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An Interdisciplinary Theoretical Framework for the Mailed Questionnaire Process and the Development of a Theory on Immediacy and Salience as Significant Variables of Response Rates

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AN INTERDISCIPLINARY THEORETICAL FRAMEWORK FOR THE MAILED QUESTIONNAIRE PROCESS AND THE DEVELOPMENT OF A THEORY ON IMMEDIACY AND SALIENCE AS SIGNIFICANT VARIABLES OF RESPONSE RATES

by

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ABSTRACT

An Interdisciplinary Theoretical Framework for the Mailed Questionnaire Process and the Development of a Theory on Immediacy and Salience as Significant Variables of Response Rates

by

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The mailed questionnaire research process developed historically as part of the survey research movement, with guidelines and models drawn from an array of scientific research methods and disciplines. Although the mailed questionnaire has become one of the most popular research instruments for obtaining data beyond the reach of the observer, the response bias generated from the generally low return rate of the mailed questionnaire survey has remained a problem. For over three decades researchers have generated a plethora of research on the effectiveness of the various aspects of the mailed questionnaire process and the resultant impact of various constructs on survey return. But despite these efforts, researchers have not succeeded collectively in producing a clear,

compelling, or consistent set of principles that, if followed, will produce high response rates in mailed questionnaire research. With the certainty that more knowledge and constructs will be generated in all areas of the mailed questionnaire process, scholars have issued a call for a viable theory to direct future research efforts on response rates. Therefore, the purpose of this study was to address that need.

The dissertation research reported in this paper accomplished five major objectives. It (a) developed an interdisciplinary theoretical framework for the mailed questionnaire process; (b) identified 13 determinants of response costs in the mailed questionnaire process; (c) proposed immediacy and salience as the most significant determinant variables of response rates, from a synthesis of the research literature with the theoretical framework; (d) proposed a theory and theoretical model that explain and illustrate the interaction of immediacy and salience in determining response rate levels; and (e) recommended a method for testing the proposed theory and for utilizing the proposed theory to achieve high response rates in future mailed questionnaire studies.

(241 pages)

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Maribeth Christensen

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DEFINITION OF TERMS

The following terms are used throughout this research study. In general, the definitions that have guided the use of terminology in this dissertation are as follows:

Discipline - A general body of knowledge generated from philosophical, theoretical and empirical foundations. Disciplines are often clustered and categorized into broad domains of knowledge, generally referred to as the natural sciences, the social sciences, the humanities and fine arts. Disciplines can also be categorized as scientific or academic disciplines of knowledge. A scientific discipline is an organized field of inquiry that seeks to explain a domain of knowledge using its own theories, constructs and methods of investigation. For example, psychology and sociology are two of the scientific disciplines that fall within the theoretical domain of the social sciences. Academic disciplines are created from the merging of two or more scientific disciplines of knowledge or from the practical application of constructs within scientific disciplines of knowledge. Law, business, health, and home economics are examples of academic disciplines (Borg & Gall, 1989; Rowley, 1994). Transdisciplines are "tool" disciplines or, more precisely, inter disciplines that cut across and suggest advancement of

scientific and academic disciplines (e.g., statistics, evaluation) (Scriven, 1994).

Interdisciplinary - Reference to "between or among scientific bodies or disciplines of knowledge" (American Heritage, 1983). All conceptual aspects of interdisciplinary, multidisciplinary, and integrated disciplines of knowledge, dialectic theory, and interconnected concepts have been summarized in this theoretical study as interdisciplinary concepts.

Theoretical Framework - A model or paradigm that organizes constructs into a formal structure that can be used to deductively examine a process or to organize research findings to assist in the development of a theory.

Construct - A concept statement used to describe events that share similar elements. When linked together, constructs define the components of a principle or process. A construct can either be defined constitutively by referring to other constructs, or operationally by specifying the activities used to measure or manipulate other variables (Borg & Gall, 1989).

Mailed Questionnaires - Survey questions that are (a) printed in an easy-answer format, (b) accompanied by a cover letter, and (c) postal delivered to a specified sample population. Mailed questionnaires require a quick response from the recipient and are requested to be

returned to the researcher, usually in a provided self-addressed envelope.

Response Rates - The percent of completed questionnaires that are returned to the researcher from the respondents following the mailing of a survey questionnaire (Borg & Gall, 1989).

Response Costs - The physical, psychological, social, temporal, economic, intellectual, and/or aesthetic cost(s) of responding to a mailed questionnaire; that is, the entirety of what the respondent contributes, sacrifices or invests in the act of responding to a mailed questionnaire.

Determinants of Response Costs - Variables that determine why and how particular constructs influence the decision to complete and return a mailed questionnaire. Response costs can be a direct result of mailed questionnaire constructs or an indirect result of other intervening variables.

Response Inducement Techniques - Constructs used in the formation and administration of a mailed questionnaire that have been employed to increase response rates. These response inducement techniques have been used as experimental methodological treatments in research studies that examine techniques for increasing response rates. They are tools used by the researcher to directly influence the determinants of response costs. Some response inducement

techniques have proven to be more effective than others in increasing mailed questionnaire response (Rodgers & Worthen, 1995).

Immediacy - The quality or state of urgency, that prompts direct action and provides freedom from the feeling of need for immediate intervention (American Heritage, 1983; Merriam-Webster, 1974). Immediacy is action oriented. When immediacy is involved in the decision to respond, it will dictate the urgency and speed of one's efforts. Immediacy is motivated by the management of available resources, that is, freedom from external constraints upon time, energy, intellect, and so forth.

Salience - The quality of being important, prominent or noticeable (Heberlein & Baumgartner, 1978; Merriam-Webster, 1974). Factors of salience are closely allied with a value system. When salience is "acted upon," people are choosing to do or act upon the things they value or the things that are important to them. Salience can be psychologically, sociologically, politically, and geographically motivated, that is, interdisciplinarily motivated, in the mailed questionnaire process.

CHAPTER I

INTRODUCTION

The knowledge base underlying the mailed questionnaire research process developed historically as part of the survey research movement, with guidelines and models drawn from an array of scientific research methods and disciplines (Rowley, 1994). Through the years, mailed questionnaire surveys have become one of the most popular research instruments for obtaining data beyond the physical, auditory, or visual reach of the observer, particularly in the scientific disciplines of the social sciences. The unfortunate, predominant, and sometimes overwhelming problem of using mailed surveys, however, has been the response bias generated from the generally low return rate of the questionnaires (Borg & Gall, 1989). Over the past several decades, a plethora of research has been generated on the effectiveness of a great variety of variables associated with the mailed questionnaire process on the resultant rates of return (Rodgers & Worthen, 1995).

Several researchers have developed axioms concerning response rates, particularly guidelines related to response inducement techniques required in the construction and administration process of the questionnaire (Boser & Clark, 1993; Fox, Crask, & Kim, 1988; Hopkins & Gullickson, 1989; Rodgers & Worthen, 1995; Yammarino, Skinner, & Childers, 1991). Other research scholars have focused on the application of theoretical

concepts from various academic disciplines to explain the intended respondent's behavior motivation required to induce response (Biner, 1988; Dillman, 1978, 1991; Furse & Stewart, 1982; Hantula, Stillman, & Warnach, 1990; Heberlein & Baumgartner, 1978; Lockhart, 1984; McKillips, 1984). Although these research efforts have contributed insights about variables influencing questionnaire return concerns, they have not succeeded collectively in producing a clear, impelling, or consistent set of principles that, if followed, will produce high response rates.

The research studies on mailed questionnaire response rates are mostly "raw empiricism" studies that have not been related to any lucid, explanatory paradigm. Instead, the extant research on mailed questionnaire techniques is a welter of studies that have previously resisted all efforts to produce a sensible synthesis. Put simply, there is no specific theoretical basis identified for most of the studies on mailed questionnaires, and no general theoretical foundation or framework within which the existing research studies can be categorized, synthesized, and analyzed, and groundwork laid for further research to test and expand its components. This approach to the response improvement effort "grants methodological rigor precedence over conceptual understanding in matters of knowledge" (Williams, Olson, & Knapp, 1989, p.14) and has continued for over three decades.

With the certainty that more knowledge and constructs will be generated in all areas of the mailed questionnaire process, scholars have issued a call for a viable theory to direct future research efforts on response rates (Boser & Clark, 1993; Dillman, 1978, 1991; Linsky, 1975; J. P. Shaver, personal communication, 1993). To date, however, no serious efforts have even been made to develop a theoretical framework that would establish the foundation for guiding researchers in validating the development of theories on increasing response rates in mailed questionnaire surveys and, therefore, strengthening this important research method. The purpose of this study is to develop this needed theoretical foundation so that several viable theories concerning the mailed questionnaire process can be generated.

There are numerous paradigms that explain the process of how a theory develops (Bohm, 1977; Bunge, 1973; Griffiths, 1973; Habermas, 1988; Harrison, 1973; Kuhn, 1977; Popper, 1965, 1972; Toulmin, 1953; Willer & Webster, 1973). Although the general criteria that comprise a theory have also been outlined by several authors (Borg & Gall, 1989; Leavitt, 1994; Leedy, 1993; Salkind, 1994; Shaughnessy & Zechmeister, 1994), the procedures for developing a theory on a topic have not been spelled out operationally or methodologically in sufficient detail. In addition, few process models exist that interconnect the theoretical process paradigms with a theory that has been developed from a large

body of existing knowledge. Therefore, attempts to generate a theory on response rates must necessarily be both empirical and interpretive because they are exploratory in nature (Lavee & Dollahite, 1991).

Initially, the existing body of research knowledge on the mailed questionnaire process must be organized into a logical framework. A framework that relates the constructs of the mailed questionnaire process to their theoretical foundations will emphasize the microprocesses of the response rate phenomenon, particularly the determinant costs of response. Then, when the existing research literature findings on response rates are synthesized with the framework, the significant determinant costs of response will be highlighted. These costs will become the key variables in establishing a strong foundation for a theory (Baumol & Blinder, 1988; Stokes, 1990). A strong theory of questionnaire response rates will enable the survey researcher to make predictions about mailed questionnaire response before a questionnaire's administration, so that critical actions can be taken to decrease the probability of low response and the resulting response bias in the research project.

To accomplish these ends and address these needs, the present researcher developed a theoretical framework for the mailed questionnaire process, determined how the proposed framework clarifies the research literature on mailed questionnaire response, identified the significant determinants of response costs in the mailed questionnaire process, and

proposed a theory that would interrelate these determinants of response. All of these efforts are reported in this dissertation.

Statement of Purpose

The objectives of this dissertation were to:

1. Develop a theoretical framework for the mailed questionnaire process, by:

   a. Identifying the major constructs underlying the mailed questionnaire process.

   b. Associating the various constructs of the mailed questionnaire process with their theoretical and scientific discipline of origin.

   c. Identifying the constructs that contribute to the various determinants of response costs.

   d. Identifying the contribution that the constructs of each scientific discipline make to the overall mailed questionnaire process.

2. Determine how the proposed interdisciplinary theoretical framework clarifies the research literature on the mailed questionnaire process, particularly with regard to:

   a. The use of response inducement techniques in the construction and administration process of a questionnaire.

   b. Analyses of previously proposed theories that explain the behavior motivation involved in the response process.

c. Identifying the significant determinants of response costs in the mailed questionnaire response rate phenomenon.

3. Propose a theory and model of response rate determinants, by discovering and describing the significant determinant variables in the mailed questionnaire response rate process.

4. Make recommendations concerning:

a. A specific study that would test the proposed theory.

b. The improvement of the mailed questionnaire interdisciplinary theoretical framework structure.

c. The use of the proposed theoretical framework for the development and testing of alternative theories on the mailed questionnaire process.

d. The future direction of research on mailed questionnaire response rates.

Research Questions

The following research questions were used as a foundation for this study.

In Developing the Theoretical Framework:

1. What are the theoretical constructs required in the survey research mailed questionnaire process?

2. How do the constructs of the mailed questionnaire process interrelate to each other and to the theoretical foundation of scientific disciplines of knowledge?

3. What are the various determinants of response costs associated with each scientific discipline that contributes knowledge to the mailed questionnaire process?

4. What general contributions do the application of constructs from the various scientific disciplines make to the overall mailed questionnaire process?

In a Deductive Analysis of the Research Literature:

5. What does the research literature reveal about the various response inducement techniques and their impact upon improving response, when examined in relationship to the interdisciplinary theoretical framework?

6. What impact do the various response inducement techniques have on the overall rate of response in experimental design research studies? What can be learned about experimental response rate increase when key variables are examined in connection with the interdisciplinary theoretical framework?

7. Is there a statistically significant difference in the response inducement techniques employed in mailed questionnaire surveys that have

high response rates versus those that have low response rates? How do these differences align with the interdisciplinary theoretical framework?

8. What do previously proposed theories on mailed questionnaire response highlight as the determinants of response costs in the mailed questionnaire process?

9. Which variables of response costs are highlighted as the most essential behavior motivating determinants of the response process?

In Proposing a Theory of the Determinant Variables of Response Costs:

10. How do the key determinants of response interact in the response rate process?

11. Can the proposed theory be empirically tested?

Delimitations

The following delimitations were conscious decisions made to limit the scope of this dissertation study.

1. The interdisciplinary theoretical framework in this study divides the process of mailed questionnaires into three major components: (a) the construction and administration of the questionnaire, (b) the completion and return of the questionnaire, and (c) the analysis of the questionnaire content. Although all components are important in the questionnaire process, this study focused only on the first two

components, because it is within these components that the mailed questionnaires' response rate is controlled.

2. Within the structure of the interdisciplinary theoretical framework, the constructs of the survey research mailed questionnaire process have been assigned to appropriate scientific disciplines of origin. The accepted boundaries of a scientific discipline are somewhat artificially imposed, and constructs by themselves can also be interdisciplinary. No effort, however, has been made to cross-reference the interdisciplinary nature of specific constructs or to cross-list all constructs that might exhibit interdisciplinary tendencies. This effort would become too cumbersome and the multicategorization of constructs would become very murky.

3. From the interdisciplinary theoretical framework generated in this study, several theories related to response rates could be developed. However, this dissertation study only proposed one theory and a corresponding model that, if proven viable, will establish critical groundwork for controlling, in the future, significant response costs in the mailed questionnaire process.

4. The theory proposed in this dissertation should be researched and tested through several experimental studies. In addition, special consideration should also be given to multicultural issues and their impact upon response. This research study, however, proposes in detail only one

research design related to how immediacy and salience, as significant variables of response, can be used to predict and enhance mailed questionnaire response rates.

CHAPTER II

METHODOLOGY

The methodology for this dissertation emerged gradually over a four year period, from multiple reviews of the research literature, introspection, discussion with members of my supervisory committee and with other professional colleagues, interpretive and dialectic associations of the constructs of the mailed questionnaire process, and the empirical examination of the research literature. Each task undertaken revealed the next process to be pursued. The empirical, interpretive, and dialectic insights were revised many times and are still open for discussion. The following sections outline the methodological strategies followed: (a) Articulation of a Theoretical Orientation, (b) Procedures, Instrument, and Analyses, and (c) The Theoretical Paradigm.

Articulation of a Theoretical Orientation

There exist many philosophical and conceptual orientations to theory, such as eclecticism, positivism, postpositivism, pluralism, postmodernism, constructivism, utopianism, teleology, phenomenology, hermeneutics, dialectic, chaos, and so forth. The conceptualization of theory commits us to certain ways of viewing the realities with which we are concerned, but it can also place arbitrary constraints on how we interpret reality. While there are incompatibilities among the various

approaches to theorizing, common elements can be found. This study did not initially seek to subscribe to or reject any of the above theoretical approaches, but, once the present research process was undertaken and completed, the researcher agrees that the procedures followed and the results obtained do set forth a philosophical and theoretical conceptualization. Of the various philosophies proposed, three define best this researcher's philosophical and theoretical approach. They are the chaos, deterministic chaos, and contemporary dialectic concepts of theory (Brown & Baldwin, 1995a; Brown & Baldwin, 1995b; Wheatley, 1993).

Chaos theory is an ancient Greek paradox suggesting that when we step back to observe the shape of things over time, we see the patterns of movement from chaos to order or from order to chaos. Chaos theory is sometimes referred to as "the science of wholeness," where chaos arises because the wholeness of the universe resists being studied in pieces. It is the ability to step back and appreciate the complex and ever-changing shape of how multiple forces work together in a whole process (Wheatley, 1993).

Likewise, deterministic chaos theory submits that very slight variances in the conditions of the linear equation can amplify into unpredictable results as they are fed back on themselves. In other words, a small change can have an impact on the equation of an order far beyond what could have been predicted. Although the hope exists to gain

predictability of the equation when all variables are accounted for, no level of detail will ever satisfy this desire completely (Briggs & Peat, 1989; Coveney & Highfield, 1990; Garcia, 1991; Gleick, 1987; Wheatley, 1993).

Historically, the process of dialectic theory was associated with the logic of argumentation about the rational acceptability of particular theories. Contemporary dialectic theory, however, emphasizes dialectic relations; it is the theoretical conceptualization of interrelationships or reciprocal relationships that exist between or among different realities (Brown & Baldwin, 1995a; Brown & Baldwin, 1995b; Habermas, 1984, 1987; Warren, 1984). The term dialect refers to the interconnectedness of things. Dialectic theory seeks to correct the fragmentation of various concepts of human experience by connecting the various domains with reality and by unifying theory and practice (Brown & Baldwin, 1995a; Brown & Baldwin, 1995b). The narrative that follows explains how the methodology pursued is reflective of these three theoretical perspectives.

The operational process to propose a viable theory on the significant behavior motivating variables of mailed questionnaire response rates was an interpretive 4-year pilgrimage that emerged from a critical examination of the constructs, research, and theories that have been presented on this topic in the literature. Initially the constructs of the mailed questionnaire process were examined in pieces. This was followed by interpreting relationships between these pieces. Pieces were merged together in

segments and then large segments of the process were integrated into a "whole" framework. The "whole" was then examined in parts again, to determine the potential impact of small changes that could occur within.

Following a thorough analysis of the literature, a hypothesis was postulated suggesting that there were specific significant motivating variables in the mailed questionnaire response process. With this premise in mind, as the literature was reexamined, dialectic relationships gradually developed between the various concepts of the mailed questionnaire process, and conceptual chaos evolved into order. Eventually, the proposed theory was conceived inductively through the development of a theoretical framework from associated constructs of the survey research mailed questionnaire process; empirically from examining the methodology used in the mailed questionnaire process; and deductively from examining the association and application of the theoretical framework to research findings on mailed questionnaire response rates.

The process of making sense of the mailed questionnaire response rate phenomenon was dependent upon the present researcher's ability to develop conceptual schemes and to understand the symbols embedded in those schemes. The rational development of mailed questionnaire concepts into the formation of an interdisciplinary theoretical framework was crucial in developing an understanding of the entire process and being able to propose a viable theory and model.

It is recognized that theoretical paradigms are generally not viable as theories until they are published and tested by research scholars, at large, who ultimately validate or reject the proposed concepts. It is, therefore, understood that the interdisciplinary theoretical framework and the resultant theory on the determinant variables of response rates, as outlined in this dissertation, will have to withstand these tests of scholarship and time.

Procedures, Instrument, and Analyses

The initial objective of this theoretical study was to create a framework that would (a) act as an infrastructure in describing the mailed questionnaire process, (b) set the parameters for measuring and controlling the constructs that contribute to response, and (c) establish a foundation for the proposal of a number of theories that could be generated on the mailed questionnaire process. Initially, a conceptual background on the nature of theory, models, disciplines, survey research, mailed questionnaires, and the determinants of response costs was prerequisite to comprehending the significance of the interdisciplinary nature of the constructs in the mailed questionnaire process. A complete systematic review of the literature on these topics was conducted. It is contained in the literature review of Chapter III.

An Interdisciplinary Theoretical Framework for the Mailed Questionnaire Process

The survey research mailed questionnaire process is composed of many constructs, that is, nonobservable components of an observable behavior or procedure. As the various constructs of the mailed questionnaire process were examined and their theoretical origins were probed, the present researcher explored how the constructs reflect the application of the theoretical concepts of the arts and science disciplines. Specific disciplines of knowledge already have strong theoretical foundations. By separating the questionnaire constructs into their related disciplines, the microprocesses underlying the mailed questionnaire procedures were emphasized.

The categorization of the constructs into scientific disciplines also highlighted 13 determinant costs in the response process. It was hypothesized that these costs play a central role in how particular constructs impact upon the decision to complete and return a questionnaire and that some response costs will be more significant than others in achieving high response rates.

Once the constructs of the mailed questionnaire process were categorized by scientific disciplines, they were divided into three basic areas to which the constructs were committed: (a) the construction and administration of the questionnaire, (b) the completion and returning of the questionnaire, and (c) the analyses of the questionnaire data.

When the interdisciplinary theoretical perspective and the process and constructs of mailed questionnaires were integrated, they became a theoretical framework. The theoretical framework conceived and developed is described and presented in Chapter IV. The interdisciplinary theoretical framework was revised several times and submitted to expert survey researchers who reviewed the content and the conceptual presentation and then made recommendations for improvements.

Literature Synthesis: Procedures, Methodology, and Analyses of Data

The development of the interdisciplinary theoretical framework for the mailed questionnaire process provided the infrastructure for a deductive synthesis of the research literature on response inducement techniques when the findings were organized according to the framework. This analysis, as presented in Chapter V, was instrumental in identifying the hypothesized determinants of response costs.

To synthesize the research literature findings on response inducement techniques within the theoretical framework, three sets of data were generated and analyzed. The first data set was obtained from abridging and evaluating the conclusions of comprehensive literature reviews and meta-analyses that examined the effectiveness of various response inducement techniques. The second data set was generated by examining the return rate percentage and the percentage increase of

response generated from research studies that measured the impact of an introductory response inducement variable in the methodological process. The third set of data examined the differences between low and high response rate mailed questionnaire studies, in their methodological use of response inducement variables.

Once summarized, the results of all three data set analyses were aligned with the interdisciplinary theoretical framework. The objectives of this alignment were (a) to determine how the current mailed questionnaire response rate literature findings combine with the theoretical framework, and (b) to determine if the framework would highlight and validate the proposed concept of significant determinants of response costs in the mailed questionnaire process. In addition, the theoretical framework was also correlated with the theories that have been previously proposed on response rates to identify the theoretical concepts prior researchers have seen as contributing cost factors in the response process.

A full presentation of these four analyses is included in Chapter V of this dissertation report. The use of the interdisciplinary theoretical framework to organize the research literature on the mailed questionnaire process provided a provocative foundation for contemplating how the significant determinants of response costs impact mailed questionnaire return.

The Theoretical Paradigm

Once the significant determinant variables in the response process were documented, a theory and a model on the interaction of these variables were created. The theory delineates the basic assumptions made concerning the determinants of response costs in the mailed questionnaire process; and the model identified, interrelated, and predicted the significant behavior motivating variables that determine response rates in a mailed questionnaire survey.

There occasionally exists some confusion of the difference between a theory and a model (Brown & Baldwin, 1995a; Brown & Baldwin, 1995b). The importance of this difference is outlined by Rowley (1994), who explained that models represent essential characteristics of a theory.

> For example, the globe is a model of the earth, and it represents the earth's important features. Models can be graphic or a rendering (as in interior design). Mathematical equations simplify and represent reality. They are models. (p. 12)

She further concluded that while a "theory is judged by truthfulness, models are judged by their usefulness" (p. 13).

Therefore, in this study, a useful model needed to be designed so that the discovery of the significant determinants of response, as expressed in the proposed theory, can benefit the entire survey research mailed questionnaire process. The proposed theory and model are presented and explained in Chapter VI.

Summary

The proposed theory of the significant determinants of response rates will initially be useful only as a descriptive device. It will subsequently need empirical testing of the determinants identified as predictive of response. The methodology required for testing the identified factions of the theory extends well beyond the scope of this dissertation. In Chapter VII, the dissertation does, however, recommend a method of testing the proposed theory in future research studies and, in Chapter VIII, multiple uses of the framework are suggested. The explicit use of a theoretical framework and viable theories at all stages in the research process is essential in a world that views "reality" as inherently theory laden (Lavee & Dollahite, 1991).

CHAPTER III

REVIEW OF THE LITERATURE

The literature related to this dissertation stems from three domains: (a) knowledge concerning the nature of theories, models, disciplines, survey research, and mailed questionnaires; (b) information concerning the interdisciplinary nature of mailed questionnaires; and (c) research related to inducing higher response rates in the mailed questionnaire process. A complete literature review of these topics has been conducted. The first two domains will be discussed in this chapter and the third domain will be examined in Chapter V, which will summarize and synthesize the existing research on response rates together with the interdisciplinary theoretical framework that will be proposed in Chapter IV.

