recently purchased a major appliance, we are
interested in how you feel about your purchase. For all the questions,
keep in mind that we are interested in how you personally feel about

the brand of appliance you bought and the store where you bought it.

The questions are similar to the sample question on the first page.

As you will notice, each question has two statements, one on the left side of the page and one on the right. The statement on the right says, "The store where I bought my appliance was dirty". Whereas, the statement on the left says, "The store where I bought my appliance was clean".

First we want you to determine which of the two statements you agree with. For example, if you agree with the statement on the right, you will want to place an "X" in one of the three spaces to the right of the center box. If you felt the store was very dirty, then you would place your "X" in the space over the word "very" to the right of the center box.

On the other hand, if you felt the store was "quite" clean, then you would want to put your "X" over the word "quite" to the left of the center box.

If you don't agree with either of the two statements, then you will want to put your "X" in the center box over the word "neutral".

Please put an "X" in only one space per question. However, be sure to answer every question and remember that we're interested only in how you feel about the brand of appliance you bought and the store where you bought it.

Are there any questions? [IF "NO", ASK RESPONDENT TO BEGIN FILLING IN THE RATING SCALES].

[WHEN RESPONDENT IS FINISHED, TAKE BACK RATING SCALES AND CONTINUE WITH THE QUESTIONNAIRE].

11.1 Are you married?

- C20 ☐ A. Married*
 ☐ B. Single
 ☐ C. Widowed
 ☐ D. Divorced, Separated

*[IF MARRIED ASK 11.2, IF NOT, SKIP TO 11.3]

11.2 Do you have children living at home? [INCLUDE CHILDREN
C21 SUPPORTED BY PARENTS WHO ARE AWAY AT SCHOOL].

- ☐ A. Yes
 ☐ B. No
 ☐ C. Not applicable

11.3 Please indicate the letter which corresponds to your age
C22 category. [HAND RESPONDENT CARD # 1].

*C23 ☐ A. ☐ B. ☐ C. ☐ D. ☐ E. ☐ F.

12.1 What is the occupation of the male head of the household.

*C24 [IF NO MALE HEAD, THEN WHAT IS OCCUPATION OF FEMALE HEAD].

12.2 Where does he (she) work? [COMPANY NAME, ETC.].

12.3 Please indicate the letter which corresponds to the greatest
C25 source of your family income. [HAND RESPONDENT CARD #2].

☐ A. ☐ B. ☐ C. ☐ D. ☐ E. Other, please specify.

12.4 Do you own or rent this building?

- C26 ☐ A. Own*
 ☐ B. Rent

[IF OWNED ASK 12.5, IF RENTED SKIP TO 12.6].

12.5 Would you please indicate which price category this home
C27 would fall into if it were placed on the market today?

[HAND RESPONDENT CARD #3].

12.6 Would you please indicate the category which your monthly
C28 rent falls into? [HAND RESPONDENT CARD # 4].

*C29 _____ A. _____ B. _____ C. _____ D. _____ E. _____ F. _____ G.

13.1 Please indicate the letter which corresponds to the last
C30 year of school you completed. [HAND RESPONDENT CARD #5].

_____ A. _____ B. _____ C. _____ D. _____ E. _____ F.

13.2 Please indicate the letter which corresponds to your total
C31 family income before taxes. [HAND RESPONDENT CARD #6].

_____ A. _____ B. _____ C. _____ D. _____ E. _____ F.

13.3 Do you have a Hudson's credit card?

C32 _____ Yes

_____ No

13.4 Has your appliance been delivered yet?

C33 _____ A. Yes

_____ B. No

[THE FOLLOWING QUESTIONS ARE TO BE ANSWERED BY THE INTERVIEWER
BY OBSERVATION].

14.1 What is the race of the respondent?

C34 _____ A. White

_____ B. Negro

_____ C. Other, specify - _____

14.2 Please observe the respondent's neighborhood and indicate
C35 into which of the following classifications it falls.

_____ A. Very high; North Shore, etc.

_____ B. High; the better suburbs and apartment house areas.

_____ C. Above average; areas all residential, larger than
average space around houses; apartment areas in
good condition.

_____ D. Average; residential neighborhoods, no deterioration

_____ E. Below average; area not quite holding its own.

_____ F. Low; considerably deteriorated, run-down, and
semi-slum.

_____ G. Very low, slum.

Sample Question No 1

The store where I bought
my appliance was clean.

: Very : Quite : Slightly : Neutral : Slightly : Quite : Very :
The store where I
bought my appliance
was dirty.

2.3. The merchandise they sell is the kind I like to buy.

Very Quite Slightly Neutral Slightly Quite Very

The merchandise they sell is not the kind I like to buy.

4.2. Sales people know their merchandise very well.

Very Quite Slightly Neutral Slightly Quite Very

Sales people don't know their merchandise very well.

6.5. Convenient, because it is near other stores I want to shop at.

Very Quite Slightly Neutral Slightly Quite Very

Inconvenient, because it is not near other stores I want to shop at.