Knowledge Covering Theory and Disciplinary Structures

In order to create a theoretical framework for the mailed questionnaire process, a foundation of the various aspects of such a paradigm must be established. A conceptual background must include a discussion of the nature of theory, models, disciplines, survey research, and mailed questionnaires. While a complete review of these topics has been conducted, an abridged version follows.

The Nature of Theory

A theory is a set of assumptions from which a larger set of empirical laws can be derived (Fiegl, 1951). It is a system that explains a behavioral or physical phenomenon. A theory consists of a set of constructs.

A construct is a concept used to describe events that share similar elements. When linked together, constructs define the components of a principle or process. A construct can either be defined constitutively, by referring to other constructs, or operationally, by specifying the activities used to measure or manipulate other constructs. Most constructs are defined operationally and are called variables because the level or degree to which different subjects display the construct varies (Borg & Gall, 1989; Rowley, 1994). A theory also specifies generalizations or laws that relate constructs to each other and, in a well-developed theory, each of the constructs will be interconnected (Brodbeck, 1973).

The language of theory building can be confusing. Identical concepts can be given different names by various theorists. The basic terminology of theory building, however, is generally comprised of words such as fact, concept, construct, presumption, assumption, theory, and law (Griffiths, 1973).

There are many stages in the development of a theory and most theorists who propose the stages represent them in a paradigm (Bohm, 1977; Bunge, 1973; Griffiths, 1973; Habermas, 1988; Harrison, 1973;

Kuhn, 1977; Popper, 1965, 1972; Toulmin, 1953; Willer & Webster, 1973). It is rare, however, for any science to develop in a cycle or a sequential set of steps. A theory is usually conceived through presumptions and then skips back and forth through the various phases of theory development until the entire paradigm has been defined (Griffiths, 1973).

A good theory identifies commonalities in otherwise isolated phenomena and organizes the findings of research into a powerful explanatory framework. A theory allows us to make predictions and to control phenomena. A theory must have exploratory power; it must be able to suggest new ideas and problems and identify areas for further research (Borg & Gall, 1989; Bunge, 1973; Rowley, 1994).

Research results that do not fit an established theory force the scientist to revise the theory and then to collect new data to test it. As research findings accumulate and an increased understanding of the theory exists, the theory is eventually accepted or rejected (Borg & Gall, 1989). Popper (1965) remarked that "one can sum up all this by saying that the criterion of the scientific status of a theory is its falsifiability, or refutability, or testability" (p. 142). Therefore, an interdisciplinary theoretical framework used to develop a viable theory and model on the survey research mailed questionnaire process should contain these proven and proposed components.

The Nature of Models

A model is a representation of a theory or part of a theory (Baumol & Blinder, 1988). It provides a way of conceiving or thinking of phenomena, by contrasting concepts with each other and illustrating how the concepts connect. Models illuminate cause-and-effect relationships (Baumol & Blinder, 1988; Brodbeck, 1973; Toulmin, 1953). Models provide a feeling of familiarity. They present abstract theories in concrete ways (Rowley, 1994). Models can be narrative, numerical, or pictorial. They are two-dimensional when described on paper and three-dimensional when built into form. From models, we make educated guesses as to how real-life phenomena occur (Baumol & Blinder, 1988).

The Nature of a Discipline

A theory generally operates within the framework of scientific knowledge. The structural foundation of scientific knowledge is divided into four basic theoretical domains, which include the natural sciences, the social sciences, the humanities, and the fine arts. Each of these domains is divided into scientific disciplines (Brown & Baldwin, 1995a; Hultgren, 1989). The natural science domain encompasses the scientific disciplines of biology, chemistry, physics, astronomy, geology, and mathematics. The social science domain contains the scientific disciplines of psychology, sociology, history, geography, political science, and economics. The

humanities domain includes linguistics and philosophy, and the fine arts domain is comprised of music, art, and design.

A scientific discipline is an organized field of inquiry that seeks to explain a distinctive domain of phenomena using its own theories, constructs and methods of investigation (Borg & Gall, 1989). As knowledge and theories accumulate in each scientific discipline, they give rise to specialty areas that are often viewed as separate disciplines. For example, the ancient scientific discipline of alchemy has become, in modern times, astronomy, physics and chemistry (Rowley, 1994; Whiton, 1974).

Academic disciplines are created from the merging of two or more scientific disciplines of knowledge or from the practical application of constructs within and across scientific disciplines of knowledge. For example, the academic discipline of business is basically the application of knowledge gleaned from combining constructs originating in economics, psychology, sociology, and others. Health is the application of knowledge from the biological and social sciences; agriculture is the application of knowledge from the natural physical sciences and the economic side of the social sciences (Rowley, 1994).

Academic disciplines also give rise to specialty domains. For example, the academic discipline of business includes specializations related to management, marketing, merchandising, and finance. Thus, the

theoretical foundation of academic disciplines will be interdisciplinary and the application of knowledge within the constructs of each scientific discipline used in the development of a process or processes may be either intra- or interdisciplinary in nature. Proposed theories from academic disciplines must build upon these concepts (Borg & Gall, 1989; Rowley, 1994).

In addition, as knowledge has expanded and been segregated by name into categories, a few disciplines have emerged as tools for the evaluation of knowledge and the advancement of scientific and academic disciplines. These interdisciplines transcend disciplinary boundaries and are therefore referred to as transdisciplines. Examples include statistics and the field of evaluation (Scriven, 1994).

The academic discipline of education applies knowledge from scientific disciplines found in all four of the arts and science theoretical domains. Educational research, a subspecialty within the academic discipline of education, was mainly nourished by the scientific discipline of psychology, but it developed largely by borrowing from all of the social sciences' wide array of theories and modes of inquiry, both empirical analytic and interpretive (Borg & Gall, 1989; Rowley, 1994). As a result of educational research's interdisciplinary nature, research methodologies stemming from this discipline, such as survey research mailed questionnaires, must necessarily have an interdisciplinary foundation.

The Nature of Survey Research

Survey research is one of the most widely used data collection methodologies in the social science disciplines. It accounts for a substantial proportion of the research done to collect information relevant to interests and problems in the social science domain. Survey research can be used to describe, explain, or explore phenomena and is undertaken for the purpose of understanding the total population, including facts, attitudes, knowledge, and behavior patterns (Leavitt, 1994).

A wide range of problems can be investigated through survey research. The simplest use to which survey data can be put is a description of how the total sample has distributed itself on the response alternatives for a single response item. If proper sampling procedures are employed, a researcher is able to generalize descriptive findings from the sample to the population from which it came.

Surveys are popular as a research method because they are comparatively inexpensive, and easy to design, implement, and interpret. They require no elaborate equipment and can study larger samples of the population than most other designs of research. Sometimes, however, survey research is held in low esteem because surveys are primarily limited to descriptive analysis and are generally not part of a comprehensive scientific program to learn why and how phenomena occur.

There are three general methods of data collection in survey research: self-administered written questionnaires, face-to-face personal interviews, and telephone interviews (Borg & Gall, 1989). All three rely on self-reporting, therefore making the collected data particularly susceptible to response bias. For example, socially desired behaviors are usually overreported and socially undesirable behaviors are underreported. Surveys also must contend with the fallibility of memory. In addition, information obtained from a survey can be difficult to verify (Jones, 1985; Leavitt, 1994; Leedy, 1993).

The Nature of Mailed Questionnaires in Survey Research

The commonplace research instrument for obtaining data beyond the physical, auditory, or visual reach of the observer is the self-administered mailed questionnaire survey. Mailed surveys represent the most common means of distributing questionnaires. The mailed questionnaire has replaced the personal interview as the most frequently used survey method (Shaughnessey & Zechmeister, 1994).

When using a mailed questionnaire as a tool in survey research, several practical guidelines need to be employed throughout the process of defining objectives, selecting a sample, constructing and pretesting the questionnaire, composing the letter of transmittal, and mailing out the questionnaire (Shaughnessey & Zechmeister, 1994). Specific guidelines for

the mailed questionnaire process can be found in college textbooks on educational research. In general, the questionnaire should not make unreasonable demands on the respondent, it should be clear and straightforward, and should be presented in an attractive, professional format.

The use of mailed questionnaires as a method of data collection has several advantages. They allow the researcher to survey a broad geographic area, often a need when obtaining a representative sample of a population. For the researcher, data can be collected quickly, because mailed questionnaires are self-administered. Mailed questionnaires are relatively inexpensive, even with increased mail costs, and if anonymity is guaranteed and preserved, respondents are generally more willing to be truthful in a written questionnaire as compared to other methods of survey research (Salkind, 1994).

Unfortunately, there are also disadvantages to mail surveys, and the mailed questionnaire, as a form of gathering information, has long been criticized in the survey research arena. The predominant, sometimes overwhelming problem with mail surveys is the lurking possibility of response bias, whenever response rates are low. Indeed, the major factor leading to response bias is the generally low response rate achieved in a mailed questionnaire sampling. A low response rate fails to ensure that the

expressed opinions of the obtained sample are representative of the entire population.

A typical return rate for a mailed survey is around 30%, especially in surveys of the general public. A 50% response is considered adequate, and a 70% response very good, by some commentators (Leedy, 1993). A 70% response, however, is not representative of the 30% subgroup that did not respond. Low response rates can be discriminatory of those who lack interest in the research topic, those who are extremely busy, those with cultural differences from the norm of the sample, those with low educational backgrounds or literacy problems, or those who may have vision problems or small hand psychomotor impairment (Leedy, 1993; Shaughnessey & Zechmeister, 1994).

Despite its generally bad reputation for low response, there is no shortage of research using mail questionnaires. Social scientists depend heavily on mailed surveys for a large portion of their research (Dillman, 1978). However, many researchers maintain that with careful planning and sound methodology, mailed questionnaires can be a viable research tool (Borg & Gall, 1989; Shaughnessey & Zechmeister, 1994).

The Interdisciplinary Nature of Mailed Questionnaire Constructs

Understanding that educational research--as a subspecialty from the academic field of education and the scientific discipline of psychology--is

the application of knowledge from the theoretical foundations of both the arts and science disciplines aids in comprehending its interdisciplinary nature. From this, it can also be deductively reasoned that the multiscientific and academic constructs that constitute the theoretical foundation of the mailed questionnaire process will likewise be interdisciplinary.

The mailed questionnaire process is composed of many axioms, each flowing from underlying constructs. A construct is a nonobservable component of an observable behavior or procedure. A construct is a statement used to describe events that share similar elements. When linked together, constructs define the components of a principle or process. A construct can either be defined constitutively, by referring to other constructs, or operationally, by specifying the activities used to measure or manipulate other variables (Borg & Gall, 1989).

Originally, a draft account of the constructs of the mailed questionnaire process was formulated by placing like concepts together and describing the relationship among components and concepts. Then, concept groupings were characterized together in a construct statement. Constructs were subsequently assigned to various scientific disciplines of knowledge. Eventually, all of the concepts of the mailed questionnaire process were categorized in this way.

In associating the constructs of the mailed questionnaire process with the theoretical foundation of a specific scientific discipline, it is important to note that, while constructs can be associated with a particular body of knowledge, no discipline has set boundaries for the knowledge that it encompasses, and constructs by themselves can also be interdisciplinary.

The numerous constructs of the mailed questionnaire process are organized in Table 1 according to the corresponding theoretical foundation of their scientific discipline. An accounting of the interdisciplinary nature of the constructs in the mailed questionnaire process establishes a foundation for the construction of the proposed theoretical framework. A theoretical framework that separates the constructs by various scientific divisions emphasizes the microprocesses underlying the mailed questionnaire process.

Table 1

Constructs Required in the Construction and Administration of the Mailed Questionnaire

Section 1A

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Natural Sciences

Biological Sciences		
Constructs	Explanation or Definition	References
Assess the needs of physically or mentally challenged respondents - eyesight, memory, and small psychomotor skills	Problems with vision, particularly among the elderly, may exclude those who cannot read small questionnaire print. Increase print font size.	Shaughnessey & Zechmeister, 1994
	Recall questions put demands on memory. Where feasible provide an exhaustive lists of answer choices.	Leavitt, 1994
	Individuals with impaired hand psychomotor skills may have difficulties using a writing utensil.	
Mathematical Sciences		
Constructs	Explanation or Definition	References
Statistical evaluation of questionnaire - reliability and validity	Ascertain that components measured by each question of the questionnaire are sufficient to answer the research question(s).	Leavitt, 1994
	Many instruments for measuring attitude have been standardized, published, and evaluated. Use measurements with high reliability and validity.	
Sampling techniques	Define the population you want surveyed and employ proper sampling techniques.	Leavitt, 1994; Jones, 1985
	Decide confidence levels and how much sampling error you are willing to tolerate. Compute sample size accordingly.	
Computer technology implemented	Employ available methods of computer technology, from desktop publishing to statistical analysis.	Salkind, 1994
Identification of data analysis techniques	Statistical methods of analysis should be planned along with the questionnaire design so that the survey's power to yield generalizable, conclusive results is optimized.	Borg & Gall, 1989
Questionnaire items and pages numbered	All questions and pages should be clearly numbered. Do not use cumbersome number combinations such as 1.2.	Leavitt, 1994; Salkind, 1994
Responses precoded	Design a questionnaire that is easy to score. Precode answers to closed questions.	Leavitt, 1994; Salkind, 1994

(table continues)

Section 1B

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Social Sciences

History

Constructs	Explanation or Definition	References
Established outcomes of previous research on the topic	Evaluate the accuracy and worth of the statements contained in previous research on the research topic. Also evaluate the person who wrote them. Determine what the accumulation of research findings on the research topic should have on the questionnaire's construction.	Borg & Gall, 1989
Established outcomes of previously used methodology	Evaluate the accuracy and worth of the statements contained in previous research on the mailed questionnaires process. Also evaluate the person who wrote them. Determine what the accumulation of research findings has had and should have on the practice of mailed questionnaire research.	Borg & Gall, 1989

Geography

Constructs	Explanation or Definition	References
Population composition and size	Define the population to be surveyed. In employing proper sampling techniques, you want to be able to make inferences about the population as a whole based on what you find to be true of the sample.	Leavitt, 1994; Jones, 1985
Geographics of the sample	Because the questionnaire will be mailed, you can survey a broad geographic area. However, the broader the geographics of the sample, generally the lower the response rate.	Salkind, 1994

Political Science

Constructs	Explanation or Definition	References
Political importance of the topic	A cover letter that establishes the political importance of the topic can be valuable.	Borg & Gall, 1989
Sponsorship - letterhead, signature, gender	Letterhead that establishes the research as being backed by the authority of an important institution or individual is valuable. A cover letter that is signed by someone of importance whom the respondent identifies with in some way, rather than a graduate researcher can make an important difference to higher than usual response rates Past research indicates that a male signature may improve response rates	Salkind, 1994; Shaughnessey & Zechmeister, 1994
Establish credibility	In the letter of transmittal, establish the credibility of the sponsor, the researcher and the research topic.	Borg & Gall, 1989

(table continues)

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Social Sciences

Psychology

Constructs	Explanation or Definition	References
Eliminate threat	Some questions or topics may be threatening to respondents whether about behaviors generally perceived or socially desirable or undesirable.	Leavitt, 1994; Shaughnessey & Zechmeister, 1994
	Open questions are better than closed questions for threatening material, this is especially true when asking about frequency.	
	Lengthening the questions with an explanatory clause can sometimes help to eliminate threat.	
	Start a questionnaire with nonthreatening questions.	
Anonymity and confidentiality	Assure the respondent of how confidentiality and anonymity will be preserved.	Salkind, 1994; Shaughnessey & Zechmeister, 1994
	Respondents may be more truthful if anonymity is guaranteed.	
Personalization	Personal touch factors such as personalized addresses and salutations in the cover letter contribute to higher than usual response rates.	Salkind, 1994; Shaughnessey & Zechmeister, 1994
Type of appeal	The type of appeal made to the respondent in the letter of transmittal has been shown to influence response. Types of appeal include egotistic (self-interest) appeals, altruistic (welfare of others) appeals, and scientific (knowledge) appeals.	Worthen & Summers, 1984
Type of postage	The type of postage used has influenced response rates. Commemorative stamps, special delivery, certified mail, stamped and first class mail may be seen as more important than third class or bulk mail.	Worthen & Summers, 1984
Expressed value of the response or the respondent	In appreciation for the respondents investment of time, express appreciation for their efforts.	Leavitt, 1994 Leedy, 1993
	Assure that the demands being made of the respondent are reasonable.	
	Offer to send the respondent a summary of the results of the study, if so desired, for their courtesy in replying and returning the questionnaire.	

(table continues)

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Social Sciences

Sociology		
Constructs	**Explanation or Definition**	**References**
The social desirability of the research topic and objectives	Take into account the social desirability of the research topic and questions. The respondent will weigh factors such as the sensitivity of the question, the social desirability of the answer, the probable accuracy of the answer and then decide what answer to provide.	Leedy, 1994; Salkind, 1994
Establish interest, relevance, and salience	A respondent's intrinsic interest and belief in the importance of the topic and in the individual questions on the questionnaire will contribute to higher than usual response rates.	Salkind, 1994; Shaughnessey & Zechmeister, 1994
Response bias controlled where possible	Understanding the nature of social behavior, implement strategies that check response bias. When respondents identify personal association with names of items or persons in a questionnaire, they will likely overstate their familiarity. Estimate the extent of the overstatement by adding fictitious but plausible sounding names to the list. The percent by which fictitious names are picked is generally the percent by which they are overestimated. When questions have a numerical answer, do not list alternatives, make such questions open ended. Items appearing first on a list receive more favorable comments. Rotate and justify responses. Write questions assessing knowledge before questions assessing attitudes. This will screen out respondents who know little about the topic.	Leavitt, 1994

Economics - Manufacturing		
Constructs	**Explanation or Definition**	**References**
Produce, print, and assemble the questionnaire, letter of transmittal, and follow-up.	The manufacturing of the written materials needed in the mailed questionnaire process.	Borg & Gall, 1989

(table continues)

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Social Sciences

Economics - Marketing

Constructs	Explanation or Definition	References
Approval to administer questionnaire to sample	Some samples require prior approval from an administrative authority before distribution of the questionnaire.	Borg & Gall, 1989
Determine place of reception	Determine whether questionnaire will be mailed to respondents home or place of employment.	Worthen & Summers, 1984
Provide a method of returning the questionnaire	The respondent is provided the means necessary for returning the questionnaire.	Borg & Gall, 1989
Mail the questionnaire	Distribute the questionnaire.	Borg & Gall, 1989
Mail the follow-up	Determine nonrespondents. Distribute follow-up materials.	Borg & Gall, 1989

Economics - Financial Management

Constructs	Explanation or Definition	References
Researcher's cost to produce, mail, and have the questionnaire returned	The researcher's financial commitment to produce the questionnaire. The researcher's financial commitment to mail the questionnaire. A postage paid return envelope is included along with the questionnaire.	Leedy, 1993; Shaughnessey & Zechmeister, 1994
Monetary or gift incentives to induce response	Enclosed monetary or gift incentives have proven valuable in increasing response rates.	Worthen & Summers, 1984; Borg & Gall, 1989
Return postage and an envelope are provided the respondent	To expect the respondent to pay the postage for the researcher to get the needed data is unreasonable.	Borg & Gall, 1989

(table continues)

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Social Sciences

Economics - Temporal Management		
Constructs	Explanation or Definition	References
Simplicity of instructions	Simple instructions require little effort on the part of the respondent.	Borg & Gall, 1989
Ease of response	The questionnaire is easy to respond to. It demands little effort on the part of the respondent.	Shaughnessey & Zechmeister, 1994; Leedy, 1993
	Instructions detailing how the questionnaire should be returned are included. A preaddressed stamped envelope and a phone number to call for more information or clarification is also sent.	Salkind, 1994; Leedy, 1993
Place of reception	Assess the impact place of reception will have upon response. Determine if questionnaire should be sent to the work place, school, or home.	Leavitt, 1994
Follow-up as a reminder - Second questionnaire sent	Follow-up letters as a reminder to nonrespondents are sent. Because it is possible that the original copy of the questionnaire may be lost, a second copy of the questionnaire is sent with the follow-up mailing.	Leavitt, 1994; Shaughnessey & Zechmeister, 1994
Assessing temporal immediacy	Assess how immediately important it would be for respondent to return the questionnaire in light of other temporal constraints.	

Economics - Time Management		
Constructs	Explanation or Definition	References
Prenotification to respondents	The sample is contacted and committed to participating prior to mailing them a questionnaire, thus committing them to allocate time to respond to the questionnaire when it arrives in the mail.	Leavitt, 1994
Response deadline stated in letter of transmittal	The respondent is given a deadline for returning the questionnaire.	Leavitt, 1994
Completion time projected in letter of transmittal	The letter of transmittal realistically projects the time required to complete the questionnaire.	Worthen & Summers, 1984; Borg & Gall, 1989
Speed of response - length of questionnaire, question format	The questionnaire is designed as brief as possible, so that demands on the respondents' time to complete it is reasonable.	Leavitt, 1994; Salkind, 1994; Leedy, 1993
	Because of the time factor involved in replying, closed-item questions are preferred to open-response questions that require an extended answer.	
Assessing time immediacy	Assess how immediately important it would be for respondent to return the questionnaire in light of other time constraints.	

(table continues)

Section 1C

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Humanities/Fine Arts

Linguistics - Composition

Constructs	Explanation or Definition	References
Questionnaire content	Analysis of the concepts involved in a research question should be the first step in determining the content of a questionnaire.	Leavitt, 1994
Questionnaire construction	Formulate specific questions to measure the concepts.	Leavitt, 1994; Salkind, 1994
	Use several kinds of questions. Vary their length.	
	Use correct grammatical format on all questions.	
	Use transitions from one topic to the next.	
Logical sequencing of questions	Introduce topics with general questions then move to specifics.	Leavitt, 1994; Salkind, 1994
	Keep all questions on a single topic together.	
	Start with nonthreatening questions likely to interest respondents.	
	Order questions from easy to difficult and general to intense.	
Preparation of letter of transmittal	The initial mailing should include a letter of transmittal summarizing the purpose and importance of the survey and explaining the basis on which the respondents were selected.	Leavitt, 1994; Salkind, 1994; Shaughnessey & Zechmeister, 1994
Preparation of follow-up materials	Follow-up materials will need to be constructed if a high response rate is not received from the first mailing.	Borg & Gall, 1989

(table continues)

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Humanities/Fine Arts

Linguistics - Comprehension

Constructs	Explanation or Definition	References
Systematic literature analysis	The application of the historical literature review should influence the construction of the questionnaire.	Leavitt, 1994
Respondents' educational backgrounds are assessed	An assessment of educational background should influence the type of questions asked. Do not ask questions of respondents that they would know nothing about. Mail questionnaires exclude respondents with literacy problems and are generally intimidating to those with low educational backgrounds. Respondents may worry about appearing ignorant. Include the phrase "I don't know" among the possible acceptable answers.	Leavitt, 1994; Shaughnessey & Zechmeister, 1994
Letter of transmittal, instructions and questionnaire clarity assured	The questionnaire must be completely self-explanatory because respondent will not be able to ask questions if the language is unclear. Technical terms are defined. Ask questions in a straightforward manner. Be sure that questions can be answered. Be sure that questions only measure one attitude. Examples are included in the instructions as guidelines for answering. There are clear and explicit instructions on how and when the questionnaire should be returned.	Leavitt, 1994; Salkind, 1994; Shaughnessey & Zechmeister, 1994; Leedy, 1993
Pilot test the questionnaire	Always pretest the questionnaire on people similar to those who will be in the final sample. Have them assist in rewriting or discarding items subject to misinterpretation.	Leavitt, 1994; Leedy, 1993

(table continues)

An Explanation of the Constructs for the Construction and Administration of the Mailed Questionnaire in the Humanities/Fine Arts

Philosophy		
Constructs	**Explanation or Definition**	**References**
Survey research knowledge and research process are conceptualized	Researcher recognizes the strengths and weaknesses of survey research mailed questionnaires and weighs that in the decision to choose it as a method of data collection. Researcher also understands the research process and focuses on it in carrying out the fundamentals of the project.	Borg & Gall, 1989
Research objectives and hypotheses are formulated	The research questions and hypotheses should influence the type of questions the survey answers.	Borg & Gall, 1989
Questionnaire content consistent with objectives and hypotheses	Write the questionnaire with the research objectives and hypotheses in mind.	Leedy, 1993
Avoidance of deliberate bias or distortion	Questions should not lead the respondent in a particular direction or to a particular answer.	Salkind, 1994
Researcher recognizes nonresponse will exist	No one can or should be coerced into responding to a survey or questionnaire. The chance that some will not respond, particularly in a large sample, does exist.	Jones, 1985

Design		
Constructs	**Explanation or Definition**	**References**
Questionnaire format and appearance Size Color Print style Layout format	The principles and elements of design are implemented in the questionnaire design process; including scale and proportion, balance, emphasis, unity, line, color, and space. The questionnaire should be presented in an attractive, professional, easy-to-understand format. A questionnaire should be easy to read. It should be clearly and neatly printed. Color can be a strong component in the initial impression of a questionnaire. Adequate margins give the impression of uncluttered ease. Space should be left between questions. The areas for response should be adequate and clearly indicated.	Leavitt, 1994 Salkind, 1994; Leedy, 1993; Jones, 1985

CHAPTER IV

AN INTERDISCIPLINARY THEORETICAL FRAMEWORK FOR THE MAILED QUESTIONNAIRE PROCESS

Before a theory on mailed questionnaire response rates can be proposed, a framework for the theory must be established. Developing a framework that is a simplification of the factual relationships of mailed questionnaire constructs and how they interact with each other was undertaken to bind together loose ends and establish an infrastructure that sets parameters for understanding, measuring, and controlling the constructs that contribute to the costs and benefits of mailed questionnaire response. Baumol and Blinder (1988) stated that a theoretical framework provides a logical structure for organizing and analyzing constructs. Without a framework, we "stare stupidly" (p. 13) at the multitude of constructs that comprise a process. With a framework we can attempt to refine the process.

In creating a theoretical framework for the mailed questionnaire process, the following advice by James N. Rosenau (as cited in Viotti & Kauppi, 1987) has proven to be valuable. He makes the following points about thinking theoretically:

To Think Theoretically:

> . . . one must be able to assume that human affairs are founded on an underlying order.

> . . . one must be ready to appreciate and accept the need to sacrifice detailed descriptions for broad observations.
>
> . . . one must be tolerant of ambiguity, concerned about probabilities, and distrustful of absolutes.
>
> . . . one must be constantly ready to be proven wrong.
>
> . . . one must be predisposed to asking about every event, every situation, or every observed phenomenon. (p. 3)

First, when Rosenau speaks of underlying order, he is referring to the underlying abstraction that human affairs are founded on order or the theories and analyses that provide an explanation and an understanding of observed phenomena. Therefore, the proposed framework must be based on the order behind knowledge or the theoretical foundations of knowledge. Second, there must be a willing sacrifice of specifics of the information that has accumulated on the mailed questionnaire process in order to see the issues of response in a broader perspective and to think critically about them. Third, there must be a willing temporary suspension of judgement about the specific categorization of constructs in the mailed questionnaire process to specific scientific disciplines of knowledge, as set forth in the framework, in order to provide the opportunity to look into basic assumptions, to identify the possible claims and warrants others have made about mailed questionnaire response, and to evaluate their reasoning, in order to draw appropriate conclusions about response. The "temporary suspension of judgement" called for is necessary, in order to take the time required to question (Stokes, 1990). As Francis Bacon wrote, we should

"read not to contradict and confute, nor to believe and take for granted, . . . but to weigh and consider" (as cited in Kahane, 1984, p. 3).

Finally, the act of questioning is an integral part of obtaining a thorough understanding of the motivation required for response, by respondents, in the mailed questionnaire process. The perplexities of the response process that have finally caused research scholars to question whether they should continue down the path that the mailed questionnaire research process has pursued over the last three decades take on added value in light of David Gerrold's saying, that "Half of being smart is knowing what you're dumb at" (as cited in Kahane, 1984, p. 47). If critical questions and open minds rigorously search for an answer to the low response rate often obtained in mailed questionnaire surveys, knowledge will be gained. When the questioning is done within a theoretical framework, the framework will add direction to the inquisition (Stokes, 1990).

Sabine and Thorson's (1973) evaluation of the first political theorist, Plato, and of his first theory, that of the state, also demonstrates the need for the close fit that a theoretical framework will contribute to the theory development process. They commented that

> the theory of the state is developed in a closely concatenated line of thought which is both unified and simple. Indeed it is necessary to insist that this theory is far too much dominated by a single idea . . . . The fundamental idea of the Republic came to Plato in the form of his master's doctrine that virtue is knowledge . . . . But the proposition that virtue is

> knowledge implies that there is an objective good to be known and that it can in fact be known by rational or logical investigation . . . . The whole analysis reinforces the initial conception . . . . (pp. 52-54)

To think theoretically, in order to develop a theory about the mailed questionnaire process, issues must be recognized that have to do with the mailed questionnaire processes in their full manifestation, including relevant arguments and supporting evidence. Therefore, it follows that an interdisciplinary theoretical framework that organizes the constructs of the mailed questionnaire process will be a valuable tool in achieving this end (Stokes, 1990). The interdisciplinary theoretical framework proposed in this dissertation is essential for understanding the phenomena of the entire mailed questionnaire process, for thinking about the interrelatedness of its constructs, for guiding future research, and for recommending sound methodological action (Dougherty & Pfaltzgraff, 1990).

A Theoretical Framework Promotes Critical Thinking

How can a theoretical framework be used to promote critical thinking about the mailed questionnaire process? Critical thinking is not a skill that can be learned, tested, and transferred without the spectra of knowledge provided by a scientific discipline (Paul, Binker, Adamson, & Martin, 1989). Critical thinking cannot occur within a vacuum. It has to take place within a body of knowledge or one will be thinking about nothing. A body of

knowledge provides the limits for logic because each field of inquiry has its own particular epistemology (McPeck, 1981). In constructing an interdisciplinary theoretical framework for the mailed questionnaire process, the constructs of the process must tie to respective scientific disciplines of knowledge. A theoretical foundation in which to view the contribution that each construct makes to the whole must be established. The scientific discipline to which each construct is linked, then, provides the limits for logically discovering the various determinants of response (Stokes, 1990).

A theoretical framework provides the foundation for probing deeply into the constructs of mailed questionnaire response. It provides the foundation for the ability to question and to probe deeply, to get down to root ideas, to get beneath the mere appearance of things, and to get to the very heart of the process (Stokes, 1990). A theoretical framework according to Stokes sets the stage for "Socratical Questioning" and Socratical Questioning is essential to critical thinking. According to Paul et al. (1989), Socratical Questioning (a) raises basic issues, (b) probes beneath the surface of things, (c) pursues problematic areas of thought, (d) helps [researchers] to discover the structure of their own thoughts, (e) helps [researchers] to develop sensitivity to clarity, accuracy, and relevance, (f) helps [researchers] arrive at judgments through their own reasoning, and (g) helps [researchers] note claims, evidence, conclusions,

questions-at-issue, assumptions, implications, consequences, concepts, interpretations, and points of view: the elements of thought.

Paul et al. (1989) have also suggested that Socratical Questioning leads to three kinds of Socratical Discussions, which are (a) spontaneous or unplanned, (b) exploratory, and (c) issue specific. The conceptualization of a theory can develop from any of these three types of discussions (Stokes, 1990).

Determinants of Response Costs

In developing a viable theory on mailed questionnaire response, the major constructs of the theory must be based on the determinants of response costs in the mailed questionnaire process. The determinants of response costs are the variables that determine why and how particular constructs in the mailed questionnaire process influence the decision to complete and return a mailed questionnaire. An inquiry of, "What did it cost the respondent to return the questionnaire?" is one of the most slippery questions to answer in the response process. Determining all the costs of response can be very complicated. Even calculating the costs of one particular variable can be difficult because other variables can impact upon the one being measured.

The costs of response are determined, in large part, by the theoretical foundations of a scientific discipline of knowledge. Within a

scientific discipline of knowledge there will be both direct and indirect costs to response. The direct costs will be those that are determined by the constructs of the mailed questionnaire process. The indirect costs are determined by other intervening variables in a respondent's private or personal realm that are related to a particular scientific discipline of the response process, but not necessarily related to the questionnaire's constructs (Anthony & Young, 1984). The indirect costs of response may not only remain unknown to the survey researcher, but they could also be different on any given day and at any given time.

In the mailed questionnaire process, the constructs involved in the construction and administration of the questionnaire are controlled by the researcher and measured by the direct determinants of response costs, while the constructs related to the completion and return of the questionnaire are set by the respondent and influenced mainly by the indirect determinants of response costs. The analyses of the questionnaire data are regulated by the outcome of the completion and return process.

For example, the constructs of the actual process of reading and marking the answers on a mailed questionnaire survey are listed in the interdisciplinary theoretical framework under the scientific discipline of "economic manufacturing" and are determined by the "opportunity costs of response." The researcher can control the direct costs of response by making the questionnaire easy to read and easy to complete and then

assess if the goals were achieved and the response costs minimized. However, the indirect costs of response of "What opportunity did the respondent give up to actually read and complete the questionnaire?" is very difficult to analyze, but it likely will be a significant factor in the decision to respond.

A respondent's personal background or circumstances can also impact significantly upon both the direct and indirect determinants of response costs. For example, a respondent's professional expertise in the field of fine arts may correlate significantly with the direct determinants of response costs associated with the scientific discipline of design and how the questionnaire's aesthetic stimulus is weighed by an expert in the field, particularly when compared to a respondent who has had little exposure to good design.

Subsequently, the indirect determinants of response costs can also influence response. The indirect costs measured by the immediacy restraints or the urgency of economic, temporal, and time management in a respondent's life--created by the pressure for a respondent to complete a long-term demanding project that is unrelated to the questionnaire just received in the mail--may impact significantly upon the decision of whether or not to complete and return a questionnaire. In addition, indirect determinants of response costs will generally not be known by the researcher and, therefore, are not controllable by the researcher.

The determinants of response costs resulting from the direct application of mailed questionnaire constructs to a scientific discipline of knowledge and the impeding indirect determinants of response costs will impact upon the reply process in numerous ways and to varying degrees. It is assumed, however, that some response costs will be more significant in the overall response rate achieved from a mailed questionnaire, and the researcher who strives to control the direct determinants of response costs will achieve a higher return rate of completed questionnaires from their surveyed sample.

By examining the determinants of response costs more closely, rather than simply touching those costs by experimenting with the response inducement constructs of the mailed questionnaire process, researchers will be advanced in the objective of significantly increasing overall response rates. The determinants of mailed questionnaire response costs are outlined and highlighted in the interdisciplinary theoretical framework presented in tabular format later in this chapter.

The Psychological Impact of Mailed Questionnaire Constructs

As the constructs of the mailed questionnaire process are assigned to various scientific disciplines of knowledge in the interdisciplinary theoretical framework, it is important to note that most of the constructs

have some theoretical psychological implication and foundation. What is being analyzed in the mailed questionnaire process is the behavioral motivation of a respondent to return a mailed questionnaire. The theoretical foundations of behavioral motivation are formulated within the scientific discipline of psychology. It is important to note, however, that in order to determine response costs appropriately, it is critical that constructs that contain some psychological implications not be assigned to the scientific discipline of psychology. Rather, they should remain in their scientific discipline of origin, as can be illustrated by the following example.

In the interdisciplinary theoretical framework that is presented herein, the construct of offering a monetary incentive to enhance response has been assigned to the scientific discipline of economics and the specialization of financial management. It could be argued that, when a monetary incentive is offered to a respondent to motivate him or her to complete and return a survey, the behavior motivation to return the questionnaire is generated by the psychological impact of having received the money and not from the economic financial impact created by the small sum of money that is generally offered as a reward to a potential respondent. The construct of offering a monetary incentive to enhance response, therefore, should be assigned to the scientific discipline of psychology. However, the categorization of constructs in the mailed questionnaire process should not be viewed in such a singular manner.

The constructs of the mailed questionnaire process must also be evaluated in light of the determinants of response costs that evolve from the theoretical foundations of each scientific discipline. Although the small amount of money generally offered to a respondent to complete a mailed questionnaire does not represent an economic profit for the respondent, the psychological behavior motivation to respond to the questionnaire is still economically based. The money is offered as an award, reward, or compensation for effort expended. The motivation and commitment to complete and respond to the questionnaire, created by a financial reward is the same type of emotion, only to a lesser degree, that is created by other economic outcomes. If the construct of monetary incentives were assigned to the scientific discipline of psychology, the determinants of response costs, as outlined in the framework, would suggest that a respondent returns a questionnaire because money itself is salient or important, not because money has been offered as a reward for filling out the questionnaire.

Additionally, another example of the problems associated with the psychological categorization of mailed questionnaire constructs is illustrated in the psychological impact created by the color of a questionnaire. A voluminous amount of research describes the psychological and physiological effects that color can have on an individual. Color, however, as one of the eight elements of design is a tool that is used to create or

enhance a principle of design. The principles of design must be followed in order to develop good design. When color, as an element of design, is used in the questionnaire process, it creates an emotion that is linked to the aesthetics of design and the other constructs of the fine arts scientific discipline.

To assign color to the scientific discipline of psychology or biology rather than fine arts, the determinants of response costs of these two disciplines, as outlined in the proposed interdisciplinary theoretical framework, would suggest that the specific color of the questionnaire paper was a salient or important color to the respondent or that the color of the questionnaire had a biological or physiological effect upon the respondent. When the construct of questionnaire color is assigned, however, to the scientific discipline of design, the categorization suggests that the blue questionnaire is returned to the researcher because the respondent's aesthetic stimulus was peaked or enhanced as a result of the questionnaire's color (Allen & Stimpson, 1994).

It will prove valuable, therefore, in the proposed interdisciplinary theoretical framework to associate the constructs of the mailed questionnaire response rate process with the theoretical foundation of the scientific disciplines from which each construct is formulated. A researcher must not base the construct assignment upon the psychological underpinnings of behavior motivation (Ott, 1989).

The Interdisciplinary Theoretical Framework Format

The construct components of the mail questionnaire process, once categorized by a scientific discipline's theoretical foundation, can also be divided into three fundamental areas: (a) the construction and administration of the questionnaire, (b) the completion and returning of the questionnaire, and (c) the analyses of the questionnaire data. When the interdisciplinary theoretical perspective and the process and constructs of mailed questionnaires are integrated together, they will form the foundation of an interdisciplinary theoretical framework.

The interdisciplinary theoretical framework presented in Table 2 is set in a matrix format. As a graphic organizer, the matrix visually diagrams how questionnaire constructs relate to each other and to the whole. A matrix makes the relationship between constructs more explicit (Kiewra, DuBois, Christian, & McShane, 1988). A matrix enhances the relationship of constructs both across and within a given topic (Kiewra et al., 1989). Theoretically, the matrix structure should facilitate the building of internal connections in the mailed questionnaire process and establish the groundwork for the critical thinking required for the development of a viable theory (Mayer, 1984).

In Table 2, the physical and behavioral events of the questionnaire process, along with the researcher controlled events and the respondent

Table 2

An Interdisciplinary Theoretical Framework for the Mailed Questionnaire Process

Overview of the Interdisciplinary Theoretical Framework				
Theoretical Foundation:	Natural Sciences	Social Sciences		Humanities/ Fine Arts
Scientific Disciplines:	Physical Biological Mathematical	History Psychology Sociology	Economics (manufacturing) (marketing) (management)	Linguistics Philosophy Design
Constructual Framework for the Application of Knowledge:	Physical Composition Genetic Basis Physiological Basis Statistical Analysis Artificial Intelligence	Historical Geographical Political Psychological Social	Production Distribution Financial Management Temporal Management Time Management	Composition Comprehension Epistemology Metaphysics Logic Aesthetics
Construction and Administration of the Questionnaire: (Researcher Controlled)				
Completion of the Questionnaire: (Respondent Determined)				
Determinants of Response Costs:				
Analysis of the Questionnaire: (Outcome Regulated)				
The Results:	Application of Science and Technology	Prescription/Prevention of Psycho/Socio Needs	Economic Impact Upon Resources	Ability to Communicate

(table continues)

Interdisciplinary Theoretical Framework in the Natural Sciences for the Mailed Questionnaire Process

Theory Base:	Natural Sciences		
Disciplines:	Physical Sciences	Biological Sciences	Mathematical Sciences
Constructual Framework for the Application of Knowledge:	The Physical Composition	The Genetic or Physiological Basis	The Statistical Analysis and Use of Artificial Intelligence
Construction and Administration of the Questionnaire: (Researcher Controlled)	--	Assess the needs of physically or mentally challenged respondents--eyesight, memory and small psychomotor skills	Statistical evaluation of questionnaire-- Reliability and validity Sampling techniques Computer technology implemented Identification of data analysis techniques Questionnaire items and pages numbered Responses precoded
Completion of the Questionnaire: (Respondent Determined)	--	Ability to see printing, use writing utensil, or recall knowledge General health and well-being	Correct and thorough marking of responses
Determinants of Response Costs	--	Physiological Barriers of Response	Accuracy of Response
Analysis of the Questionnaire: (Outcome Regulated)	--	--	The coding and recording of data The handling of missing data Statistical analysis and interpretation
The Result:	The Application of Science and Technology to the Questionnaire Process		

(table continues to the right ⇒)

Interdisciplinary Theoretical Framework in the Social Sciences for the Mailed Questionnaire Process - Part I

Theory Base:	Social Sciences				
Disciplines:	History	Geography	Political Science	Psychology	Sociology
Constructual Framework for the Application of Knowledge:	The Historical Foundation	The Geographical Distribution	The Political Importance	The Psychological Impact	The Sociological Nature
Construction and Administration of the Questionnaire: (Researcher Controlled)	Established outcomes of previous research on the topic Established outcomes of previously used methodology	Population composition and size Geographics of the sample	Political importance of the topic Sponsorship--letterhead, signature, and gender Establish credibility	Eliminate threat Anonymity and confidentiality Personalization Type of appeal or postage Expressed value of the response or the respondent	The social desirability of the research topic and objectives Establish interest, relevance, and salience Response bias controlled where possible
Completion of the Questionnaire: (Respondent Determined)	Past experience with the topic, questionnaires, sponsor, or researcher	Geographic proximity to the topic (if an institution), sponsor, or researcher	Topic, sponsor, or researcher's political salience	Response/respondent valued Trust ensured Topic, questionnaire, sponsor or researcher's psychological salience	Topic, questionnaire, sponsor, or researcher's sociological relevance and salience Methodology evaluated
Determinants of Response Costs:	Known Benefits or Costs of Response	Salience of Proximity in Response		Perceived Salience of Response	
Analysis of the Questionnaire: (Outcome Regulated)	Correlation of findings with previous research	Geographic impact upon response	Public policy impact	Feedback provided respondents	Response bias examined The application of findings to society
The Result:	The Prescription and Prevention of the Psycho/Socio Needs of the Respondent				

(table continues to the right ⇒)

Interdisciplinary Theoretical Framework in the Social Sciences for the Mailed Questionnaire Process - Part II

Theory Base:	Social Sciences				
Discipline:	Economics				
Constructual Framework for the Application of Knowledge:	Manufacturing	Marketing	Management		
	The Production	The Distribution	Financial	Temporal	Time
Construction and Administration of the Questionnaire: (Researcher Controlled)	Produce, print, and assemble the questionnaire, letter of transmittal, and follow-up	Approval to administer questionnaire to sample Determine place of reception Provide a method for returning the questionnaire Mail the questionnaire Mail the follow-up	Researcher's cost to produce, mail, and have the questionnaire returned Monetary or gift incentives to induce response Return postage and an envelope are provided the respondent	Simplicity of instructions Ease of response Place of reception Follow-up as a reminder--second questionnaire sent Assessing temporal immediacy	Prenotification to respondents Response deadline stated in letter of transmittal Completion time projected in letter of transmittal Speed of response Length of questionnaire Question format Assessing time immediacy
Completion of the Questionnaire: (Respondent Determined)	Filling out the questionnaire Physical burden of response	Mailing the completed questionnaire Physical burden of response	Monetary cost(s) of response, or Incentives (rewards) received for response	Physical burden of response Evaluating Immediacy--temporal constraints	Evaluating Immediacy--freedom from other time constraints
Determinants of Response Costs:	**Opportunity Costs of Response**		**Financial Costs or Rewards of Response**	**Immediacy Restraints Countering Response**	
Analysis of the Questionnaire: (Outcome Regulated)	--	Receipt of completed questionnaires	Finances required for analysis and reporting	Temporal costs of analysis and reporting	Time required for analysis and reporting
The Result:	The Economic Impact Upon Researcher's and Respondent's Resources				

(table continues to the right ⇒)

Interdisciplinary Theoretical Framework in the Humanities and Fine Arts for the Mailed Questionnaire Process

Theory Base:	Humanities			Fine Arts
Discipline:	Linguistics		Philosophy	Design
Constructual Framework for the Application of Knowledge:	The Composition	The Comprehension	Epistemology (Knowledge) Metaphysics (Reality) Logic (Reasoning)	The Aesthetics
Construction and Administration of the Questionnaire: (Researcher Controlled)	Questionnaire content Questionnaire construction Logical sequencing of questions Preparation of letter of transmittal Preparation of follow-up materials	Systematic literature analysis Respondents' educational backgrounds are assessed Letter of transmittal, instructions, and questionnaire clarity assured Pilot test the questionnaire	Survey research knowledge and research process are conceptualized Research objectives and hypotheses are formulated Questionnaire content consistent with objectives and hypotheses Avoidance of deliberate bias or distortion Researcher recognizes that nonresponse will exist	Questionnaire format and appearance Size Color Print style Layout format
Completion of the Questionnaire: (Respondent Determined)	Written response to questions	Respondent skill or knowledge level required for completion	Loyalty to the: research process, researcher, sponsoring institution, research objective(s), etc. Integrity of the response commitment	Visual perception(s) of the questionnaire
Determinants of Response Costs:	**Intellectual Ability to Comprehend and Respond**		**Philosophical Commitment to the Response Process**	**Aesthetic Stimulus Impact on Response**
Analysis of the Questionnaire: (Outcome Regulated)	Written report of the findings	Interpretation of the findings	Response bias analyzed Evaluation and appraisal of the research results	Visual presentation of the findings
The Result:	The Researcher's and Respondent's Ability to Communicate Effectively			

controlled behaviors, are outlined along the vertical axis of the matrix. From these topics, the researcher-controlled events and the respondent-controlled behaviors constitute the rows of the matrix grid. These are juxtaposed against the scientific disciplines of knowledge that contribute the theoretical foundation for the mailed questionnaire process, as proposed in Table 1, and are placed along the horizontal axis of the matrix.

The constructs that formulate the entire mailed questionnaire process, including guidelines, generalizations, hypotheses, and theories, were placed into the appropriate corresponding cells of the matrix. The cells were created from the juxtaposition of scientific disciplines with the mailed questionnaire process. The hypothesized, predictive behavior-motivating variables, or the determinants of response costs that will become the constructs for a proposed theory on mailed questionnaire response rates are also outlined in the framework and highlighted. An explanation of the constructs used in the theoretical framework and the corresponding bibliographic reference(s) were listed in Table 1. The constructs presented in Table 2 are an abbreviation of the constructs and concepts listed in Table 1. In analyzing Table 2, reference to Table 1 is critical for complete understanding until the concepts that formulate the constructs are intuitive.

Once the initial comprehensive mailed questionnaire representation was drafted, it was presented to numerous scholars who helped refine the

model by giving explicit and detailed suggestions as to the construct relationships portrayed in the framework. The product of this process is the refined interdisciplinary theoretical framework presented in Table 2.

Ideally, the proposed interdisciplinary theoretical framework outlined in Table 2 would be illustrated on banner size paper. Due to standard paper size constraints, an overview was given and then each theoretically based discipline of the framework was illustrated and outlined separately.

Validating the Interdisciplinary Theoretical Framework for the Mailed Questionnaire Process

The interdisciplinary theoretical framework has been proposed as a viable foundation for the development of a theory on mailed questionnaire response rates because:

1. It offers an explanation of the physical events of constructing and administering a questionnaire,
2. It offers an explanation of the behavioral events of responding to a questionnaire,
3. It identifies constituted and operational constructs,
4. It operates within the framework of scientific disciplines,
5. It interconnects constructs with each other,
6. It identifies commonalities in otherwise isolated phenomena,

7. It organizes the research findings concerning mailed questionnaire research into a framework,

8. It proposes a framework to enable the researcher to make predictions about how constructs in the mail questionnaire process impact response rates,

9. It identifies areas for further research, and

10. It proposes a framework to allow the researcher to control phenomena that influence mailed questionnaire response rates (Lavee & Dollahite, 1991; Borg & Gall, 1989).

The theoretical framework also illustrates the constructs in the mailed questionnaire process that account for:

1. The application of science and technology to the questionnaire process (constructs from the natural sciences),

2. The prescription and prevention of the psycho/socio needs of the respondent (constructs from the social sciences),

3. The economic impact upon researcher's and respondent's resources (more constructs from the social sciences), and

4. The researcher's and respondent's ability to communicate effectively (constructs from the humanities and the fine arts).