1.1. I got a good deal on this appliance.

Very Quite Slightly Neutral Slightly Quite Very

I got a bad deal on this appliance.

5.3. I am likely to meet people like myself there.

Very Quite Slightly Neutral Slightly Quite Very

I am unlikely to meet people like myself there.

6.4. The way departments in the store are arranged makes it difficult to find things.

Very Quite Slightly Neutral Slightly Quite Very

The way departments in the store are arranged makes it easy to find things.

6.1. Easy for me to get there.

Very Quite Slightly Neutral Slightly Quite Very

Difficult for me to get there.

1.3. There is considerable doubt in my mind as to whether I should have made my purchase in this store.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very

There is no doubt in my mind as to whether I should have made my purchase in this store.

4.1. Sales people make you feel that you are unimportant.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very

Sales people make you feel that you are important.

4.5. Sales people make you feel uncomfortable if you are just browsing.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very

Sales people make you feel comfortable if you are just browsing.

3.6. A reliable store.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very

A unreliable store.

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1.2. If a friend were going to buy a similar appliance, I would not recommend this store.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very

If a friend were going to buy a similar appliance I would recommend this store.

4.3. Sales people are not interested in being of service to customers.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very

Sales people are interested in being of service to customers.

3.1. They are strict on exchanges and returns.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very

They are liberal on exchanges and returns.

- 4.6. Sales people are always : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Sales people are never there when you need them.
- 4.4. Sales people are courteous to customers. : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Sales people are discourteous to customers.
- 1.5. If a friend were going to buy a similar appliance, I would recommend this brand. : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : If a friend were going to buy a similar appliance, I would not recommend this brand.
- 5.2. The store is never too crowded for enjoyable shopping. : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : The store is often too crowded for enjoyable shopping.
- 2.8. When they have a sale, the sale merchandise is below regular quality. : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : When they have a sale, the sale merchandise is of regular quality.
- 2.7. Prices are likely to be lower here than in other department stores for the same merchandise. : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Prices are likely to be higher here than in other department stores for the same merchandise.
- 1.4. I should have spent less time in "shopping around" for this appliance. : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : I should have spent more time in "shopping around" for this appliance.

5.5. Shopping at the store is not enjoyable.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Shopping at the store is enjoyable.

6.3. I can save time by shopping there.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : I can't save time by shopping there.

2.6. Frequently runs out of merchandise.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Rarely runs out of merchandise.

1.6. There is considerable doubt in my mind as to whether I should have selected this particular brand of appliance.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : There is no doubt in my mind as to whether I should have selected this particular brand of appliance. 11 9

2.5. A good place to get new ideas about home furnishings.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : A poor place to get new ideas about home furnishings.

3.2. Their advertising is informative.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Their advertising is not informative.

2.1. They show the newest styles sooner than other department stores.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : They show the newest styles later than other department stores.

- 6.2. Parking facilities are poor.
 : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Parking facilities are excellent.
- 3.5. Repair services on appliances are poor.
 : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Repair services on appliances are excellent.
- 7.1. In the future I plan to do a much lower percentage of my shopping in this store than I have done in the past.
 : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : In the future I plan to do a much higher percentage of my shopping in this store than I have done in the past.
- 2.2. Sells low quality merchandise.
 : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : Sells high quality merchandise.
- 5.4. The appearance of the store is attractive.
 : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : The appearance of the store is not attractive.
- 2.4. You can never find a wide variety of things to choose from.
 : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : You can always find a wide variety of things to choose from.
- 5.1. A cold unfriendly store.
 : Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very : A warm, friendly store.

2.9. I am always satisfied
with the goods I buy
there after I
purchase them.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very :
I am never satisfied
with the goods I buy
there after I
purchase them.

3.4. Very liberal in
cashing checks.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very :
Very strict in
cashing checks.

3.3. Charge account
policies are poor.

: Very : Quite : Slightly : ☐ : Neutral : Slightly : Quite : Very :
Charge account
policies are good.

APPENDIX E

THE POST-TRANSACTION LETTER MESSAGE



APPENDIX E

THE J. L. HUDSON COMPANY

DETROIT, MICHIGAN • 48226 • PHONE 223-5100

Dear Mrs. (Miss) _____

Thank you for purchasing your refrigerator here at Hudson's. We're naturally pleased that you chose Hudson's to help you fill your needs.

I felt that you would be interested in learning that our customers' experience with the (name of brand refrigerator) has been particularly favorable. Also, our service records show it to be excellent in both performance and dependability.

Since we constantly seek to maintain our high standards in both merchandise and service, please do not hesitate to contact me if I can be of any further assistance.

Thanks again for your patronage.

Sincerely,

Appliance Department Manager

[Note: Each letter was individually typed for each person.]

APPENDIX F

THE POST-TRANSACTION TELEPHONE MESSAGE

APPENDIX F

E. Hello, Mrs. _____?

R. Yes

E. My name is Shelby Hunt and I'm with the J. L. Hudson Co.
[No Pause]. I understand you just purchased a [Name of
Brand] refrigerator from us . . . is that correct?