In addition, the proposed theoretical framework identifies, suggests, and sets parameters for measuring and controlling the 13 determinants of

response costs in the mailed questionnaire process by proposing which constructs contribute to:

1. The physiological barriers of response,
2. The accuracy of response,
3. The known benefits of response,
4. The known costs of response,
5. The salience of proximity in response,
6. The perceived salience of response,
7. The opportunity costs of response,
8. The financial rewards of response,
9. The financial costs of response,
10. Immediacy restraints countering response,
11. The intellectual ability to comprehend and respond,
12. The philosophical commitment to the response process, and
13. The aesthetic stimulus impact on the response decision.

With the proposed theoretical framework in place, the objective of clarifying which of the determinants of response costs contribute significantly to mailed questionnaire returns needs to be undertaken. This is done in Chapter V, after the research findings in the literature on mailed questionnaire response rates are synthesized into the theoretical framework. Then, when the significant determinants of response costs are highlighted, the primary objective of developing a viable theory for

predicting respondent behavior in the questionnaire process will be accomplished.

CHAPTER V

A SYNTHESIS OF THE RESEARCH LITERATURE WITH THE INTERDISCIPLINARY THEORETICAL FRAMEWORK

Developing questions about the definitions, issues, assumptions, presumptions, conclusions, inferences, and reasoning that have been established in the research on the mailed questionnaire process is of key importance if a viable theory is to be proposed (Stokes, 1990). The importance of asking the right questions from those who have proposed the answers on the response rate problem is set forth in this quote by Arnhart (1987):

> To support our . . . choices with good reasons and to judge the . . . reasoning of others, we must learn how to reason well about . . . issues: We must do this by going to those who have thought most deeply about . . . [the] matters. Because no one has yet attained absolute . . . wisdom, . . . we cannot expect anyone to give us all the right answers. But at least we might expect [that the] best thinkers . . . [can] give us the right questions. (p. 1)

When we consider questioning the answers that have been generated by the researchers on the mailed questionnaire process, it will prove helpful to rely on the dialectical method developed and prescribed by Socrates through the writings of Plato (Sabine & Thorson, 1973). The purpose of this will be to "clarify the question, to distinguish the major answers, and then to survey and weigh the evidence and arguments" (Arnhart, 1987, p. 3).

The development of the interdisciplinary theoretical framework for the mailed questionnaire process as set forth in Chapter IV now provides an infrastructure for a deductive synthesis of the research literature and allows us to question the research findings dialectically when they are organized according to the theoretical framework. It is hoped that this synthesis will be instrumental in identifying the significant determinants of response costs in the mailed questionnaire process.

Salience: A Determinant of Response Costs

Over 90% of the research on mailed questionnaire response rates revolves around the constructs that deal with the designing and administration of the questionnaire. This is perhaps logical, because as illustrated in the interdisciplinary theoretical framework of Table 2, this is the segment of the mailed questionnaire process over which the researcher has the greatest amount of control. Although there are well over 300 research articles that analyze in some way the use of various inducement techniques on the outcome of mailed questionnaire response rates (Boser & Clark, 1993; Rodgers, 1992), most of the literature provides only fragmented commentary on how, why, or to what degree a specific response inducement technique contributes to a survey's response rate.

One of the valuable insights acquired from a synthesis of the research literature with the interdisciplinary theoretical framework was obtained simply from the insights gained by categorizing the constructs of the mailed questionnaire process. In 1978, Heberlein and Baumgartner found that "salience," along with the "number of contacts" made to a respondent, can account for 51% of the variance in the final response of a mailed questionnaire. A few research scholars have duplicated and validated Heberlein and Baumgartner's findings (Eichner & Habermehl, 1981; Goyder, 1982; Hecht, 1993; Hensley, 1992).

But, what is salience? Why is salience different from the other response inducement techniques in achieving response, and what accounts for salience's significance? What research scholars have failed to do in the years since Heberlein and Baumgartner's (1978) study has been to define what salience is in relationship to the other response inducement constructs that have been tested in the more than 300 experimental studies conducted by the various researchers. A significant insight about salience is achieved by locating where and what salience is on the interdisciplinary theoretical framework.

The theoretical framework illustrates that salience is not a response inducement technique as are the other constructs of response that have been tested by researchers. Salience is one of the 13 determinants of response costs, and the amount of salience is generally determined by the

respondent, which in turn influences the decision of whether or not to complete and return the questionnaire. Salience can be enhanced, however, by the researcher's use of specific constructs in the construction and administration of the questionnaire, as illustrated in Table 2. Salience is the quality of being important, prominent or noticeable (Heberlein & Baumgartner, 1978). When salience is "acted upon," people are choosing to do or act upon the things they value or the things that are important to them.

The theoretical framework set forth in this dissertation illustrates from the association of constructs to specific disciplines of knowledge that salience can be geographically motivated when it is impacted by the composition, size and location of the survey's sample. Salience can be politically motivated if the topic and the sponsor of the mailed questionnaire are important to the respondent. Salience can be psychologically motivated resulting from the communication to the respondent in the letter of transmittal, particularly in how it conveys a level of threat, anonymity, confidentiality, personalization, appeal for response, and expressed value of the response and the respondent. In addition, salience can be sociologically motivated by how the respondent perceives the social desirability of the research topic and the research objectives. In summary, salience can be motivated by how the researcher controls and enhances the response inducement techniques that are listed above, and

then, in how the respondent perceives the salience of the mailed questionnaire. If salience is judged as high, then salience becomes a strong determinant in the decision to complete and return the questionnaire.

Baumgartner and Heberlein (1984) indicated in a later research article that

> it can safely be said that salient surveys get higher responses. What now needs to be done is to test procedures that increase the perceived salience of surveys. Between 1978 and 1983, there were no experimental or quasi-experimental tests of the salience construct. (p. 67)

Baumgartner and Heberlein (1984) did not, however, propose a way to test salience. Fifteen years ago, when Heberlein and Baumgartner first proposed salience as a critical determinant of response, if research scholars had defined exactly what salience embodied, particularly in a comparison to what the other response inducement techniques represented, perhaps science would be further along in controlling salience and its impact on the response rate that is achieved in mailed questionnaire studies.

Immediacy: Another Determinant of Response Costs

Near the same time period that Baumgartner and Heberlein (1984) issued a call to test the procedures that increase the perceived salience of surveys, Jobber (1984) completed an experimental study that indicated that sending a follow-up letter to a mailed questionnaire was important if a

high response rate were desired, even when the salience of a questionnaire was high. This finding correlated with the initial claim made by Heberlein and Baumgartner in 1978 when they indicated that the number of contacts made (or the follow-up done), along with salience, were found to explain 51% of the variance in final response.

Salience has been defined as a determinant of response costs. What is "follow-up" in comparison to "salience"? Follow-up as a response inducement construct in the mailed questionnaire process is a variable of the construction and administration process. As such, it facilitates the multitude of temporal management responsibilities a respondent faces. To compare salience to follow-up, however, would be similar to equating apples with oranges. In order to make a parallel comparison, the determinants of response cost that are associated with follow-up must be established. The theoretical framework illustrates that follow-up is a construct that impacts upon immediacy as a determinant of response costs.

Immediacy is the quality or state of urgency that prompts direct action and provides freedom from the feeling of need for immediate intervention (American Heritage, 1983; Merriam-Webster, 1974). When immediacy is involved in the decision to respond to a mailed questionnaire, it will dictate the urgency and speed of one's efforts.

Immediacy is motivated by the management of available resources, that is, freedom from external constraints upon time, energy, intellect, and so forth. Accordingly, receiving a follow-up reminder serves as an activator to the response process. The questionnaire is brought to the forefront in the management of a respondent's temporal affairs.

Through a simple synthesis of two studies, Heberlein and Baumgartner (1978) and Jobber (1984), with the interdisciplinary theoretical framework, immediacy and salience can be observed as significant determinants of response costs in the mailed questionnaire process. Immediacy improves the level of response when it is coupled with salience. A visual summary of this analysis is delineated in a smaller version of the theoretical framework outlined in Table 3.

Literature Synthesis: Procedures, Methodology, and Analyses of Data

To further synthesize the research literature findings on response inducement techniques with the theoretical framework, three sets of data were generated and analyzed. The first data set was obtained from abridging and evaluating the conclusions of comprehensive literature reviews and meta-analyses that examined the effectiveness of various response inducement techniques. The second data set was generated by examining the return rate percentage and the percentage increase of

Table 3

A Comparison of Salience and Immediacy--Observed from Follow-up

Interdisciplinary Theoretical Framework in the Social Sciences for the Mailed Questionnaire Process

Theory Base:					
Disciplines:	Geography	Political Science	Psychology	Sociology	Economics
Constructual Framework for the Application of Knowledge:	The Geographical Distribution	The Political Importance	The Psychological Impact	The Sociological Nature	Management Temporal
Construction and Administration of the Questionnaire: (Researcher Controlled)	Population composition and size Geographics of the sample	Political importance of the topic Sponsorship--letterhead, signature, and gender Establish credibility	Eliminate threat Anonymity and confidentiality Personalization Type of appeal or postage Expressed value of the response or the respondent	The social desirability of the research topic and objectives Establish interest, relevance, and salience Response bias controlled where possible	Simplicity of Instruction Ease of response Place of reception **Sending Follow-up**
Completion of the Questionnaire: (Respondent Determined)	Geographic proximity to the topic (if an institution), sponsor, or researcher	Topic, sponsor, or researcher's political salience	Response/respondent valued Trust ensured Topic, questionnaire, sponsor, or researcher's psychological salience	Topic, questionnaire, sponsor or researcher's sociological relevance and salience Methodology evaluated	Physical burden of response Evaluating Immediacy --temporal constraints
Determinants of Response Costs:	**Salience** of Proximity in Response		Perceived **Salience** of Response		**Immediacy** Restraints upon Response
The Result:		The Prescription and Prevention of Psycho/Socio Needs			Temporal Economic Impact

response generated from research studies that measured the impact of an introductory response inducement variable in the methodological process of a mailed questionnaire. The third set of data examined the differences that exist in the methodological use of response inducement variables, between low response-rate mailed questionnaire studies and high response-rate studies.

When summarized, the results of all three data set analyses were aligned with the interdisciplinary theoretical framework. The objective of this alignment was to determine how the current mailed questionnaire response rate literature findings intermingled with the theoretical framework and to determine highlighting and validating the proposed concept that there are significant determinants of response costs in the mailed questionnaire process.

In addition, the theoretical framework was also correlated with the scientific theories that have been previously proposed on response rates to identify the concepts that past researchers have theoretically seen as contributing cost factors in the response process. A full presentation of these four analyses follows.

Comprehensive Literature Reviews on Response Inducement Techniques

There are at least 16 comprehensive reviews or meta-analyses that attempt to clarify the significant response inducement variables of mailed

questionnaires. They were yielded by the 300 or more studies in this area. The methodology used within these reviews range from descriptive (Kanuk & Berenson, 1975; Linsky, 1975) to narrative (Conant, Smart, & Walker, 1990; Duncan, 1979; Harvey, 1987) to meta-analytic (Fox et al., 1988; Heberlein & Baumgartner, 1978; Yammarino et al., 1991). Regardless of the year that the studies were published, they differ greatly in the number of primary studies analyzed (Rodgers & Worthen, 1995). Attempts to clarify the significant response inducement variables that increase mailed questionnaire response by examining these comprehensive reviews were initially not revealing, specifically when examined in isolation or in casual comparison to each other. Table 4, which tallies the results of these reviews, does illustrate that, collectively, the 16 summaries indicate that the use of follow-up letters, monetary incentives, prenotification, sponsorship, and the type of postage used are the methods most frequently noted as the significant constructs to employ increased questionnaire response rates.

In a meta-analysis of nine of these comprehensive reviews, Rodgers and Worthen (1995) confirmed the use of follow-up letters, monetary incentives, and prenotification as being the most effective response inducement techniques. They questioned, however, the inducement variables of sponsorship, the length of the questionnaire, and the type of

Table 4

A Summary of Comprehensive Literature Reviews of Response Inducement Techniques That Have a Significant Effect on Mailed Questionnaire Response

Researchers ⇒ / Response ⇓Techniques⇓	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	SUM
Anonymity (Confidentiality)																	0
Completion Time Projected																	0
Cover Letter Appeal		X				X						X					3
Follow-up	X	X	X		X	X		X	X	X	X	X	X	X	X	X	14
Incentive (Monetary)	X	X	X		X	X		X	X	X	X	X		X	X	X	13
Incentive (Gift)		X									X				X		3
Level of Threat																	0
Personalization										X	X	X			X	X	5
Prenotification	X	X				X		X		X	X	X	X	X	X		10

A. Rodgers & Worthen, 1995
B. Yammarino, Skinner, & Childers, 1991
C. Conant, Smart, & Walker, 1990
D. Brown, Decker, & Connelly, 1989
E. Hopkins & Gullickson, 1989
F. Fox, Crask, & Kim, 1988
G. Armstrong & Lusk, 1987
H. Harvey, 1987
I. Baumgartner & Heberlein, 1984
J. Worthen & Summers, 1984
K. Yu & Cooper, 1983
L. Duncan, 1979
M. Heberlein & Baumgartner, 1978
N. Kanuk & Berenson, 1975
O. Linsky, 1975
P. Blumberg, Fuller, & Hare, 1974

(table continues)

Researchers ⇒	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	SUM
Response ⇓Techniques⇓																	
Questionnaire Color						X											1
Questionnaire Format	X																1
Questionnaire Length	X			X					X				X			X	5
Questionnaire Print				X													1
Questionnaire Size																	0
Return Deadline Stated						X			X								2
Return Postage Paid Envelope Provided						X		X					X	X		X	5
Salience of the Topic				X					X				X				3
Second Questionnaire Sent									X	X							2
Signature Status																	0
Sponsorship						X			X	X		X	X		X	X	7
Type of Postage		X				X	X		X	X	X	X	X	X	X	X	11

A. Rodgers & Worthen, 1995
B. Yammarino, Skinner, & Childers, 1991
C. Conant, Smart, & Walker, 1990
D. Brown, Decker, & Connelly, 1989
E. Hopkins & Gullickson, 1989
F. Fox, Crask, & Kim, 1988
G. Armstrong & Lusk, 1987
H. Harvey, 1987
I. Baumgartner & Heberlein, 1984
J. Worthen & Summers, 1984
K. Yu & Cooper, 1983
L. Duncan, 1979
M. Heberlein & Baumgartner, 1978
N. Kanuk & Berenson, 1975
O. Linsky, 1975
P. Blumberg, Fuller, & Hare, 1974

postage used, which are often cited by other researchers as being significant.

An examination of Table 4 shows that most reviewers would have difficulty in arriving at definitive conclusions on the use and impact of the various response inducement techniques in the mailed questionnaire response process. Most of the researchers focused on only a handful of techniques in their comprehensive review or meta-analysis. The outcome between researchers who focused on the same constructs was inconsistent. Some omitted key variables that are present in other reviews. Some reviews were judged to be conceptually or methodologically flawed because of various threats to their validity (Rodgers & Worthen, 1995). In addition, none of the comprehensive reviewers offered interpretations as to why specific findings were proven successful over other techniques used to increase response, or why a particular technique should be highly favored over another. Without some type of theoretical framework to organize each researcher's contribution to the whole, how and why an inducement variable increases response rates is difficult to determine. Accordingly, what can be learned about the various response inducement techniques and their impact on improving response, when examined in relationship to the interdisciplinary theoretical framework?

A Synthesis of the Comprehensive Literature Reviews with the Theoretical Framework

Table 5 outlines the response inducement techniques tallied in Table 4, based upon a summary of the interdisciplinary theoretical framework that was presented in Table 2. Table 5 illustrates that the constructs that were more frequently determined to be significant contributors to response rate increases in the mailed questionnaire process are associated with the theoretical domains of the social sciences and the fine arts. The response inducement techniques cited frequently in the comprehensive reviews as having a significant impact upon response are listed in Table 5 in **bold highlight**. The response techniques tallied even more frequently by the researchers as being significant are also **underlined**. After associating the constructs of Table 4 with the interdisciplinary theoretical framework, Table 5 reveals that the most effective response inducement techniques are those that align with the response cost determinants of immediacy and salience.

Table 5 illustrates that response inducement techniques that generate immediacy and/or increase salience, or are offset with financial reward are weighed together by the respondent in an unconscious cost/benefit analysis of whether or not to complete and return their questionnaire. In essence, a mailed questionnaire is returned when the urgency and importance of response is greater than the costs of response.

Table 5

Response Inducement Techniques That Have a Significant Effect on Mailed Questionnaire Response Rates

Interdisciplinary Theoretical Framework in the Social Sciences and the Fine Arts for the Mailed Questionnaire Process						
Theory Base:	Social Sciences					Fine Arts
Discipline:	Political Science	Psychology	Economics			Design
Constructual Framework for the Application of Knowledge:	The Political Importance	The Psychological Impact	Management			The Aesthetics
			Financial	Temporal	Time	
Construction and Administration of the Questionnaire: (Researcher Controlled)	**Sponsorship** Signature	**Type of postage** **Personalization** **Type of appeal** Level of threat Anonymity (Confidentiality)	**Incentive (monetary)** **Return postage paid envelope** **Incentive (gift)**	**Follow-up as a reminder** **Second questionnaire sent**	**Prenotification** **Return deadline stated** **Questionnaire length** Completion time projected	**Questionnaire color** **Questionnaire print style** **Questionnaire format** Questionnaire size
Completion of the Questionnaire: (Respondent Determined)	**Topic**, sponsor, or researcher's political **salience**	Topic, sponsor, or researcher's psychological salience Response and respondent valued Trust ensured	Monetary costs of response or Incentives (rewards) received for response	Evaluating Immediacy--freedom from other temporal constraints	Evaluating Immediacy--freedom from other time constraints	Visual perception(s) of the questionnaire
Determinants of Response Costs:	Perceived Salience of Response		Financial Costs or Rewards of Response	Immediacy Restraints Countering Response		Aesthetic Stimulus Impacting on Response

Table 5 also reveals that the response inducement techniques having the greatest impact on mailed questionnaire return generate from (a) the scientific discipline of economics and specifically from the management of time and temporal affairs and how immediacy is created or addressed to enhance the management of time and temporal constraints, thus facilitating response; or (b) the scientific disciplines of political science and psychology and how the salience of responding impacts upon the value, need, or desire to be involved in the response process; or (c) the scientific discipline of economics in the field of financial management and how the use of an economic reward can dissolve the restraints that bind the immediacy and salience of response. The significance of this association--the interaction between immediacy and salience as significant determinants of response costs, as determined in this analysis--was also observed in the previous synthesis of the two studies by Heberlein and Baumgartner (1978) and Jobber (1984) with the theoretical framework and will be addressed again in future analyses within this dissertation.

Examining the Achieved Percentage Rate of Response

To examine the impact that various response inducement techniques have on the overall percentage rate of response and the percentage rate increase in response, the mailed questionnaire research studies that have experimented with these constructs were analyzed. While the increases

attributable to specific response inducement techniques are important, it is even more important to examine the total percentage of response achieved in mailed questionnaire studies.

To analyze the percentage rates of return, 122 mailed questionnaire research studies that experimented with response inducement technique constructs were critiqued and then summarized in Table 6. The studies were located from a comprehensive search of the research literature published and presented on response inducement techniques. Although there are more than 122 primary studies, this number does comprise a large representative sample. Because there was no systematic bias in study selection, there is every reason to believe that the results reported herein are reliable estimates of the population parameters (Rodgers & Worthen, 1994). Because some research studies examined and tested the use of more than one response inducement technique, the total number (N) reviewed for Table 6 equaled 298.

On some response inducement techniques, an adequate number of studies listing usable data could not be located. These included studies probing the impact of questionnaire format, the use of a return deadline in the cover letter, place of questionnaire reception, and questionnaire or cover letter level of threat on response rates. Thus, the few studies located on these topics were not listed in Table 6. A complete bibliography of the 122 studies analyzed is cited in Appendix A.

Table 6

The Use of Response Inducement Techniques on the Percentage Rate of Response Achieved in Mailed Questionnaire Surveys

Response Inducement Technique Tested	Studies Examined (n)	Response Rate % (after treatment)				Response Increase % (from the treatment)			
		Low	High	Range	Mean	Low	High	Range	Mean
Anonymity	7	26.5	84.0	57.5	55.31	1.0	8.3	7.3	3.39
Completion Time Projected	5	31.5	41.5	10.0	36.25	5.0	16.0	11.0	9.60
Follow-up	22	14.0	94.0	80.0	65.04	2.0	37.0	35.0	17.97
Geographics of the Sample	5	35.0	83.0	48.0	68.46	7.3	10.7	3.4	8.94
Incentives (Monetary)	48	21.2	92.0	70.8	55.65	3.0	45.0	42.0	20.26
Incentives (Gift)	20	19.4	79.7	60.3	45.06	1.1	31.0	29.9	8.65
Personalization	22	18.3	80.0	61.7	47.67	.9	36.0	35.1	10.10
Population Composition	19	20.4	94.0	73.6	54.90	1.3	47.4	46.1	15.35
Pre-Notification	28	28.0	95.0	67.0	58.79	.6	47.4	46.8	13.56
Questionnaire Color	7	24.3	52.8	28.5	40.06	.2	9.1	8.9	4.03
Questionnaire Format/Size/Style	7	22.0	95.2	73.2	61.49	.8	19.0	18.2	8.30
Questionnaire Length	29	27.9	94.8	66.9	59.31	.1	28.0	27.9	9.07
Second Questionnaire Sent	6	15.7	98.0	82.3	52.00	.2	3.9	3.7	17.97
Sponsorship/Signature	17	21.3	93.3	72.0	43.70	.8	26.6	25.8	6.67
Type of Appeal	18	16.4	68.0	51.6	40.54	1.0	16.9	15.9	7.18
Type of Postage	38	20.0	71.0	51.0	44.68	1.1	25.0	23.9	7.37

Perhaps an examination of the information presented in Table 6 raises more concerns than it resolves. The numerous studies published on response inducement techniques indicate that the implementation of a treatment variable can and does significantly enhance response in a mailed questionnaire survey. However, the overall range of response varies dramatically among the studies that examine a particular variable. Table 6 reveals that there is a variability in the questionnaire response rates of anywhere from 40 to 80% for many of the response inducement constructs. This variability should be of great concern to the researchers who claim that the response inducement technique is a statistically significant factor in improving the response rates.

Therefore, the vast range of response rates achieved on any particular construct should be an indicator that the introduction of a response inducement technique is not the only or the most significant determinant of response. Additionally, the mean response rate achieved for each tested response inducement construct resulted in only a 40 to 60% overall return rate for the various experimental studies. A 40 to 60% response is not necessarily an impressive return rate for a mailed questionnaire.

Therefore, it is difficult to believe that the use of a specific response inducement technique will be a significant factor in continually achieving high response rates. Table 6 also illustrates that the 298 mailed

questionnaire research studies that examined the effects of various inducement techniques on improving response rates only account for a mean of a 6 to 20% increase in response rates.

Small percentage increases in response generated by incorporating a response inducement variable may provide a false sense of security if it is assumed to be the solution for diminishing poor response rates. Ultimately, the fact that response rates and the quality of response are high may matter far more than the fact that the introduction of a variable increased response by 10%. Table 6 illustrates that the introduction of a response inducement technique did not necessarily diminish response bias as a concern in the vast majority of the cited research studies. Therefore, what insights can be gained from the analysis of response percentages achieved in relevant response inducement experiments and their association with the interdisciplinary theoretical framework? Table 7 illustrates this perspective.

Achieved Response Rates Synthesized with the Theoretical Framework

The second data set, like the first, reveals that the use of response inducement techniques as methods for increasing response rate percentages is clarified when examined in connection with the interdisciplinary theoretical framework, as outlined in Table 7. The second data set, like the first, should show that both immediacy and salience are significant determinants of response costs, because both the first and

Table 7

Percentage Rate of Response Achieved in Mailed Questionnaires as Reflected in the Theoretical Framework

Interdisciplinary Theoretical Framework in the Social Sciences and Fine Arts for the Mailed Questionnaire Process
(Overall response rate / Response rate increase)

Theory Base:	Social Sciences						Fine Arts
Discipline:	Geography	Political Science	Psychology	Economics			Design
Constructual Framework for the Application of Knowledge:	The Geographical Distribution	The Political Importance	The Psychological Impact	Management			The Aesthetics
				Financial	Temporal	Time	
Construction and Administration of the Questionnaire: (Researcher Controlled)	Geographics of the Sample (68.46 / 8.94)	Sponsorship/ Signature (43.70 / 6.67)	Personalization (47.67 / 10.10)	Incentive (Monetary) (55.65 / 20.26)	Follow-up as a Reminder (65.04 / 17.97)	Prenotification (58.79 / 13.56)	Questionnaire Format/ Size/ Style (61.49 / 8.30)
	Population Composition (54.90 / 15.35)		Type of Postage (44.68 / 7.37)	Incentive (Gift) (45.06 / 8.65)	Second Questionnaire Sent (52.00 / 17.97)	Completion time projected (36.25 / 9.60)	Questionnaire Color (40.06 / 4.03)
			Type of Appeal (40.54 / 7.18)			Questionnaire Length (59.31 / 9.07)	
			Anonymity (55.31 / 3.39)				
Mean Response Rate / Mean Response Increase:	(61.68 / 12.15)	(43.70 / 6.67)	(47.05 / 7.01)		(58.52 / 17.97)	(51.45 / 10.74)	
	(50.81 / 8.61)			(50.36 / 14.46)	(54.99 / 14.36)		(50.78 / 6.17)
Determinants of Response Costs:	Salience of Proximity and Composition in Response	Perceived Salience of Response		Financial Costs or Rewards of Response	Immediacy Restraints Countering Response		Aesthetic Stimulus Impact on Response

second data sets stem from research studies examining the same phenomena. The revealing finding, however, is that the mean overall response rate and the mean increase in response generated in each category are higher in the categories where the constructs relate to the scientific disciplines of geography and the temporal management aspects of economics. The scientific discipline of geography points to salience as a determinant of response costs and the scientific discipline of economics measures the response costs of immediacy.

Table 7 also illustrates that, when the percentage rates of return are averaged for each of the response inducement constructs, in each of the scientific disciplines, the scientific discipline categories of time and temporal economic management have a higher percentage return rate than do the other disciplines. In addition, the mean of the response increase created by the use of constructs in the temporal economic category was between 6 to 12 higher than any of the other disciplines' construct categories. This analysis could support the assumption that immediacy is a stronger determinant or contributing factor of response costs than is salience.

Additionally, the second data set analysis also indicates that implementing and manipulating response inducement techniques as the significant determinants of response costs, cannot be considered the

primary solution for diminishing the concerns of response bias in the mailed questionnaire process. They generate an average return rate of only 50%.

The synthesis of return rate percentages for the various response inducement technique studies with the interdisciplinary theoretical framework highlights the geographics of the sample, follow-up, prenotification, and questionnaire format and length as key constructs in the response rate process. It also identifies immediacy and salience as significant determinants of response costs in the questionnaire return process. Along with this comes the assumption that immediacy may be a stronger determinant of response than is salience.

The present researcher recognizes that the percentage rates of response as set forth in Table 6 and Table 7 could be analyzed by more sophisticated methods of statistical analysis than the calculation of a simple mean. However, because the mean is the most statistically sensitive of all calculations to each individual score in a set and because the objective sought has been realized, a more advanced analysis seems unnecessary.

An Examination of the Methodology of High Versus Low Response-Rate Studies

Although the implementation of specific response inducement variables accounted for an increase in questionnaire response rates in several hundred research studies, those variables still may not fully explain

why people respond. For example, if the increase in response is attributed solely to the introduction of specific response inducement treatments, each of which typically provided 5 to 10% increases, then a mailed questionnaire survey that employs 10 to 20 techniques could hypothetically have a response rate above 100%, if we assume the techniques are additive rather than interactive. The alternative assumption that a synthesis of the multiple variables produces a ceiling in the summative effect does not resolve the question of why the same questionnaire survey, using identical methodology, mailed to populations of parents and teachers produces an entirely different response rate from these two populations. Therefore, is there a statistically significant difference in the response inducement techniques employed in mailed questionnaire surveys that have high response rates versus those that have low response rates, and how do these differences align with the interdisciplinary theoretical framework?

To answer this question, the methodologies used in the construction and administration of completed mailed questionnaire surveys of varying known response rates were coded. This was done in order to identify the response inducement techniques that were used and to analyze how the questionnaire methodology differed between studies of varying known response rates.

Published, mailed questionnaire research studies in refereed journals do not report comprehensive commentary on all response inducement techniques used. Nor do they publish a copy of the questionnaire. Consequently, these studies could not be analyzed to answer the question raised. Therefore, the decision was made to examine response inducement techniques used in doctoral dissertations that used mailed questionnaires to gather research data.

Doctoral dissertations were chosen because they are generally required to provide full reports of procedures used. To limit confounding intervening variables, only doctoral dissertations completed at one institution in one academic discipline were examined.

It was determined that the mailed questionnaire dissertations needed to span as short a time period as possible, because duration seems to have an influence on the effectiveness of some response inducement techniques, such as the effectiveness of the amount of monetary incentives on response, the novelty of commemorative stamps, and the use and changes in computer print technology. Mailed questionnaire studies with a wide geographic distribution of sponsorship and questionnaire distribution were also needed, along with dissertation studies that had both high and low response rates.

To obtain the needed sample, the doctoral dissertation pools at six universities in two western states were initially reviewed: University of

Idaho, Boise State University, Idaho State University, Utah State University, University of Utah, and Brigham Young University. The scenario best suiting the criteria needed was found in dissertations completed at Brigham Young University.

Brigham Young University's library provided the largest available pool of mailed questionnaire research dissertations and the widest geographic distribution of studentbody. This was partially due to a multistate-based doctoral program, which meant that many doctoral students mailed their questionnaires from their hometown or hometown-based employer.

The researcher examined 161 mailed questionnaire survey research dissertations. They were completed in Brigham Young University's College of Education, between the years 1981-1990. The College of Education granted doctoral degrees in education administration, educational leadership, secondary education and foundations, elementary education, and curriculum and instructional science. Seventy-three percent of the mailed questionnaire surveys were sent to populations on the local or state level in 10 different states. The other 27% were mailed to populations that had a multistate or national geographic distribution. The surveys' response rates varied from 23% to 100%.

The 161 dissertation studies were coded on 48 response inducement variables as listed in Figure 1. The coding variables were divided into mutually exclusive categories if the data warranted, or into exhaustive

Identification Variables	Geography
ID Number	Geographical Location
Sample Size	Population Composition
Year of Study	
Total Percent Returned	
Percent Returned After 1st Mailing	
Questionnaire Format	**Questionnaire Content**
Number of Pages	Content Threat
Number of Items	Knowledge Needed
Spacing	Question Format
Print Font Size	Completion Time
Page Size	
Printing Medium	
Communication	**Communication**
Prenotification	Completion Time Projected
Place of Reception	Amount of Time Projected
Cover Salutation	Deadline for Return Stated
Cover Closing	How Long to Respond
Cover Signature	Month Mailed
Cover Sponsorship	Anonymity Promised
Signature Sponsorship	Confidentiality
Signature Gender	Cover Letter Appeal
Research Endorsed by Agency	Response Valued
Return Envelope Provided	Level of Threat
Monetary Incentive	**Follow-up**
Incentive Offered	Type of Follow-up
Type of Incentive	Second Questionnaire Included in Follow-up
When Incentive was Received	Follow-up Incentive Offered
	Follow-up Incentive Received
Postage	When Follow-up was Received
	Follow-up Threat
Type of Postage	Number of Follow-ups
Return Postage Provided	

Figure 1. Coded variables for the methodology used in a comparison of mailed questionnaire research on high versus low response-rate studies.

categorical patterns decided upon by the researcher and verified by the review of literature. Each category was then assigned a numerical code for statistical purposes. The coding criteria used for each variable are found in Appendix B and a bibliography of the doctoral studies evaluated is found in Appendix C.

The coded data were analyzed by percent response quartiles. The low quartile of response category consisted of 42 doctoral dissertation surveys with a 23 to 67% response rate, and it was compared against the high quartile of response rate category of 41 doctoral dissertation surveys with an 87 to 100% response rate.

The two-tailed t test was used to determine whether there was a statistically significant difference between the 48 response inducement variables used by the various studies in the low quartile of response and the high quartile of response. Hsu and Feldt (1969) have demonstrated that the use of parametric analyses on such dichotomized data is legitimate. An alpha level of .05 was used for all statistical analyses. The present researcher recognizes that statistical significance testing without randomness is a violation of the assumption of the technique and that running multiple t tests inflates the potential of making a Type I error. However, more liberal use of the technique was deemed appropriate to give some initial guidance to the effort of developing a viable theory. To

actually test the theory, in a typical empirical study, such use would not be warranted.

To analyze the magnitude of the effect of the response inducement variables, in increasing mailed questionnaire response, an effect size was also computed. Because this dissertation study deals with theoretical content instead of practical issues that will have an impact on people, an effect size of .5 or above was considered meaningful.

Of the 48 variables analyzed, only 6 variables were statistically significant at the .05 level when surveys of high response rates were compared with surveys of low response rates. The 6 response inducement variables were also considered practically significant with effect sizes of .5 or higher.

These variables and their impact upon response are listed in Table 8. Table 9 synthesizes the placement of these variables with the interdisciplinary theoretical framework. Again, the synthesis of the data with the theoretical framework highlights immediacy and salience as the significant determinants of response costs.

Formative Conclusions from a Deductive Synthesis of the Research Literature

From a three-part synthesis of the research literature on response inducement techniques with the interdisciplinary theoretical framework, several conclusions have been formulated. Most important, perhaps, is

Table 8

Methodological Technique Differences in Mailed Questionnaire Surveys with High Response Rates Versus Those with Low Response Rates

Variables	Impact on Response Rate	t test P = .05 n = 83 df = 81	t value	Effect Size
Personalization of Cover Letter	Surveys with a cover letter that had a personalized greeting had a higher level of response than those that had a form greeting.	.001	3.40	.77
Place of Reception	Surveys whose questionnaires were received at work (or school) versus questionnaires received at home had a higher level of response.	.001	-3.36	-.78
Signature Sponsorship of Cover Letter	Surveys with a cover letter that were signed with a signature by a person of rank or stature had a higher level of response than those of graduate student status.	.006	-2.83	-.62
Level of Questionnaire Content Threat	Surveys with questionnaire content that posed only a medium versus a high level of threat had higher levels of response.	.015	2.48	.55
Questionnaire Length	Surveys whose questionnaire was on an average of 1.65 pages shorter had a higher level of response over longer questionnaires.	.018	2.42	.57
Geographical Location of the Sample	Statewide specialized population respondents, such as educational administrators, had a higher level of response.	.027	-2.26	-.50

Table 9

Methodological Technique Differences in Mailed Questionnaire Surveys of High Versus Low Response Rates as Represented in the Theoretical Framework

Interdisciplinary Theoretical Framework in the Social Sciences for the Mailed Questionnaire Process					
Theory Base:	Social Sciences				
Discipline:	Geography	Political Science	Psychology	Economics	
Constructual Framework for the Application of Knowledge:	The Geographical Distribution	The Political Importance	The Psychological Impact	Management	
				Temporal	Time
Construction and Administration of the Questionnaire: (Researcher Controlled)	Geographics of the Sample	Signature Sponsorship of Cover Letter	Level of Questionnaire Content Threat Personalization of Cover Letter	Place of Reception	Questionnaire Length
Completion of the Questionnaire: (Respondent Determined)	Geographic proximity to the topic (if an institution), sponsor, or researcher	Topic, sponsor, or researcher's political salience	Topic, sponsor, or researcher's psychological salience Response and respondent valued Trust ensured	Evaluating Immediacy--freedom from other temporal constraints	Evaluating Immediacy --freedom from other time constraints
Determinants of Response Costs:	Salience of Proximity in Response	Perceived Salience of Response		Immediacy Restraints Countering Response	

that the interdisciplinary theoretical framework accommodates well the current literature on response inducement techniques and helps to validate its formation. The theoretical framework supports the researched components and constructs of the mailed questionnaire process in an appropriate organizational analysis and highlights both immediacy and salience as significant determinants of response costs.

The response inducement techniques which likely contribute to reducing the direct measurements of response costs that impact upon salience are the geographic distribution of the sample, sponsorship, personalization, type of postage, level of threat, and type of cover letter appeal. The constructs that likely reduce the impact upon immediacy are the place of questionnaire reception, the use of follow-up, prenotification, and questionnaire length.

The analysis illustrates that the traditional response inducement techniques used in the construction and administration of the mailed questionnaire process, while being time-honored indicators of return rate performance, are based on potentially unreliable empirical models. A synthesis of the research with the interdisciplinary theoretical framework indicates that response inducement techniques may touch upon the reason response occurs, but the actual reason for response is likely contained in the indirect determinants of response costs that underlie the statistically significant response inducement variables.

Previously Proposed Theories of
Mailed Questionnaire Response

The final arena where researchers have started to focus attention on mailed questionnaire response rates is the application or development of viable theories that explain the behavior motivation of the respondent in the response process. The interdisciplinary theoretical framework now needs to be correlated with the scientific theories that have been proposed as explanatory structures of respondent behaviors in the response process, to identify what past researchers have postulated as contributing cost factors in the response process. This application is also necessary to bring completion to the process of examining the research on mailed questionnaire response rates in connection with the interdisciplinary theoretical framework.

In reviewing the literature on response rate theories, it is sometimes difficult to determine whether or not a researcher is proposing a theory related to response, proposing a model related to response, or merely hypothesizing or speculating on the theoretical structure behind response. All of these possibilities have been included in the analysis.

Table 10 lists and describes the previously proposed theories of questionnaire response. It also analyzes their contributions towards identifying the significant determinants of response cost as highlighted by the previous research literature syntheses with the theoretical framework.

Table 10

A Summary of Proposed Theories on Mailed Questionnaire Response Rates Examined in Comparison with the Determinants of Response Costs

Researcher(s)	Proposed Theory	Summary of Proposed Theory	Theory Tested	Response Cost Reference to:		
				Salience	Immediacy	Reward
Altschuld & Lower, 1984	Salience, timing, and overall attention to detail	A retrospective analysis of factors that enhanced a 96% return rate. Salience, timing (when mailed), sponsorship and follow-up were theorized as the most significant contributing elements of response. Efforts were made to increase the urgency (immediacy) of response.	No	X	X	
Biner, 1988	Reactance Theory	When a behavioral freedom is threatened, individuals will experience a state of arousal called reactance and will be motivated to reduce the arousal by restoring the threatened freedom. When the importance (salience) of the research and the urgency (immediacy) with which one should respond are stressed, the result may be an inadvertent threat to freedom. Freedom is returned by returning the questionnaire.	Yes	X	X	
Cox, 1976	A Cost/Benefit View	A cost/benefit philosophy of prepaid monetary incentives in mailed questionnaires.	No			X
Dillman, 1978	Total Design Method (TDM) and the Social Exchange Theory	The TDM consists of two parts: 1) to identify each aspect of the survey process and to shape each so that the best possible responses are obtained, and to 2) organize the design effort so that the design intentions are carried out in complete detail. The first step is guided by the social exchange theory and the second step is guided by an administrative plan. A concept of establishing trust (salience & reward), reducing costs to the respondent (immediacy & reward) and rewarding the respondent (salience & reward).	Yes	X	X	X

(table continues)

Researcher(s)	Proposed Theory	Summary of Proposed Theory	Theory Tested	Response Cost Reference to:		
				Salience	Immediacy	Reward
Furse & Stewart, 1982	Cognitive Dissonance Theory	Individuals who accept a monetary incentive (reward) and decide not to participate in the survey will experience cognitive dissonance. These individuals will become motivated to reduce the dissonance. Therefore, they will respond to the survey.	Yes			X
Gouldner, 1960	The Norm of Reciprocity	The propensity to return a questionnaire may increase if recipients have been given something (a reward) by the sender, even though its value might be quite small.	No			X
Goyder, 1982	Salience	Extension and replication of Heberlein & Baumgartner (1978) study which indicates that salience of topic is a high predictor of response rates.	Yes	X		
Hackler & Bourgette, 1973	Cognitive Dissonance Theory	Individuals who accept a monetary incentive (reward) and decide not to participate in the survey will experience cognitive dissonance. These individuals will become motivated to reduce the dissonance. Therefore, they will respond to the survey.	Yes			X
Hansen, 1980	Self-perception Theory	When external cues are present (rewards), the respondent feels less commitment to the task and as a result provides a lower quality of response.	Yes			X
Hansen & Robinson, 1980	Foot in the Door Theory	Compliance with a small initial request created by precontact or prenotification, significantly enhances the likelihood of compliance with a larger subsequent task (immediacy). This precommitment will carry over into the motivation to return the questionnaire.	Yes		X	

(table continues)

Researcher(s)	Proposed Theory	Summary of Proposed Theory	Theory Tested	Response Cost Reference to:		
				Salience	Immediacy	Reward
Hantula, Stillman, & Warnach, 1990	Antecedent Interventions and Discriminated Operant Interventions	Subjects were exposed to antecedent only interventions (immediacy & salience) or discriminated operant interventions (rewards). The discriminated operant intervention yielded a higher percentage of surveys returned. These results are consistent with organizational management research.	Yes	X	X	X
Heberlein & Baumgartner, 1978	Salience	Mailed surveys judged to be highly salient to the respondents explained 51% of the variance in final response.	Yes	X		
Hesseldenz & Smith, 1977	Grouping Theory	Persons cluster into general personality types, they chose professions related to those types & will respond to mailed questionnaires according to those types. Specific questionnaires will be more important (salient) to a specific group of people.	Yes	X		
Hornik, 1981	Cue Search Theory	Analyzed the effect of a time-cue technique on time perception. Results showed that perceived short completion time stimulates a response. Subjects search for cues to estimate time, a temporal cue notion (immediacy), and these cues do in fact account for their time judgement.	Yes		X	
Jobber, 1984	Salience	Recipients of mailed questionnaires who have higher interest (salience) in the topic reply more frequently to a questionnaire. However, 86% of the respondents in a follow-up were also in the higher interest group. Thus, highlighting the importance of follow-up (immediacy) regardless the high interest of the group (salience).	Yes	X	X	

(table continues)

Researcher(s)	Proposed Theory	Summary of Proposed Theory	Theory Tested	Response Cost Reference to:		
				Salience	Immediacy	Reward
Lockhart, 1984	Stages of Response Behavior	The researcher must provide response incentives at six major stages, if potential respondents are to complete and return a mailed questionnaire. The potential respondent will view each stage as either moving toward a reward or away from a punishment. Perhaps different theories explain the behavior of respondents at each stage.	No	X	X	
McKillips, 1984	Applying attitude theories	Applies attitude theories of other researchers. An interaction between the survey procedure and the type of respondent should be expected. Response is tied to the importance (salience) of the survey to respondent's values.	No	X		
Robinson & Agisim, 1951	Time & Temporal Difficulties	Reasons for nonresponse are related to time and temporal management of the questionnaire (immediacy), which included misplaced or lost questionnaires, questionnaires that were overlooked, or respondents that were too busy or not at home.	Yes		X	

Formative Conclusions of Previously Proposed Theories on Response Rates

The theoretical efforts to explain response motivation are limited and have been quite incomplete. None of the researchers has attempted any systematic application of the theoretical process in the development of their theories on response rates or tried to organize past response rate research efforts to validate their theories. Lockhart (1984) was the only researcher to justify a proposed theory based on scientific or academic disciplines of knowledge.

Some of the response rate theories were tested by researchers subsequent to their proposal (Biner, 1988; Dillman, 1978; Furse & Stewart, 1982; Hackler & Bourgette, 1978; Hansen, 1980; Hansen & Robinson, 1980; Hantula et al., 1990; Heberlein & Baumgartner, 1978; Hornik, 1981; Jobber; 1984). There has been, however, inadequate peer validation of the proposed theories, with the exception of Heberlein and Baumgartner's (1978) proposal on salience as a strong predictor of response and Dillman's (1978) Total Design Method (TDM) model.

Most of the previously proposed theories of the mailed questionnaire process are extrapolated from a variety of scientific arenas to explain questionnaire response behavior. In addition, most of the original theoretical attempts were process outlines, where the researcher is merely guided in paying strict attention to questionnaire construction and

administration details. The most widely recognized of these process outlines is the Total Design Method proposed by Dillman (1978).

In summary, despite these limitations, each proposed theory did focus on the theoretical perspective that either immediacy, salience, or reward factors are significant determinant costs in the response process, although the terminology was not necessarily defined in precisely those terms. However, a critical shortcoming of all of the proposed theories is that none sought to bring these significant factors together to examine the crucial relationships that appear to exist between them.

Conclusions from a Synthesis of the Literature

When the various literature review analyses on response rates were aligned with the interdisciplinary theoretical framework, it was concluded that both immediacy and salience should be paramount constructs in any proposed theory on the mailed questionnaire response rate process. It also appears that immediacy may be a stronger determinant of response than salience.

In addition, the framework illustrates that any proposed theory that utilizes constructs from only one scientific discipline could determine some of the significant costs in response, but it would not establish all of the costs because of the interdisciplinary nature of the response process. The

use of the interdisciplinary theoretical framework to organize the research literature on the mailed questionnaire process provides a provocative foundation for contemplating how immediacy and salience, as significant determinants of response costs, influence mailed questionnaire return.

CHAPTER VI

A PROPOSED THEORY AND MODEL FOR IMMEDIACY AND SALIENCE AS SIGNIFICANT DETERMINANTS OF MAILED QUESTIONNAIRE RESPONSE RATES

With a thorough synthesis of selected research literature on mailed questionnaire response rates completed, assumptions can now be made and defended by the present researcher concerning the probability that immediacy and salience are significant determinants of response costs in the mailed questionnaire process. The validity of jumping from synthesis to assumptions is outlined in this quote, from the writings of Plato's Republic (trans. 1963).

> Begin by postulating . . . these data they take as known; and having adopted them as assumptions, . . . (they) treat them as self-evident. Then starting from these assumptions, they go on until they arrive, by a series of consistent steps at all the conclusions they set out to investigate . . . . The diagrams they draw and the models they make are actual things, which may have their turn as images, while the student is seeking to behold those realities which only thought can apprehend. This, then, is the class of things that I spoke of as intelligible, but with two qualifications: first, that the mind, in studying them, is compelled to employ assumptions . . . and second that it uses as images those actual things which have images . . . . (p. 225)

Plato explained that we start from assumptions and that when assumptions are defined, they become postulations. Postulations, then, are taken "as known" and treated "as self-evident" until proven otherwise (Stokes, 1990).

Missimer (1986) pointed out that there are two types of basic assumptions: value assumptions and factual assumptions. Value assumptions are based upon what we believe should be. We determine that one value is more important than another. Factual assumptions are based on what we believe is the case.

Theories build upon assumptions as well. Assumptions are the foundation for explaining critical and theoretical thought (Isaak, 1985; Stokes, 1990). Plato (trans. 1963) used assumptions to build his arguments and theories, as demonstrated in this quote:

> Then by the second section of the intelligible world you may understand me to mean all that unaided reasoning apprehends by the power of the dialectic, when it treats its assumptions, not as first principles, but as hypotheses in the literal sense, things "laid down" like a flight of steps up which it may mount all the way to something that is not hypothetical. (p. 226)

Similarly, the theory that will be proposed next in this chapter is based upon both value and factual assumptions.

A Theory for Immediacy and Salience as Significant Determinants of Response Rates in the Mailed Questionnaire Process

A workable theory that explains the significant determinants of response costs in the mailed questionnaire process must be broad. It needs to account for the interdisciplinary nature of the process and the impact of immediacy and salience in relationship to both the construction

and administration of the questionnaire as well as the completion of the questionnaire, thereby accounting for both the direct and indirect determinants of response costs. Therefore, it is theorized that:

1. There are significant determinants of response costs in the mailed questionnaire process.

2. Immediacy and salience are the most significant determinants of response costs in the mailed questionnaire process.

3. Salience is enhanced by immediacy in the decision to respond to a questionnaire.

4. When immediacy and salience are both high in the response process, the return rate of the mailed questionnaire survey will be high.

5. When immediacy and salience are low or nonexistent in the response process, the return rate of the mailed questionnaire survey will be low.

6. Immediacy as a direct determinant of response is specifically enhanced by controlling the following constructs in the construction and administration of a mailed questionnaire: the place of reception, the use of follow-up, prenotification, and questionnaire length.

7. Salience as a direct determinant of response is specifically enhanced by controlling the following constructs in the construction and administration of a mailed questionnaire: personalization, sponsorship,

geographic distribution, type of postage, level of threat, and type of cover letter appeal.

8. The indirect determinants of response costs in the mailed questionnaire process are determined by the variables in a respondent's personal realm that impinge upon salience and immediacy.

9. The indirect determinants of response costs associated with immediacy and salience can be predetermined for a specified population, with a high factor of reliability, based upon predictions that are made by research experts, before the construction of a mailed questionnaire survey.