R. Yes

E. The purpose of my call is to express our sincere appreciation for your purchase . . . we're naturally very glad that you selected Hudson's to help fill your needs.
[PAUSE]

E. Was your "old" refrigerator a [Name of Brand] also?

R. No

E. Well, you might be interested to know that our customers' experience with the [Name of Brand] unit has been particularly favorable. Our service records show it to be exceptionally dependable with very little maintenance required.

[PAUSE]

E. Thanks again for your patronage and please don't hesitate to contact us if we can be of any further assistance.

[PAUSE]

E. Goodbye

[Note: The above message was delivered to the female head of the household. If the female head of the household was not at home, then a call-back was made at a later time.]

APPENDIX G

STATISTICAL PROCEDURES

APPENDIX G

Mann-Whitney U Test

The Mann-Whitney U statistic is a nonparametric test to determine the probability that two independent samples, which may be of unequal size, come from identical populations [42:75-83].

Procedure

1. Determine the value of X and Y. X = the number of cases in the smaller group; Y = the number of cases in the larger group.
2. Rank together the scores for both groups, assigning the rank of 1 to the score which is algebraically lowest. Ranks range from 1 to $N = X + Y$. Assign tied observations the average of the tied ranks.
3. Determine the value of U by the formulae:

$$U = XY + \frac{X(X+1)}{2} \quad \text{--R1}$$

or, equivalently:

$$U = XY + \frac{Y(Y+1)}{2} \quad \text{--R2}$$

4. The method for determining the significance of the value of U depends on the size of Y:
 - a. If Y is 8 or less, the exact probability associated with a value as small as the observed

value of U is shown in [the table on (42:271-273)]. If the observed value of U is not shown in the table, it is U₁ and should be transformed to U by the formula:

$$U = XY - U_1$$

- b. If Y is between 9 and 20, the significance of any observed value of U may be determined by reference to [table on (42:274-277)]. If the observed value of U is larger than $XY/2$, it is U₁ and apply above formula for transformation.
- c. If Y is larger than 20, the probability associated with a value as extreme as the observed value of U may be determined by computing the value of Z by the formula:

$$Z = \frac{U - \frac{XY}{2}}{\sqrt{\frac{XY(X+Y+1)}{12}}}$$

and testing this value by reference to [table on (42:247)]. For a two tailed test, double the value of p shown in that table. If the proportion of ties is very large or if the obtained p is very close to alpha, apply the connection for ties, i.e., use formula:

$$Z = \frac{U - \frac{XY}{2}}{\sqrt{\frac{XY}{N(N-1)} \frac{N^3 - N}{12} - T}}$$

5. If the observed value of U has an associated probability equal to or less than α , reject H_0 in favor of H_1 .

The Kruskal-Wallis One Way Analysis
of Variance by Ranks

The Kruskal-Wallis one-way analysis of variance by ranks is a test for determining whether "k" independent samples have come from the same population [42:184-194].

Procedure

1. Rank all of the observations for the "k" groups in a series, assigning ranks for 1 to N.
2. Determine the value of R (the sum of the ranks) for each of the groups.
3. If there are not a large proportion of ties, compute H by the following formula:

$$H = \frac{12}{N(N+1)} \sum_{j=1}^K \frac{R_j^2}{n_j} - 3(N+1)$$

4. The method for assessing the significance of the observed value of H depends on the size of "k" and the number of groups:
 - a. If k=3 and if n_1, n_2, n_3 are less than or equal to 5, then Table 0 in Siegal [42:282-283] may be used to determine the associated probability under H_0 of an H as large as that observed.
 - b. In other cases, the significance of a value as large as the observed value of H may be assessed by reference to Table C in Siegal [42:249], with:

$$df = k - 1$$

5. If the probability associated with the observed value of H is equal to or less than the previously set level of significance, α , reject H_0 in favor of H_1 .

APPENDIX H

LIST OF SUBURBS INCLUDED IN THE SAMPLE

APPENDIX H

LIST OF SUBURBS INCLUDED IN THE SAMPLE

ALLEN PARK	HIGHLAND PARK
BERKLEY	HUNTINGTON WOODS
BEVERLY HILLS	INKSTER
BINGHAM FARMS	LATHROP VILLAGE
BIRMINGHAM	LINCOLN PARK
BLOOMFIELD HILLS	LIVONIA
CENTERLINE	MADISON HEIGHTS
CLAWSON	MELVINDALE
DEARBORN	NANKIN MILLS
DETROIT	OAK PARK
EAST DETROIT	PLEASANT RIDGE
ECORSE	REDFORD TOWNSHIP
FERNDALE	RIVER ROUGE
FRANKLIN	RIVERVIEW
GARDEN CITY	ROSEVILLE
GROSSE POINTE	ROYAL OAK
GROSSE POINTE FARMS	SOUTHFIELD CITY
GROSSE POINTE SHORES	SOUTHGATE
GROSSE POINTE PARK	ST. CLAIR SHORES
GROSSE POINTE WOODS	WAYNE
HAMTRAMCK	WYANDOTTE
HARPER WOOD	WESTLAND
HAZEL PARK	

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