10. Important questions to predetermine immediacy and predict potential response rates in the mailed questionnaire process should include:

a. How urgent would it be for the respondent to reply to a mailed questionnaire from this sponsor?

b. How urgent would it be for the respondent to reply to a mailed questionnaire from this researcher?

c. How urgent would it be for the respondent to reply to a mailed questionnaire on this topic?

d. How can the respondent be made to comprehend that responding to the research topic of the questionnaire is extremely urgent?

e. How can the respondent be made to comprehend that responding to the sponsor of the questionnaire is extremely urgent?

f. How can the respondent be made to comprehend that responding to the researcher is extremely urgent?

g. What needs to be done to increase the immediacy of the mailed questionnaire survey?

11. Important questions to predetermine salience and predict potential response rates in the mailed questionnaire process should include:

a. How important would the sponsor of this mailed questionnaire be to the respondents?

b. How important would the topic of this mailed questionnaire be to the respondents?

c. How important will the researcher who developed this mailed questionnaire be to the respondents?

d. How important is the specific sponsor of this mailed questionnaire to the geographic distribution of this sample?

e. How important is the specific topic of this mailed questionnaire to the geographic distribution of this sample?

f. How can the respondent be made to comprehend that the research topic of this mailed questionnaire is extremely important?

g. How can the respondent be made to discern that the sponsor of this mailed questionnaire is extremely important?

h. How can the respondent be made to discern that the researcher of this mailed questionnaire is extremely important?

i. What needs to be done to increase the salience of the mailed questionnaire survey?

12. If ratings of either immediacy or salience are not high, and neither can be altered, what can be done to increase the reward of responding? If a reward cannot be offered, what are the consequences of a lower response rate to the mailed questionnaire?

13. If ratings of either immediacy or salience are low or nonexistent, should an alternative methodology or research design be explored?

A Theoretical Model on the Interaction of Immediacy and Salience in the Response Process

Figure 2 presents a proposed theoretical model on the interaction of immediacy and salience in the mailed questionnaire response process, intended to illustrate and explain the theory just presented. The proposed paradigm juxtaposes immediacy and salience against each other in a four-quadrant format. Based upon the theory presented, each quadrant predicts

	HIGH IMMEDIACY →	← NO IMMEDIACY
HIGH SALIENCE ↓	I EXTREMELY HIGH RESPONSE Responding to the Questionnaire Is Immediately Important	II MODERATELY HIGH RESPONSE Questionnaire Will Be Complete Between Other Pressing Demands, if Possible
↑ NO SALIENCE	III MODERATE RESPONSE Questionnaire Will Be Completed if Convenient	IV LOW RESPONSE Responding to the Questionnaire Is not Immediately Important

Figure 2. A proposed model for the interaction of immediacy and salience in the mailed questionnaire response-rate process.

the anticipated level of response generated from the interaction of these two variables. Immediacy is portrayed on the horizontal axis of the quadrants and salience on the vertical axis of the quadrants.

In Quadrant I of the proposed model, responding to a questionnaire is both salient and immediate. This quadrant predicts that high response rate levels will be achieved. To obtain high return rates on a questionnaire, the respondent must be motivated by high levels of immediacy and salience. For a respondent in this quadrant, completing and returning the questionnaire becomes immediately important. In this quadrant, the respondent will produce the requested response, and bring experience and judgement to bear in the response process. In principle, the questionnaire "acts on" the respondent. Hypothetically, a mailed questionnaire survey in this quadrant will have a return rate in the range of 80% to 100%.

In Quadrant II, responding to the questionnaire is salient, but not immediate. The questionnaire by itself does not motivate the respondent to respond quickly, the respondent is motivated by the salience of the questionnaire's topic, sponsor, or researcher and then creates the immediacy of response and thus decides to complete the questionnaire. Questionnaires completed in this quadrant will likely be completed thoroughly and correctly and, therefore, response bias will be low. In essence, the respondent "acts on" the questionnaire and because of the importance associated with response, the overall response rate in this

quadrant is predicted to be moderately high. Hypothetically, a mailed questionnaire survey in this quadrant will have a return rate in the range of 60% to 80%.

Quadrant II also illustrates why salience alone does not serve as the only significant determinant of response. Amidst the hectic responsibilities of those who are asked to complete mailed questionnaires, the salience of the questionnaire's topic, or the survey's sponsor could be neglected for other immediate intervening concerns.

Quadrant III depicts a situation where completion of a questionnaire is immediate, but not truly salient. The sense of immediacy is created by the illusion of salience. If salience exists, it likely exists for someone beside the respondent and completion of the questionnaire is more of a courtesy than a requirement. Completion of the questionnaire is likely meeting the priorities of the researcher and their expectations, not the priorities of the respondent. If the returned questionnaire is rooted in this quadrant, the researcher can only anticipate moderate levels of response. Hypothetically, a mailed questionnaire survey in this quadrant will have a return rate in the range of 40% to 60%.

It is important that a researcher who is prepilot planning and predicting a mailed questionnaire's response rate by using this model not confuse Quadrant I with Quadrant III. Although the researcher may believe that the sample receiving the questionnaire has high salience, the salience

of the questionnaire for the researcher may in fact be dramatically different from the salience of the questionnaire for the respondent. The same confusion could also exist between Quadrant I and II if the researcher misjudges immediacy.

Quadrant IV's predicted low response rate will result from mailed questionnaires that have no immediacy and no salience. The researchers whose studies fall in this quadrant will be fortunate to receive responses. A questionnaire returned from this quadrant suggests that for some unknown reason, the respondent was willing to take his/her time to complete and return the questionnaire that he/she judged neither immediate nor salient. Perhaps it was as easy for the respondent to complete the questionnaire as it was to throw it away, or perhaps in a moment of escape from other concerns, the questionnaire was completed. Hypothetically, a mailed questionnaire survey in this quadrant will have a return rate of 20% to 40%.

It is important to note that as the arrows on the model in Figure 2 indicate, there is a continuum within and between each quadrant. Immediacy and salience will likely disperse unevenly between the quadrants and quadrants may overlap somewhat with each other. This occurs because the behavior-motivating variables of a discipline are not linear and the boundaries of a discipline can be artificially imposed (Covey, Merrill, & Merrill, 1994; Wheatley, 1993).

The proposed theory and model that immediacy and salience are the significant determinants of response rates are initially useful only as a descriptive device. They will subsequently need empirical testing to conclude if the determinants identified are predictive of response as illustrated. This research study does propose, in Chapter VII, a method for testing the proposed theory and model in a future research study.

CHAPTER VII

A RECOMMENDATION FOR TESTING THE PROPOSED THEORY

A number of proposed theories have stood for years without empirical proof. What is the urgency and necessity of proof? Does a proposed formula have to be tested to be called a theory? Griffiths (1964) stated that "the answer is probably 'no.' What is needed is that the theory must be logically capable of proof or disproof whether or not the tools for testing are available at the time of formulation" (p. 31).

As the knowledge base builds on a particular problem or idea, we eventually learn enough to develop a theory. Conversely, if we have a theory, we can go in reverse to seek the knowledge that accepts or rejects it (Rowley, 1994). For example, the logical test of the Copernican Theory could have been made at any time, but it awaited the invention of a powerful telescope to ascertain parallax. Einstein's Theory of Relativity was tested over a long period of years because initially, man could not fly at tremendous speeds, neither were his theories on subatomic particles and black holes tested at their conception. Griffiths (1964) did suggest, however, that certain theories can and should be rejected, such as those that are written to make testing impossible or those that have incongruencies between the assumptions.

Undeniably, an ideal theoretical scenario for the mailed questionnaire response process would be that there existed a well-developed and empirically verified paradigm concerning response rates, which provided a complete understanding of the contribution that each construct makes to response rates in an infinite number of survey situations, with the contribution of each construct expressed in multidimensional profiles, and levels of manageable steps for achieving exemplary response rate performance. Obviously, no such paradigm exists, but this research study has begun the process of organizing the foundation for testing theoretically grounded constructs that appear to be significant determinants of response.

The theoretical foundation that has been established in this study will now allow mailed questionnaire research methodology to depart from the limitations that have been created by testing response inducement techniques as the sole variables that stimulate response. By examining immediacy and salience as significant determinants of response costs, rather than randomly suggesting theories and experimenting with the response inducement techniques that touch upon the costs of response, researchers will be advanced in their objectives of controlling, manipulating, and enhancing the constructs and variables that will increase mailed questionnaire response rates, thus reducing response bias in the survey research findings.

Methods and Procedures for Testing the Proposed Theory

If immediacy and salience are significant predictor variables of response rate levels, as outlined in the theoretical model presented in Chapter VI, researchers need to address at the prepilot questionnaire development stage the efficacy of various means for inducing immediacy and salience and the interaction of those means in the questionnaire process. Addressing the need to enhance and control immediacy and salience at the development phase of a questionnaire requires the researcher to contemplate how both the direct and indirect variables of immediacy and salience impact the response rate. A paramount issue of addressing immediacy and salience at the questionnaire development phase is whether or not a researcher can intelligently predict what the salience and immediacy of a questionnaire will be to a respondent. Although testing this concept in the proposed theory and model extends beyond the scope of this dissertation, it can be illustrated that this aspect of the theory is testable.

Therefore, this chapter presents generalized methods and procedures for empirically testing the theoretical model by predicting the immediacy and salience of a questionnaire at the prepilot phase. The required methodology is discussed in the following four sections: (a) Instruments, (b) Population and Sample, (c) Procedures, and (d) Analysis of Data.

Instrument

An instrument for an empirical analysis of the proposed theory and model needs to be designed to determine if ratings of a questionnaire's immediacy and salience for a particular population/sample would correspond with and be predictive of a questionnaire response rate, that is, does a rating of a questionnaire's immediacy and salience--that can be made by examining the questionnaire's topic and sponsorship--correlate with the achieved response rate of the mailed questionnaire.

To design and develop the instrument, completed mailed questionnaire research studies with known response rates and full reports of the researchers' objectives and methodology will be required. To limit the number of intervening variables that could exist in the instrument's construction, a number of mailed questionnaire studies from one academic discipline, administered over a short period of time, with a wide geographic distribution would be needed. For example, the doctoral dissertations used in the literature review synthesis of Chapter V would meet the prescribed criteria, although "history" as a threat to validity would need to be addressed if these dissertations were actually used.

From the available pool, a sampling of mailed questionnaire studies would be selected that use identical or similar methodology in the construction and administration process of the questionnaire. The sampling would have a graduated range of response rates, so that the sample could

provide a full range of prediction ratings concerning immediacy and salience.

In developing the instrument, the following constructs should be extracted from each dissertation study: (a) the respondent sample and its geographic distribution, (b) the survey's sponsor and sponsoring institution, and (c) the topic and objectives of each questionnaire survey. A preliminary example of a proposed instrument has been developed and is contained in Appendix D. A bibliography of the dissertation studies used to develop the instrument is contained in Appendix E.

An examination of the proposed instrument reveals that it is displayed in a five-column matrix format, with the recommended constructs, as listed above, in the three center columns and Likert Rating Scales, of 1-5, in the outside columns. The subjects completing the instrument, those knowledgeable about research in the subject area chosen, will be asked to rate each questionnaire on the following four criteria: (a) how important or how salient the topic would be to the respondent, (b) how important or how salient the sponsor would be to the respondent, (c) how immediately the respondent would return a questionnaire on the topic, and (d) how immediately the respondent would return a questionnaire to the sponsor. A rating of 1 on the Likert Rating Scale would indicate low salience or low immediacy, and a 5 rating would indicate high salience or high immediacy.

The salience rating factors are grouped together in the first section of the instrument and the immediacy rating factors are grouped together in the second section. The instrument's cover sheet contains general demographic questions asked of the subjects to further analyze rating responses. Two instruction sheets on how to rate salience and how to rate immediacy are also included with the instrument.

The proposed instrument would also need to be evaluated to determine its reliability and validity. Assessment concerning clarity, ease in data collection, format, and instrument application to the research design objectives would need to be made.

Population

The ideal population required to complete the ratings of immediacy and salience on the proposed instrument is still uncertain. The subjects most knowledgeable on what was salient and immediate to the respondents of the mailed questionnaire surveys used in the development of the instrument would be the respondents and nonrespondents themselves, because only the respondents to whom the original questionnaires were sent would know for certain what their personal costs were. The objective, however, in developing the instrument for this proposed analysis is to determine if survey researchers who might construct and administer a mailed questionnaire on a specific topic could predict, at the prepilot phase, the questionnaire's immediacy and salience

to the respondent sample. Therefore, the target population for testing the theory would be any group of researchers responsible for constructing and administering a questionnaire on the specific topic.

Procedures

The instrument for this analysis would be distributed to the subjects who agreed to participate. The purpose of the research project would be explained to each subject along with instructions on how to complete each rating form. Subjects would be allowed to complete the rating forms at their own pace.

Analysis of Data

The data collected from the completed instruments would be coded and prepared for analysis. Correlational statistics would be used to determine the extent to which subjects' ratings of immediacy and salience predict the questionnaire's known response rate. Strong correlation--as set forth in the theoretical model of Chapter VI--of immediacy and salience ratings that coincide with the achieved response rates would validate the proposed theoretical model. In addition, correlation coefficients that result from this data analysis would illuminate possible causal factors of response that could later be tested in studies in which experimental or quasi-experimental design methods could be used.

Conclusions on Testing the Proposed Theory

If the methodology proposed above can be carried out and the instrument administered to an appropriate sample, and if data analysis shows that judgements of immediacy and salience correlate with known achieved response rates, researchers could be well on their way to reliably making accurate judgments about immediacy and salience at the prepilot phase of a mailed questionnaire's development. In addition, the testing of the theory by the means recommended could provide the launching needed for its proof.

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This research study has been instrumental in establishing a theoretical foundation for the mailed questionnaire response process through the systematic transfer of thought into data, data into reasons, reasoning into assumptions, assumptions into conclusions, and then onward to postulation for predictions. The objectives and research questions set forth in Chapter I have been realized.

This dissertation research study (a) developed an interdisciplinary theoretical framework for the mailed questionnaire process, (b) identified 13 determinants of response costs in the mailed questionnaire process, (c) determined how the proposed framework clarifies in the research literature that immediacy and salience are the most significant determinant variables of response rates, (d) proposed a theory and theoretical model that explain and illustrate the interaction of immediacy and salience in determining response rate levels, and (e) recommended a method for testing the proposed theory and for utilizing the proposed theory to achieve high response rates in future mailed questionnaire studies.

Conclusions

The theory that has been proposed on immediacy and salience as significant determinants of response rates is based on common knowledge. Individuals operate on a system of salience and immediacy. People formulate paradigms of operational values reflective of the salient factors in their lives, but all too often the same people find themselves in a management warp of immediacy. The stress and turbulence of daily living are spiraling and an ever-increasing struggle of balancing immediacy and salience in individual lives should prod survey researchers into a new paradigm on how to perceive and improve the mailed questionnaire process, through pursuing a complete understanding of these two significant determinants of response costs.

Survey researchers have generally approached the process of improving mailed questionnaire response as a linear task of predictability (Wheatley, 1993). Methodologists have provided elaborate design models, which suggest that, if the prescribed design process is followed step by step, paying strict attention to detail, high response rates will be achieved in mailed questionnaire studies (Dillman, 1978).

Simultaneously, hundreds of researchers have approached the response-rate concern research effort, in the same manner. For over three decades, many have continued to conduct traditionally time-honored empirical tests that answer inquiries surrounding the response inducement-

centered view. Both of these approaches reflect a belief that only through clear models, elaborate guidelines, and multiple formats can predictably high response-rate results be achieved (Wheatley, 1993).

Immediacy and salience as significant determinants of response rates, however, are not linear. They operate in a "duet of opposition and resonance" (Wheatley, 1993, p. 22), as portrayed earlier in the theoretical model. When we are trying to control immediacy and salience in the mailed questionnaire process--specifically as indirect determinants of response costs that generate from the private realm of a respondent's life--we are seeking to establish order that has no predictability, for even very small changes in an individual's personal realm can impact immediacy and salience in very significant ways (Wheatley, 1993).

As researchers step back to observe salience and immediacy over time, however, by noticing their patterns and trends, they will begin to observe and understand their order. The interdisciplinary theoretical framework, along with the proposed theory and model that have been created, establish a strong foundation toward making this task possible. Then, through reliable and valid analysis of the salient and immediacy constructs and the other 11 determinants of response costs, researchers will be able to verify and validate the patterns of "wholeness" on how to predict, control, and establish high response rates in the mailed questionnaire process.

Researchers need to ask at the prepilot phase of a questionnaire's development, What is the immediacy and salience of this mailed questionnaire research study in the life of the respondent? If salience is lacking, do I have the wrong sample responding? If immediacy is lacking, how might it be enhanced or compensated? If neither salience nor immediacy exists, why then this method of investigation? Perhaps the most important task research methodologists can accomplish as a result of the formation of the theory in this study is to communicate to future researchers the ever-present influence that immediacy and salience will play in a person's decision to respond to the mailed questionnaire.

It is imperative that at this point in time, education survey researchers not allow the following statement by Plato (trans. 1963) to be prophetic concerning the future use of the proposed theory and model. "Some when confronted with intellectual work, they become comatose and do nothing but yawn" (p. 213).

Recommendations for Further Research

Based on the results of this study, the following are recommendations for further research:

In regards to the interdisciplinary theoretical framework:

1. The interdisciplinary theoretical framework should be used as a foundation for refining the theory that has been proposed, specifically as

it is empirically tested and as more is discovered about the response rate phenomena.

2. The theoretical framework should be used as a foundation for evaluating issues that arise in the future concerning the mailed questionnaire process.

3. The theoretical framework should be used as a foundation for formulating complementary and competing theories on mailed questionnaire response.

4. The theoretical framework should be used to evaluate the conclusions of other mailed questionnaire research studies.

5. The categorization of the constructs as assigned to the various scientific disciplines in the theoretical framework needs to be operationalized and verified.

6. The 13 determinants of response costs outlined in the framework need to be operationalized and verified.

7. The other 11 determinants of response costs need to be investigated in relation to their impact upon the overall response rate.

8. The theoretical framework and the proposed theory should be periodically enhanced through critical thinking and empirical analysis.

In regard to the proposed theory and model on immediacy and salience:

9. The proposed theory on immediacy and salience as significant determinants of response rates needs to be tested empirically by utilizing

the methodology outlined, along with and in addition to other suitable methodology.

10. The constructs in a respondent's personal realm that impede upon salience and immediacy, and how they correlate with the various generalized populations, need to be identified.

11. The percentage of a mailed questionnaire's response rate that can be explained by the immediacy and salience constructs, both separately and combined, needs to be verified.

12. Once salience and immediacy are proven predictable, the use of specified constructs to alter or enhance the response rate of a mailed questionnaire survey needs to be identified.

13. The impact of issues evolving from specialized populations, such as multicultural and persons with disabilities, upon immediacy and salience in the response process needs to be explored.

14. Rewards offered to compensate the respondent could be examined in relationship to the roles of immediacy and salience. Rewards are offered as a benefit to the costs of responding. Could intrinsic rather than monetary rewards be offered? For example, if the respondent completed and returned the questionnaire--in return for the respondent's immediate attention to the task requested--the researcher could offer to render service in an area of perceived salience to the respondent. An intrinsic reward swaps time expended. That is the resource sacrificed by

the respondent to complete the mailed questionnaire. Intrinsic offers could provide true compensation rather than the concept of a reward that monetary enclosures offer (Dillman, 1978).

A Final Thought

The personal aspirations of the present researcher concerning this theoretical research project are best expressed in this quote by Albert Einstein. "There could be no fairer destiny for any . . . theory than that it should point the way to a more comprehensive theory in which it lives on, as a limiting case" (as cited in Popper, 1965, p. 139).

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APPENDIXES

APPENDIX A

A Bibliography of Research Studies Used to Examine the Use of Response Inducement Techniques on the Percentage Rate of Return

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APPENDIX B

Coding Criteria for Methodological Techniques Used in a Comparison of Mailed Questionnaire Research on High Versus Low Response-Rate Studies

COLUMNS	CRITERIA
IDENTIFICATION	
1 - 3	STUDY ID NUMBER
4 - 7	SAMPLE SIZE
8 - 9	YEAR OF STUDY
10 - 12	TOTAL PERCENT RETURNED
13 - 14	PERCENT RETURNED AFTER 1ST MAILING Missing data, indicates not reported
QUESTIONNAIRE FORMAT	
15 - 16	QUESTIONNAIRE PAGE LENGTH
17 - 19	NUMBER OF ITEMS REQUIRING RESPONSE
20	SPACING 1 Single spaced questions, DS between questions 2 Double spaced
21	PRINT FONT SIZE 1 Reduced 2 Normal 3 Enlarged
22	PAGE SIZE 1 Small 2 Regular (8 1/2" x 11") 3 Large
23	PRINTING MODE 1 Typeset professionally 2 Computer or Typewriter Print

QUESTIONNAIRE CONTENT

24 QUESTIONNAIRE CONTENT THREAT
- 1 Low
- 2 Medium
- 3 High

25 PERCEIVED COMPLETION TIME - QUESTIONNAIRE PERCEPTION
- 1 Short
- 2 Medium
- 3 Long

26 KNOWLEDGE NEEDED FOR COMPLETION
- 1 Untrained
- 2 Some familiarity with subject content
- 3 Trained in Subject

27 QUESTION FORMAT
- 1 All closed-ended questions
- 2 Mostly closed-ended questions
- 3 Equal amounts of closed and open questions
- 4 Mostly open-ended questions
- 5 All open-ended questions

COMMUNICATION

28 PRE-NOTIFICATION
- 1 No
- 2 Yes

29 PLACE OF RECEPTION
- 1 Unknown
- 2 Home
- 3 Work
- 4 School
- 5 Home and/or Work

30 COVER LETTER SALUTATION
- 1 Personalized greeting
- 2 Form greeting

31 COVER LETTER CLOSING
- 1 Personalized - i.e. Sincerely with name
- 2 Form

32 COVER LETTER SIGNATURE
- 1 Handwritten (possibly with name typed underneath)
- 2 Typed or not signed

33 LETTERHEAD SPONSORSHIP
- 1 No letterhead
- 2 Type unknown - used but letterhead was not included in the printing of the dissertation
- 3 Department of research origin
- 4 Higher campus department at same research institution
- 5 Government agency
- 6 Educational agency other than university
- 7 Commercial agency

34 SIGNATURE SPONSORSHIP
- 1 No signature
- 2 Graduate student researcher
- 3 Graduate student first / Professor second
- 4 Professor first / Graduate student second
- 5 Professor
- 6 Person of rank above department level
- 7 Person of rank from outside organization
- 8 Graduate student as person of rank from outside organization

35 SIGNATURE GENDER
- 1 Male
- 2 Female
- 3 Both Male & Female
- 4 No signature

36 COMPLETION TIME PROJECTED IN COVER LETTER
- 1 No
- 2 Yes

37 - 38 AMOUNT OF TIME PROJECTED
Missing data indicates not projected
A few minutes to complete - coded as 05 minutes
10-15 minutes coded as 13 minutes

39 DEADLINE FOR RETURN STATE IN COVER LETTER
1 No
2 Yes (date given)
3 At earliest convenience / as soon as possible / prompt response

40 HOW LONG TO RESPOND
1 Not given
2 Few day / prompt completion
3 Several days
4 1 week
5 Few weeks
6 1 month

41 - 42 MONTH QUESTIONNAIRE WAS MAILED
01 January
02 February
03 March
04 April
05 May
06 June
07 July
08 August
09 September
10 October
11 November
12 December

43 RESEARCH ENDORSED BY OUTSIDE AGENCY
1 None
2 Letter included with mail out
3 Name of agency included in cover letter

44 RETURN ENVELOPE PROVIDED
1 No
2 Yes, indicates in cover letter
3 Yes, indicates on questionnaire

45 ANONYMITY PROMISED
- 1 Not promised
- 2 Promised

46 CONFIDENTIALITY
- 1 Not promised
- 2 Promised

47 COVER LETTER APPEAL
- 1 Egoistic (self-interest)
- 2 Altruistic (welfare of others)
- 3 Scientific (knowledge)
- 4 Help the researcher
- 5 Help the / our system

48 RESPONSE VALUED - IMPORTANCE OF THEIR RESPONSE EXPRESSED
- 1 No expression
- 2 Minor expression
- 3 Major expression

49 LEVEL OF THREAT PROJECTED IN COVER LETTER
- 1 Low
- 2 Medium
- 3 High

50 INCENTIVES OFFERED
- 1 Not offered
- 2 Monetary (cash)
- 3 Gift

51 TYPE OF INCENTIVE
- 1 Nothing
- 2 One dollar
- 3 Pencil

52 WHEN INCENTIVE WAS RECEIVED
- 1 Nothing promised
- 2 Enclosed
- 3 Promised upon return

FOLLOW-UP

53 TYPE OF FOLLOW-UP
- 1 None
- 2 Letter
- 3 Postcard
- 4 Phone call
- 5 Personal contact
- 6 Letter first / phone call second
- 7 Postcard first / letter second

54 SECOND QUESTIONNAIRE INCLUDED IN FOLLOW-UP
- 1 No / Do not know / No follow-up
- 2 Yes

55 FOLLOW-UP INCENTIVES OFFERED
- 1 Not offered
- 2 Monetary (cash)
- 3 Gift

56 FOLLOW-UP INCENTIVE RECEIVED
- 1 Nothing
- 2 Something

57 WHEN FOLLOW-UP WAS RECEIVED
- 1 Nothing
- 2 Enclosed
- 3 Promised

58 FOLLOW-UP THREAT
- 1 Low
- 2 Medium
- 3 High

62 [out-of-order] NUMBER OF FOLLOW-UPS
- 0 None
- 1 One
- 2 Two
- 3 Three

POSTAGE

59 TYPE OF POSTAGE
- 1 Unknown
- 2 Commemorative
- 3 Special delivery
- 4 Certified mail
- 5 Stamped first class
- 6 Third class
- 7 Bulk mail

60 RETURN POSTAGE PROVIDED
- 1 No
- 2 Postage unknown / self-addressed envelope yes
- 3 Yes, self addressed envelope yes

GEOGRAPHY

61 GEOGRAPHICAL LOCATION OF SAMPLE
- 1 Campus
- 2 Local community
- 3 Regional (county)
- 4 Multi-regional (multi-county)
- 5 State / specialized population (Province)
- 6 National / specialized population
- 7 National / general population
- 9 Multi-state [out-of order]

63 POPULATION COMPOSITION
- 1 Parent
- 2 Students
- 3 Teachers / faculty
- 4 Administrators (education)
- 5 Staff (personnel)
- 6 Executive personnel (outside agency)

APPENDIX C

A Bibliography of Dissertation Studies Used to Examine Methodological Techniques Used in a Comparison of Mailed Questionnaire Research on High Versus Low Response-Rate Studies

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PERSONAL DATA SHEET

INDICATE THE FOLLOWING:

1. GENDER

☐ Male
☐ Female

2. AGE

☐ 20-29
☐ 30-39
☐ 40-49
☐ 50-59
☐ 60 or over

3. RATE YOUR PERSONAL INTEREST LEVEL IN EDUCATIONAL TOPICS, ISSUES & CONCERNS.

Low Interest 1 2 3 4 5 High Interest

4. RATE YOUR PERSONAL KNOWLEDGE LEVEL OF EDUCATIONAL **TOPICS, ISSUES & CONCERNS.**

Not Knowledgeable 1 2 3 4 5 Highly Knowledgeable

5. EDUCATION - Complete all that apply

☐ Have Received a Bachelor's Degree - Specify Major _____

☐ Master's Degree Candidate - Specify Major _____

☐ Have Received a Master's Degree - Specify Major _____

☐ Doctoral Degree Candidate - Specify Major _____

☐ Have Received a Doctoral Degree - Specify Major _____

6. EMPLOYMENT EXPERIENCE - List your current and most recent 3 previous professional employment positions and the length of time employed.

Position	Length of Employment

7. RESIDENCY - List the states in which you have resided as a permanent residence for a significant length of time.

State	Length of Residency

RATING SALIENCE
INSTRUMENT #1

SALIENCE IS DEFINED AS: The quality of being important, prominent or noticeable. Factors of salience are closely allied with a value system. When salience is "acted upon," an individual is choosing to do or act upon the things they value, or the things that are important to them.

It has been hypothesized that "salience" is a significant behavior-motivating variable in the decision to return a mailed questionnaire; i.e. an individual makes a decision to complete and return a mailed questionnaire if the questionnaire's topic, sponsor, institution, and/or geographic proximity are important to the respondent. Salience can be motivated politically, psychologically, sociologically, geographically, or aesthetically.

The research question at hand is, **"Can the salience or the importance of a mailed questionnaire's topic or sponsor, to the respondent, be determined?"** and if so **"Does the salience rating serve as a predictor of future mailed questionnaire response rates?** To assist in answering these questions, please complete the attached rating forms.

DIRECTIONS: 16 SCENARIOS FROM QUESTIONNAIRES THAT WERE ACTUALLY MAILED TO A SAMPLE POPULATION, APPEAR ON THE FOLLOWING 4 PAGES. CONSIDER THE OVERALL LIFE CIRCUMSTANCES OF EACH RESPONDENT GROUP, AND DETERMINE HOW IMPORTANT OR HOW SALIENT EACH TOPIC AND EACH SPONSOR WOULD BE TO THE RESPONDENT. INDICATE YOUR PERCEIVED JUDGEMENT FOR EACH SCENARIO ON THE APPROPRIATE RATING SCALE. A GLANCE AT THE RATING SCALE ON THE FOLLOWING PAGE WILL HELP TO CLARIFY THESE INSTRUCTIONS.

Rate how IMPORTANT TOPIC (A) would be to the RESPONDENTS (B)	A TOPIC ➡ HOW IMPORTANT WOULD THIS TOPIC BE: ➡	B RESPONDENTS To these people?	C ⬅ SPONSOR HOW IMPORTANT WOULD ⬅ THIS SPONSOR BE:	Rate how IMPORTANT SPONSOR (C) would be to the RESPONDENTS (B)
NOT IMPORTANT 1 2 3 4 5 VERY IMPORTANT				NOT IMPORTANT 1 2 3 4 5 VERY IMPORTANT
1 2 3 4 5	Critical components of successful two-year college foundations. (The Foundation is a campus office that seeks money or gift donations for a college.)	The Foundation Resource Administrators at various two-year colleges, located in the United States. (The Foundation is a campus office that seeks money or gift donations for a college. The administrator would oversee that office.)	A task force chairperson from the National Council for Resource Development (NCRD). (NCRD is an affiliate of The American Association of Community and Junior (two-year) Colleges.)	1 2 3 4 5
1 2 3 4 5	The importance of the various components of lesson planning, to determine if what is taught at the university level to the home economics student teachers is what is needed once they are teaching home economics at the secondary level.	The junior or senior high school home economics cooperating teachers who teach in one of seven inter-mountain western states. (A cooperating teacher is the regular teacher who is occasionally assigned a student teacher from a local university.)	A home economics teacher educator who teaches at Idaho State University. (A teacher educator is a university professor who is responsible for training student teachers.)	1 2 3 4 5
1 2 3 4 5		The home economics teacher educators at the major universities in seven inter-mountain western states. (A teacher educator is a university professor who is responsible for training student teachers.)		1 2 3 4 5
1 2 3 4 5	Implementing minimum academic competency requirements as a condition for high school graduation.	The superintendents of the forty public school districts in Utah.	The State Superintendent of Public Instruction at the Utah State Office of Education	1 2 3 4 5

Rate how IMPORTANT TOPIC (A) would be to the RESPONDENTS (B)	A TOPIC ➡ HOW IMPORTANT WOULD THIS TOPIC BE: ➡	B RESPONDENTS To these people?	C ➡ SPONSOR HOW IMPORTANT WOULD ➡ THIS SPONSOR BE:	Rate how IMPORTANT SPONSOR (C) would be to the RESPONDENTS (B)
NOT IMPORTANT 1 2 3 4 5 VERY IMPORTANT				NOT IMPORTANT 1 2 3 4 5 VERY IMPORTANT
1 2 3 4 5	The effects of a principal's job pressures upon their leadership characteristics and their effectiveness as a principal, as measured by the respondent's completion of two commercially prepared instruments.	Three hundred randomly selected elementary school principals throughout California.	An Elementary School Principal from Norris School District in Bakersfield, California	1 2 3 4 5
1 2 3 4 5	Determining the extent to which middle schools' organizational patterns and curricular practices reflect the practices recommended for middle schools in the current professional literature.	The nine middle school principles from the Jordan School District in Salt Lake County, Utah.	A Teacher Specialist from Oquirrh Hills Middle School in Jordan School District in Riverton, Utah.	1 2 3 4 5
1 2 3 4 5		Ten exemplary or model middles schools throughout the United States, identified as such in a book titled The Exemplary Middle School.		1 2 3 4 5
1 2 3 4 5		A stratified sample of middle schools from various geographical regions of the United States.		1 2 3 4 5
1 2 3 4 5	The high school principal as an instructional leader of new teachers.	A group of educational leaders in Utah including; 93 high school principals, the superintendents of the 40 school districts, professional personnel responsible for monitoring teacher certification at the Utah State Office of Education, and full-time faculty in the Department of Educational Leadership at Brigham Young University.	Director of Secondary Education for Iron County School in Cedar City, Utah (Endorsed by the Certification Department of the Utah State Office of Education.)	1 2 3 4 5

Rate how IMPORTANT TOPIC (A) would be to the RESPONDENTS (B)	A TOPIC ➡ HOW IMPORTANT WOULD THIS TOPIC BE: ➡	B RESPONDENTS To these people?	C ➡ SPONSOR HOW IMPORTANT WOULD ➡ THIS SPONSOR BE:	Rate how IMPORTANT SPONSOR (C) would be to the RESPONDENTS (B)
NOT IMPORTANT 1 2 3 4 5 VERY IMPORTANT				NOT IMPORTANT 1 2 3 4 5 VERY IMPORTANT
1 2 3 4 5	Developing policies, procedures and forms for school district personnel to report suspected child abuse.	The seven Child Protection Agency Supervisors from seven selected counties in California.	The Superintendent of Kern County School District, Bakersfield, California	1 2 3 4 5
1 2 3 4 5		The superintendent of thirty-three school districts from seven selected counties in California.		1 2 3 4 5
1 2 3 4 5	Information and ingredients necessary to measure or determine instructional program effectiveness of mathematics instruction.	The administrators and teachers of mathematic instructional programs at fifty-one community colleges in California.	Dean of Instruction for Sciences, Mathematics and Physical Education for the San Luis Obispo County Community College District in California	1 2 3 4 5
1 2 3 4 5	A principals' acceptance or non-acceptance of "effective schools" characteristics as described in the literature, the extent to which these characteristics are found in Utah's elementary schools, and the percent of educational funding that should be spent for each characteristic.	One hundred randomly selected elementary school principals from Utah.	The Utah Association of Elementary School Principals	1 2 3 4 5

Rate how IMPORTANT TOPIC (A) would be to the RESPONDENTS (B)	A TOPIC ➡ HOW IMPORTANT WOULD THIS TOPIC BE: ➡	B RESPONDENTS To these people?	C ⬅ SPONSOR HOW IMPORTANT WOULD ⬅ THIS SPONSOR BE:	Rate how IMPORTANT SPONSOR (C) would be to the RESPONDENTS (B)
NOT IMPORTANT 1 2 3 4 5 VERY IMPORTANT				NOT IMPORTANT 1 2 3 4 5 VERY IMPORTANT
1 2 3 4 5	An evaluation of the first year outcomes of the Idaho First Year Teacher Mentoring Program, to facilitate sharing with interested parties (such as state legislators, school superintendents, etc.), the benefits of mentoring.	The first year public school teachers in the State of Idaho.	The Superintendent of South Lemhi (Salmon, Idaho) School District (Endorsed by the Director of Teacher Certification at the Idaho State Office of Education.)	1 2 3 4 5
1 2 3 4 5		The designated mentor teachers from the State of Idaho. (A mentor teacher would be an experienced wise and trusted teacher who serves as a tutor to a new incoming teacher.)		1 2 3 4 5
1 2 3 4 5		School district superintendents in the State of Idaho.		1 2 3 4 5

RATING IMMEDIACY
INSTRUMENT #1 - B

IMMEDIACY IS DEFINED AS: **The quality or state of urgency, direct action and/or freedom from immediate intervention. Immediacy is action oriented. When immediacy is involved, it will dictate the urgency and speed of one's efforts.**

It has been hypothesized that "immediacy is also a significant behavior-motivating variable in the decision to return a mailed questionnaire; i.e. an individual makes a decision to complete and return a mailed questionnaire if the questionnaire's topic and sponsor are more immediately important than other pressing temporal and time constraints. Immediacy is management motivated.

The research question at hand is, **"Can the immediacy or the urgency of a mailed questionnaire's topic or sponsor, to the respondent, be determined?"** and if so, **"Does the immediacy rating serve as a predictor of mailed questionnaire response rates?** To assist in answering these questions, please complete the attached rating forms.

DIRECTIONS: THE SAME 16 SCENARIOS FROM THE RATINGS YOU DID ON SALIENCE, APPEAR ON THE FOLLOWING 4 PAGES ARE . REVIEW AGAIN THE SCENARIOS, CONSIDER THE OVERALL LIFE CIRCUMSTANCES OF EACH RESPONDENT GROUP, AND DETERMINE HOW IMMEDIATELY OR URGENTLY THE RESPONDENT WOULD REACT TO A TOPIC OR SPONSOR, IN LIGHT OF OTHER TIME AND TEMPORAL RESPONSIBILITIES THAT THEY FACE. INDICATE YOUR PERCEIVED JUDGEMENT FOR EACH SCENARIO ON THE APPROPRIATE RATING SCALE. A GLANCE AT THE RATING SCALE ON THE FOLLOWING PAGE WILL HELP TO CLARIFY THESE INSTRUCTIONS.

Rate how IMMEDIATELY the RESPONDENTS (B) would complete and return a questionnaire on TOPIC (A)	A TOPIC Complete and return a mailed questionnaire on this topic?	B ← RESPONDENTS → HOW IMMEDIATELY WOULD THESE PEOPLES: ← →	C SPONSOR Complete and return a mailed questionnaire from this sponsor?	Rate how IMMEDIATELY the RESPONDENTS (B) would complete and return a questionnaire from SPONSOR (C)
NOT IMMEDIATELY 1 2 3 4 5 IMMEDIATELY				NOT IMMEDIATELY 1 2 3 4 5 IMMEDIATELY
1 2 3 4 5	Critical components of successful two-year college foundations. (The Foundation is a campus office that seeks money or gift donations for a college.)	The Foundation Resource Administrators at various two-year colleges, located in the United States. (The Foundation is a campus office that seeks money or gift donations for a college. The administrator would oversee that office.)	A task force chairperson from the National Council for Resource Development (NCRD). (NCRD is an affiliate of The American Association of Community and Junior (two-year) Colleges.)	1 2 3 4 5
1 2 3 4 5	The importance of the various components of lesson planning, to determine if what is taught at the university level to the home economics student teachers is what is needed once they are teaching home economics at the secondary level.	The junior or senior high school home economics cooperating teachers who teach in one of seven inter-mountain western states. (A cooperating teacher is the regular teacher who is occasionally assigned a student teacher from a local university.)	A home economics teacher educator who teaches at Idaho State University. (A teacher educator is a university professor who is responsible for training student teachers.)	1 2 3 4 5
1 2 3 4 5		The home economics teacher educators at the major universities in seven inter-mountain western states. (A teacher educator is a university professor who is responsible for training student teachers.)		1 2 3 4 5
1 2 3 4 5	Implementing minimum academic competency requirements as a condition for high school graduation.	The superintendents of the forty public school districts in Utah.	The State Superintendent of Public Instruction at the Utah State Office of Education	1 2 3 4 5

Rate how IMMEDIATELY the RESPONDENTS (B) would complete and return a questionnaire on TOPIC (A)	A TOPIC Complete and return a mailed questionnaire on this topic?	B ← RESPONDENTS → HOW IMMEDIATELY WOULD THESE PEOPLES: ← →	C SPONSOR Complete and return a mailed questionnaire from this sponsor?	Rate how IMMEDIATELY the RESPONDENTS (B) would complete and return a questionnaire from SPONSOR (C)
NOT IMMEDIATELY 1 2 3 4 5 IMMEDIATELY				NOT IMMEDIATELY 1 2 3 4 5 IMMEDIATELY
1 2 3 4 5	The effects of a principal's job pressures upon their leadership characteristics and their effectiveness as a principal, as measured by the respondent's completion of two commercially prepared instruments.	Three hundred randomly selected elementary school principals throughout California.	An Elementary School Principal from Norris School District in Bakersfield, California	1 2 3 4 5
1 2 3 4 5	Determining the extent to which middle schools' organizational patterns and curricular practices reflect the practices recommended for middle schools in the current professional literature.	The nine middle school principles from the Jordan School District in Salt Lake County, Utah.	A Teacher Specialist from Oquirrh Hills Middle School in Jordan School District in Riverton, Utah.	1 2 3 4 5
1 2 3 4 5		Ten exemplary or model middles schools throughout the United States, identified as such in a book titled The Exemplary Middle School.		1 2 3 4 5
1 2 3 4 5		A stratified sample of middle schools from various geographical regions of the United States.		1 2 3 4 5
1 2 3 4 5	The high school principal as an instructional leader of new teachers.	A group of educational leaders in Utah including; 93 high school principals, the superintendents of the 40 school districts, professional personnel responsible for monitoring teacher certification at the Utah State Office of Education, and full-time faculty in the Department of Educational Leadership at Brigham Young University.	Director of Secondary Education for Iron County School in Cedar City, Utah (Endorsed by the Certification Department of the Utah State Office of Education.)	1 2 3 4 5

Rate how IMMEDIATELY the RESPONDENTS (B) would complete and return a questionnaire on TOPIC (A)	A TOPIC Complete and return a mailed questionnaire on this topic?	B ➡ RESPONDENTS ➡ HOW IMMEDIATELY WOULD THESE PEOPLES: ➡	C SPONSOR Complete and return a mailed questionnaire from this sponsor?	Rate how IMMEDIATELY the RESPONDENTS (B) would complete and return a questionnaire from SPONSOR (C)
NOT IMMEDIATELY 1 2 3 4 5 IMMEDIATELY				NOT IMMEDIATELY 1 2 3 4 5 IMMEDIATELY
1 2 3 4 5	Developing policies, procedures and forms for school district personnel to report suspected child abuse.	The seven Child Protection Agency Supervisors from seven selected counties in California.	The Superintendent of Kern County School District, Bakersfield, California	1 2 3 4 5
1 2 3 4 5		The superintendent of thirty-three school districts from seven selected counties in California.		1 2 3 4 5
1 2 3 4 5	Information and ingredients necessary to measure or determine instructional program effectiveness of mathematics instruction.	The administrators and teachers of mathematic instructional programs at fifty-one community colleges in California.	Dean of Instruction for Sciences, Mathematics and Physical Education for the San Luis Obispo County Community College District in California	1 2 3 4 5
1 2 3 4 5	A principals' acceptance or non-acceptance of "effective schools" characteristics as described in the literature, the extent to which these characteristics are found in Utah's elementary schools, and the percent of educational funding that should be spent for each characteristic.	One hundred randomly selected elementary school principals from Utah.	The Utah Association of Elementary School Principals	1 2 3 4 5

Rate how IMMEDIATELY the RESPONDENTS (B) would complete and return a questionnaire on TOPIC (A)	A TOPIC Complete and return a mailed questionnaire on this topic?	B ➡ RESPONDENTS ➡ HOW IMMEDIATELY WOULD THESE PEOPLES: ➡ ➡	C SPONSOR Complete and return a mailed questionnaire from this sponsor?	Rate how IMMEDIATELY the RESPONDENTS (B) would complete and return a questionnaire from SPONSOR (C)
NOT IMMEDIATELY IMMEDIATELY				NOT IMMEDIATELY IMMEDIATELY
1 2 3 4 5	An evaluation of the first year outcomes of the Idaho First Year Teacher Mentoring Program, to facilitate sharing with interested parties (such as state legislators, school superintendents, etc.), the benefits of mentoring.	The first year public school teachers in the State of Idaho.	The Superintendent of South Lemhi (Salmon, Idaho) School District (Endorsed by the Director of Teacher Certification at the Idaho State Office of Education.)	1 2 3 4 5
1 2 3 4 5		The designated mentor teachers from the State of Idaho. (A mentor teacher would be an experienced wise and trusted teacher who serves as a tutor to a new incoming teacher.)		1 2 3 4 5
1 2 3 4 5		School district superintendents in the State of Idaho.		1 2 3 4 5

APPENDIX E

A Bibliography of Dissertation Studies Used to Create the Instrument

Carlston, G.L. (1982). The status of the minimum competency requirements as a condition for high school graduation in Utah, 1981-82. Unpublished doctoral dissertation, Department of Educational Administration, Brigham Young University, Provo, UT.

Condie, H.C. (1983). A comparison of attitudes of home economics teacher educators and home economics cooperating teachers regarding lesson planning. Unpublished doctoral dissertation, Department of Secondary Education and Foundations, Brigham Young University, Provo, UT.

Cox, G. (1990). The needs of, and assistance required by, first year teachers and administrators as perceived by participants in Idaho's public school mentor program 1989-90. Unpublished doctoral dissertation, Department of Educational Leadership, Brigham Young University, Provo, UT.

Glandon, B.L. (1987). Critical components of successful two-year college foundations. Unpublished doctoral dissertation, Department of Educational Leadership, Brigham Young University, Provo, UT.

Harrison, D.O. (1988). An assessment of the effective schools literature for school improvement in Utah public elementary schools, 1986-87. Unpublished doctoral dissertation, Department of Educational Leadership, Brigham Young University, Provo, UT.

Kinsinger, B.A. (1981). A study of policies, procedures and forms for child abuse referral and follow-up in selected California and Kern County school districts. Unpublished doctoral dissertation, Department of Educational Administration, Brigham Young University, Provo, UT.

Laing, S.O. (1989). The high school principal as the instructional leader: A study of the utility of a model for instructional leadership. Unpublished doctoral dissertation, Department of Educational Leadership, Brigham Young University, Provo, UT.

Pierucci, R.P. (1985). Burnout levels and leadership characteristics of California elementary school principals. Unpublished doctoral dissertation, Department of Educational Administration, Brigham Young University, Provo, UT.

Schindler, J.F. (1982). A comparative study of the implementation of recommended middle school principles among selected schools. Unpublished doctoral dissertation, Department of Secondary and Higher Education and Foundations, Brigham Young University, Provo, UT.

Stork, G.H. (1981). A model for evaluating academic program effectiveness: A study of mathematics instruction. Unpublished doctoral dissertation, Department of Educational Administration, Brigham Young University, Provo, UT.

VITA

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HOME:
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EDUCATION:

Doctor of Philosophy in Psychology - Research and Evaluation Methodology, Utah State University, Emphasis - Survey Research, Program and Curriculum Evaluation in Home, Family, and Educational Concerns, 1996. Dissertation: "An Interdisciplinary Theoretical Framework for the Mailed Questionnaire Process and the Development of a Theory on Immediacy and Salience as Significant Variables of Response Rates."

Post-Graduate Studies in Financial Management of Non-Profit Organizations, Harvard University, Graduate School of Education, 1985.

Masters of Science in Home Economics Teacher Education, Brigham Young University, Minor in Secondary Education, Emphasis - Curriculum Development, Evaluation, and Women's Educational Concerns, 1983. Thesis: "A Comparison of Latter-day Saint Women Re-entry Students and Non-students: Perceptions of Family, Educational, Religious, and Work Background."

Bachelors of Science in Home Economics Education, Brigham Young University, Professional Vocational Teaching Certification, Minor in Clothing and Textiles, Food Service Administration Occupational Endorsement, 1980.

West High School, Salt Lake City, UT, 1974.

EMPLOYMENT EXPERIENCE:

COLLEGE ADMINISTRATION

Ricks College Home Economics Department Chair, Rexburg, ID, 1996 - present.

COLLEGE AND UNIVERSITY TEACHER EDUCATOR:

Ricks College Home Economics Department, Rexburg, ID, 1982 - present. Dept. Curriculum Evaluation, Curriculum Development, Scholarship Endowment Development, Tenure Faculty Status.

Courses Taught:

Concepts of Home Economics Education
Interior Design
Historical Architecture (General Education)
Financial Management
Meal Management
Food Preparation
Personal Clothing Selection
Clothing Construction Skill Techniques
Elementary Clothing Construction
Ricks Home Economics Association
Practical Homemaking for Non-majors.

Campus Committees:

Academic Advising Committee, Chairman
Concerns for Disabled Students Committee
Continuing Faculty Status Committees
Devotional Committee
Vocational Education Committee

Utah State University Secondary Education Department, Logan, UT 1988, 1989, 1990.

Student Teaching Supervisor: Home Economics, English, History, Psychology, Health.

Utah State University Psychology Department, Logan, UT 1988. Research and Teaching Assistantships.

Courses taught:

Educational Psychology
Principles of Learning (Graduate Course)

Brigham Young University Home Economics Education Department, Provo, UT 1980-82.
Graduate Assistant, Student Teacher Supervision and Placement
Courses taught:
Concepts of Home Economics Education
Curriculum Development in Home Economics Education
Teaching CLTX in the Secondary Classroom

HOME ECONOMICS SECONDARY TEACHER:

Timpview High School Family Life Education, Grades 10-12, Provo, UT 1980, 1981. Student Teacher Supervision, FHA/HERO Advisor.
Courses taught:
Family Life Education
Parenting
Child Development
Occupational Child Care

ADDITIONAL WORK EXPERIENCE:

Computer Applications Analyst, Harvard University, Graduate School of Business Administration, Curriculum advisement - computer applications in the business school curriculum, inter-office computer net-working, Boston, MA 1985.

Owner Relations Analyst, Ford Motor Company, Consumer/company relations, Los Angeles, CA 1981.

Consumer Appeals Board Administrator, Ford Motor Company, Administrator of third-party arbitration board, director of relations with outside consumer groups, technical specialists, and company and dealer representatives, Los Angeles, CA, 1980.

Research and Curriculum Specialist, Teacher Educator, Missionary Training Center, Provo, UT 1979, 1980.

Sales Associate, ZCMI Department Stores, all departments, Salt Lake City and Provo, UT 1971-1980.

HONORS:

Teaching Honors

1995 Outstanding Faculty Effort, Merit Pay Recipient - Ricks College
1995 Great Teachers Summit, Western Region - Ricks College Delegate
1995 Exemplary Faculty of the Year Nominee - Ricks College
1992 Distinguished Teaching Award - Ricks College (College's Highest Faculty Teaching Honor)
1992 Outstanding Faculty Effort, Merit Pay Recipient - Ricks College
1991 Ten Years of Service Recognition - Ricks College

Other Professional Honors

1996 Appointed Home Economics Department Chair - Ricks College
1995 AAFCS Distinguished Service Recognition Award - National Nominating Committee Chair
1995 Outstanding Paper Award - Utah Academy of Sciences, Arts and Letters, Education Division
1993 Elected to the AHEA National Nominating Committee
1980 National Consumer Affairs Intern - National Consumer Affairs

Scholarship Honors

1988 National Dean's List, Honorary Award Recognition - Utah State University
1988 Graduate Dean's Honor Roll - Utah State University
1987 Psychology Graduate Assistantship - Utah State University
1982 Phi Kappa Phi National Honors Society - Brigham Young University
1981 Home Economics Graduate Scholarships and Assistantships - Brigham Young University
1981 Belle Wilson Hales Graduate Scholarship - Brigham Young University
1980 Home Economics Commitment to Excellence Award - Brigham Young Univesity
1979 (Kappa) Omicron Nu National Honors Society

Community Honors

1985 Rexburg Standard Journal "Super Good Guy" Award - Rexburg, Idaho

PROFESSIONAL AFFILIATIONS:

American Association of Family and Consumer Sciences (AAFCS)
AAFCS Agency Member Unit - Commission on Community, Technical and Junior Colleges, 1995-97.
IDAFCS SMS Advisor, 1995
AAFCS Nominating Committee, Chair, 1994.

American Home Economics Association (AHEA)
AHEA Nominating Committee, Chair, 1993-94.
AHEA Agency Member Unit - Commission on Community, Technical, and Junior Colleges, Chair-elect, 1994-95.
AHEA Nominating Committee, 1993 - 95, (elected position)
AHEA Agency Member Unit - Commission on Community, Technical, and Junior College Programs Committee, 1992-94.
IDHEA-SMS Advisor, 1992-93.
AHEA Leadership Conference Committee, 1992
AHEA New Achiever Awards Judge, 1992
IDHEA Program Committee, 1991
AHEA New Achiever Awards Judge, 1991
IDHEA-SMS Advisor, 1990-91.
IHEA Mentoring Program Chairman, 1989-90
IHEA-SMS Advisor, 1989-90
IHEA President-elect, 1987-88
IHEA Marketing/Public Relations Chairman, 1985-86
IHEA-SMS Advisor, 1984-85
IHEA Program Chairman, 1983-85

Western Region Home Economics Teacher Educators
Bi-Annual Conference Co-Chair, 1994

American Educational Research Association (AERA)
Home Economics Research Special Interest Group
Survey Research Special Interest Group
Research on Women and Education Special Interest Group
Academic Studying Research Special Interest Group

American Evaluation Association (AEA)
Kappa Omicron Nu National Home Economics Honors Society
Home Economics Education Association (HEEA)
Phi Kappa Phi National Honors Society
Utah Academy of Sciences, Arts and Letters, Education Division

REFEREED PUBLICATIONS:

Christensen, M., (1994). A methodological paradigm of independent variables required for a reliable and valid comparison of academic achievement differences in public versus private schools: Formulated from a deductive meta-analysis of the literature on the Coleman debate. Encyclia - Journal of the Utah Academy of Sciences, Arts and Letters, 71, (accepted for publication).

Christensen, M., (1994). Critical thinking: A practical application model for teaching and learning. Something to Talk About: Bi-Annual Conference Proceedings, Journal of the Western Region Home Economics Teacher Educators, 13, 13-21.

Kiewra, K.A., Mayer, R.E., **Christensen, M.**, Kim, S., Risch, N. (1991). Effects of repetition on recall and note-taking strategies for learning from lectures. Journal of Educational Psychology, 83, No. 1, 120-123.

Kiewra, K.A., DuBois, N.F., **Christensen, M.**, Kim, S., Lindberg, N. (1989). A more equitable account of the note-taking functions in learning from lecture and from text. Instructional Science, 18, 217-232.

INVITED PUBLICATIONS:

Christensen, M., (1995). Volunteerism. Priesthood and Church Organizations, Ed. Ludlow, D.H., Deseret Book, SLC, UT, pp. 453-455.

Christensen, M., (1991). Volunteerism. Encyclopedia of Mormonism, 4, 1539-1540, MacMillan Publishing, Co., New York.

Christensen, M., Rowley, M.L., (1991). Home Economics: Developing cognitive skills. Promoting Home Economics, 4-5. Light, H. Ed., American Home Economics Association.

Rowley, M.L., **Christensen, M.**, (1991). Home as a paradigm. Promoting Home Economics, 6-7. Light, H. Ed., American Home Economics Association.

Christensen, M., (1993). Maxine L. Rowley, PhD, CHE. Biographical Sketches of Distinguished Women Alumni who have contributed to Brigham Young University, BYU Alumni Association.

Christensen, M., (1991). A Handicapped Campus. Faculty Now, 2, No. 3, 1-4. A publication of the Ricks College Faculty Association.

REFEREED NATIONAL PROFESSIONAL RESEARCH PRESENTATIONS:

"An Interdisciplinary Theoretical Framework for the Survey Research Mailed Questionnaire Process and the Development of a Response Rate Theory." Symposium of Theory and Research on Increasing Mailed Questionnaire Return Rates. **Christensen, M.** Ricks College. American Educational Research Association Annual Meeting, San Francisco, CA., April 1995.

"An Analysis of Information and Assistance on Indoor Air Quality Problems in the Homes of the Industrialized World," **Christensen, M.** Ricks College, Rowley, M.L., Brigham Young University. American Home Economics Association Annual Meeting, San Diego, CA., June 1994.

"Dialogue: Theoretical Perspectives in an Interpretive Case Study. . .I Stand Here Ironing," Hawley, J., Moderator; Caffrey, B., **Christensen, M.**, Hawley, J. and Kimball, T., Discussants. Conference of the Coalition of Philosophical and Theoretical Home Economists, sponsored by the College and University Section of the American Home Economics Association, Orlando, FL, June 1993.

"Practical Application in Clothing and Textiles Classes of a Theoretical Framework for Cognitive Development," Rowley, M.L., Brigham Young University, **Christensen, M.**, Ricks College. American Home Economics Association Annual Meeting, Minneapolis, MN., June 1991.

"A Meta-Analysis of Information and Assistance on Indoor Air-Quality Problems in the Homes of the Industrialized World." **Christensen, M.**, Ricks College, Rowley, M.L., Brigham Young University. American Home Economics Association Annual Meeting, Minneapolis, MN., June 1991.

"Effects of Repetition and Organization on Note-Taking and Achievement," Kiewra, K.A., University of Nebraska-Lincoln; **Christensen, M.**, Kim, S., Moss, V., Utah State University. American Educational Research Association Annual Meeting, Boston, MA, April 1990.

"The Effects of Structured and Unstructured Repetition of Videotaped Instruction," Kiewra, K.A., University of Lincoln-Nebraska; **Christensen, M.**, Kim, S., Lindberg, N., Utah State University. American Educational Research Association Annual Meeting, Boston, MA, April 1990.

"The Effects of Note-Taking Format and Study Technique on Performance," Kiewra, K.A., University of Nebraska-Lincoln; Benton, S.L., Kansas State University, **Christensen, M.**, Kim, S., Lindberg, N., Utah State University. American Educational Research Association Annual Meeting, San Francisco, CA, March 1989.

"A More Equitable Account of Note-Taking Functions," Kiewra, K.A., University of Nebraska-Lincoln; DuBois, N.F., State University of New York, Oneonta; **Christensen, M.**, Kim, S., Lindberg, N., Utah State University. American Educational Research Association Annual Meeting, San Francisco, CA, March 1989.

"An Equitable Account of the Note-Taking Functions in Learning from Text," Kiewra, K.A., University of Nebraska-Lincoln; DuBois, N.F., State University of New York, Oneonta; Kim, S., **Christensen, M.**, Lindberg, N., Utah State University. American Educational Research Association Annual Meeting, San Francisco, CA, March 1989.

REFEREED NATIONAL PROFESSIONAL ACADEMIC PRESENTATIONS:

"The Sandwich Institutions" - Examining Community, Junior and Technical College Articulation Agreements with Colleges, Universities and High Schools as a Student Recruitment Initiative, **Christensen, M., Ricks College**. American Association of Family and Consumer Sciences, Nashville, TN, June 1996 (accepted for presentation).

"Investing in Children and Youth through Music: Teaching your Students How to Teach Music to Children," **Christensen, M.**, Ricks College, Bittner, N.R., Salt Lake City School District. American Association of Family and Consumer Sciences, Nashville, TN, June 1996 (accepted for presentation).

"Investing in Children and Youth through Art: Teaching your Students How to Teach Children about Great Art and Artists," **Christensen, M.**, Ricks College, Bittner, N.R., Salt Lake City School District. American Association of Family and Consumer Sciences, Nashville, TN, June 1995 (accepted for presentation).

"Investing in Children and Youth through Literature: Teaching your Students How to Identify Great Literature when Teaching Children," **Christensen, M.**, Ricks College, Bittner, N.R., Salt Lake City School District. American Association of Family and Consumer Sciences, Nashville, TN, June 1994 (accepted for presentation).

"Teaming for Success: Productive Collaborative Efforts for Investment in Youth," **Christensen, M.**, Ricks College; Rowley, M.L., Brigham Young University; Wolf, M.L., University of Idaho Cooperative Extension, Carol W. Kudis, Prince George's Co. Public Schools, Fairfax, VA, Jeanne-Marie Holley, Maryland State Office of Vocational Education. American Association of Family and Consumer Sciences, New Orleans, LA, June 1995.

"Employing Diversity to Give Home Economics Programs Growth and Stability: A New Model Invented for Use at All Levels," **Christensen, M.**, Ricks College, Rowley, M.L., Brigham Young University. American Home Economics Association Annual Meeting, San Diego, CA, June 1994.

"Reconceptualization of 'Home' in the Home Economics Profession," Rowley, M.L., Brigham Young University, **Christensen, M.**, Ricks College. American Home Economics Association Annual Meeting, San Diego, CA, June 1994.

"State Nutrition Councils: Aiming to Turn the Heads of Public Policy Makers," Rowley, M.L., Brigham Young University, **Christensen, M.**, Ricks College. American Home Economics Association Annual Meeting, San Diego, CA, June 1994.

"Common Strands of Successful Two-Year Home Economics Programs - Practical Suggestions for Moving Ahead," **Christensen, M.**, Ricks College, Rowley, M.L., Brigham Young University. American Home Economics Association Annual Meeting, Orlando, FL, June 1993.

REFEREED REGIONAL PROFESSIONAL RESEARCH PRESENTATIONS:

"A Meta-Analysis of the Literature on the Coleman Debate to Determine a Reliable and Valid Methodological Comparison of Academic Achievement Differences in Public versus Private Schools," **Christensen, M.**, Utah State University, Utah Academy of Sciences, Arts & Letters, Spring Meeting, Ogden, UT., May 1994.

"How the Structure of Graphic Organizers Affect Notetaking," Risch, N., Kiewra, K.A., University of Nebraska, **Christensen, M.**, Ricks College, Kim, S., Utah State University, Benton, S.L., Kansas State University. Midwestern Educational Research Association Annual Meeting, Chicago, IL., October 1991.

"The Effects of Structured and Unstructured Repetition of Videotaped Instruction," Kiewra, K.A., University of Nebraska-Lincoln, Mayer, R.E., University of California-Santa Barbara, **Christensen, M.**, Ricks College, Kim, S., Utah State University, Lindberg-Risch, N., University of Nebraska-Lincoln. Midwestern Educational Research Association Annual Meeting, Chicago, IL, October 1990.

REFEREED REGIONAL PROFESSIONAL ACADEMIC PRESENTATIONS:

"Critical Thinking: A Practical Application Model for Teaching and Learning," **Christensen, M.**, Ricks College. Western Region Home Economics Teacher Educator Bi-Annual Conference, San Diego, CA, June 1994.

INVITED NATIONAL PROFESSIONAL ACADEMIC PRESENTATIONS:

"Staying on Course - The Risks and Benefits," **Christensen, M.**, Ricks College. American Home Economics Association Leadership Conference - "Wings that Work." Denver, CO, June 1992.

INVITED REGIONAL PROFESSIONAL ACADEMIC PRESENTATIONS:

"Employing Objectives and Concepts as Critical Catalysts for Effective Teaching," **Christensen, M.**, Ricks College Administration/Faculty Workshop, Rexburg, ID, October 1995.

"Encoding into Memory Technical Data Related to Kitchen and Bath Design Specifications," National Kitchen and Bath Association, Regional Meeting, Rexburg, ID, September 1995.

"The Home - A Synergistic Support Structure for Family Success," **Christensen, M.**, Ricks College, Devotional Address, Ricks College Studentbody, Rexburg, ID, August 1995.

"Employing Objectives and Concepts as Critical Catalysts for Effective Teaching," **Christensen, M.**, Ricks College Administration/Faculty Workshop, Rexburg, ID, February 1995.

"The Value of Mastering Internal Connective Methods of Memory Retention for Encoding Principles of Nutrition," **Christensen, M.**, Ricks College. American Dietetics Association, Southeastern Idaho Student Section, January 1995.

"Cognitive Approaches for Learning and Teaching Information Related to Young Children," **Christensen, M.**, Ricks College. Professional Preschool Educators, National Association for the Education of Young Children, Local Meeting, Rexburg, ID, November 1994.

"Employing Objectives and Concepts as Critical Catalysts for Effective Teaching," **Christensen, M.**, Ricks College Administration/Faculty Workshop, Rexburg, ID, October 1994.

"The Value of Interdisciplinary Learning," **Christensen, M.**, Ricks College. American Society of Interior Designers - Western Region, Rexburg, ID, December 1993.

"Defining our Mission," **Christensen, M.**, Ricks College Faculty Seminar, Rexburg, ID August 1993.

"Cognitive Strategies for Learning and Retaining Information in Interior Design," **Christensen, M.**, Ricks College, American Society of Interior Designers - Western Region, Rexburg, ID, January 1993.

"Cultural Diversity," Rowley, M.L., Brigham Young University, **Christensen, M.**, Ricks College, Bittner, N.R., Salt Lake City School District. Western Regional FHA Conference, Salt Lake City, UT, November 1991.

"What Does This Situation: Majoring in Home Economics Education Require of Me?" **Christensen, M.**, Ricks College. Utah State University Student Member Section, American Home Economics Association, Logan, UT, May 1991.

"The Intervening Variables of Employment Upon the Family Life Of A Retail Merchandise Buyer," **Christensen, M.**, After A Fashion Group, Ricks College, Rexburg, ID, March 1991.

"Learning How To Learn, Or Why Is It That I Always Forget?" **Christensen, M.**, Ricks College, Faculty Lecture Series, Rexburg, ID, October 1990.

"Memory Compatible Learning - Retaining and Recalling From Memory Concepts, Specifications and Names of Goods in Interior Design," **Christensen, M.**, American Society of Interior Design, Ricks College Chapter, Rexburg, ID, Sept. 1988.

"Home As A Paradigm," **Christensen, M.**, Ricks College. Utah State University Student Member Section - American Home Economics Association, Logan, UT, Nov. 1987.

"Ye Are Free to Choose, But After You Choose, You Must Accept the Consequences," **Christensen, M.**, Ricks College. Devotional Address, Ricks College Studentbody, Rexburg, ID, June 1986.

"Professionalism - How to Begin," **Christensen, M.**, Ricks College, Utah Home Economics Student Member Section Annual Meeting, American Home Economics Association, Provo, UT, March 1983.

"Creative Alternatives for Women with Vision," **Christensen, M.**, Panelist, Brigham Young University Annual Women's Conference, Provo, UT, March 1981.

PROFESSIONAL EVALUATIONS OF FUNDED GRANTS:

Principal Evaluator, Proposal Preparation and Authorship, Grant Proposal for "A New Secondary Vocational Education Program, The Alternative Learning Center," Funded by the Idaho State Division of Vocational Education, ($6K), 1995. **Christensen, M.**, Principal Evaluator, Ricks College; Ball, J. Project Director, Madison School District.

Principal Evaluator, Formative and Summative Evaluation Reports, Measurement Development, Proposal Preparation and Authorship, Grant Proposal for the "Alternative Learning Center Childcare Facilities Expansion," Funded by the Idaho Child Care and Development Block Grants - An Early Childhood Development Project, Region 7 ($21.5K), 1994. **Christensen, M.**, Principal Evaluator, Ricks College; Ball, J. Project Director, Madison School District.

Principal Evaluator, Project Coordinator, Formative and Summative Evaluation Reports, Measurement Development, "A Meta-Evaluation and Cost-Benefit Analysis of the Ricks College Home Economics Department Curriculum and Operations." **Christensen, M.**, Principal Evaluator and Project Director, Department of Home Economics, Ricks College.

Principal Evaluator, Project Coordinator, Evaluation Reports, "Ricks College Campus-wide Advising Program," Funded by the Ricks College Administration ($10K), 1990. Evaluators - Advising Committee, Ricks College Faculty, **Christensen, M.**, Chairman, Rexburg, Idaho, 1990-91. Author, Academic Advising Committee Interim Report I, August, 1990; Interim Report II, December 1990; Interim Report III, April 1991.

Evaluation Report Compilation, "An Evaluation of Logan City School District's Educational Technologies Initiatives," Funded by the Logan City School District, ($5K), 1990-91. Worthen, B.R., Principal Evaluator, Moss, V., Project Coordinator, Department of Psychology, College of Education, Utah State University, July, 1991.

Project Coordinator, Site Evaluator, Measurement and Analysis Development, "Statewide Evaluation of Utah's Productivity Project Studies Program," Funded by the Utah State Office of Education ($40K), 1989-90. Evaluators - Research and Evaluation Methodology Program, Worthen, B.R., Principal Evaluator, Department of Psychology, College of Education, Utah State University, 1989-90.

Project Site Evaluator, "Implementing the Learning Cycle Approach to Instruction in High School: Teacher Development and Materials Development," Funded by the National Science Foundation, Project No. TEI-8550548 ($278K), 1985-88. Saunders, W.L., Principal Investigator, Eastmond, N., Principal Evaluator, Department of Instructional Technology, College of Education, Utah State University, 1988.

Project Site Evaluator, Mentor, "A Model for Enhancing Teacher Effectiveness and Retention," Funded by the Mellon Foundation ($70K), 1986-89. Duke, C.R., Principal Investigator, Department of Secondary Education, College of Education, Utah State University, 1988.

Project Proposal, "Project Life Skills: An FHA/HERO Latchkey Program," 1988.

CURRICULUM PUBLICATIONS:

Christensen, M., (1995). Mission Statement for the Professional Pre-School Education Program, Department of Family Science, Ricks College.

Christensen, M., (1994). Mission Statement for the Department of Home Economics, Ricks College.

Christensen, M., (1994). Understanding Concepts through Application in Clothing Construction Skill Techniques - Cloth 115 Instructional Packet, Ricks College Press, Rexburg, ID.

Bittner, N.R., **Christensen, M.**, (1994). An Illustrated Song - Concept-Centered Visuals for Teaching Music to Children, 16 sets, NRB Productions, Salt Lake City, UT. Marketed exclusively through Deseret Book, Salt Lake City, UT.

Christensen, M. (1994, 1993). The Best Recipe File System Ever! (Recipe management system - 9 volumes and recipes - Vol. I & II), Ricks College Press. Marketed through S&M Creations, Rexburg, ID.

Christensen, M. (1993). HE 101 Instructional Packet - Concepts of Home Economics Education, 4th Ed., Ricks College Press, Rexburg, ID.

Christensen, M., Strobel, S.E. (1992). "Design Is Everywhere," A multi-media presentation on the Elements of Design, 2nd Ed., Ricks College Media Services, Rexburg, ID.

Strobel, S.E., **Christensen, M.**, Smith, J. (1992). ID 140 Instructional Packet - Introduction to Architecture: Interior Design, 4th Ed., Ricks College Press, Rexburg, ID.

UNPUBLISHED MANUSCRIPTS:

Christensen, M., (1996). An interdisciplinary theoretical framework for the mailed questionnaire process and the development of a theory on immediacy and salience as significant variables of response rates. Doctoral Dissertation, Utah State University.

Christensen, M., (1995). The use of graphic organizers in making a criticial inquiry of the inter-connectiveness of objectives, learning experiences and conceptual content in college course curricula. Manuscript not yet submitted for publication.

Christensen, M., Rowley, M., (1994). An analysis of information and assistance on indoor air-quality problems in the home. Manuscript submitted for publication.

Rowley, M., **Christensen, M.**, (1994). The philosophical framework and interdisciplinary theoretical foundation for the Discipline of Home Economics. Manuscript not yet submitted for publication.

Kiewra, K.A., Mayer, R.E., DuBois, N.F., **Christensen, M.**, Kim, S., Risch, N.L. (1994). Test-appropriate effects of type of advance organizer and repetition on learning from a science lecture. Manuscript submitted for publication.

Christensen, M., (1983). A comparison of Latter-day Saint Women re-entry students and non-students: Perceptions of family, educational, religious, and work backgrounds. Masters Thesis, Brigham Young University.

PROFESSIONAL VOLUNTEER COMMUNITY SERVICES:

Professional Presentations and Speeches: Numerous presentations to educational, civic, church and community groups. Topics from all areas of Home Economics, 1982-present.

Advisory Council - Alternative Learning Center Childcare Program, Madison, Ririe, Jefferson, Fremont School Districts Young Mothers Program, 1994 - present.

"Quilt Relief," Supervision of pre-service home economics students who supervised campus-wide project of quilts made for multi-regional children's medical center, 1996

"A New Home For Success," Supervision of pre-service home economics students who are making a difference at the Alternative Learning Center for Young Mothers and Pregnant Teens - refurbishing an abandoned school, producing classroom visuals, making instructional classroom materials, creating cognitive and psychomotor play for children, 1994.

"Clothe the World," Supervision of pre-service home economics students who teach community and campus groups to sew through the production of clothing for worldwide humanitarian services, 1993 - present.

"Project Santo Domingo," Supervision of community groups who learned to sew through the production and refurbishing of fabric goods for distribution in Dominican Republic of Santo Domingo, 1994.

Remedial Curriculum Materials for 1st Grade Disadvantaged Children: Planned, coordinated and supervised production of materials for Parkview Elementary School, Salt Lake City School District, 1993.

Women's Abuse Shelter: Organized, taught courses, then supervised construction of window treatments for local woman's shelter, Rexburg, ID 1992.

South American Health Care Needs: Supervision of community groups who produced hospital gowns and bedding for health care facilities in South America, 1992

After-school Latch-key Projects: Taught free after school sewing and cooking lessons to neighborhood youth, ages 9-11, 1989-1994.

Displaced Homemaker Activity Coordinator: Weekly Activities for 1500 Cache Valley Displaced Homemakers (male and female, ages 25-45), Logan, UT 1987-88.

Full-Time Missionary: LDS Church, Pittsburgh, PA 1977-79.

March of Dimes State Walk-a-ton and Tele-thon Steering Committee: Salt Lake City, UT, 1974.