

## Chapter Three: Research Methodology

### 3.1 Introduction

This chapter discusses the methodological choices that have been made to support this study of theories and their careers. Specifically, it describes how the multiple-case study method as developed by Robert Yin has been employed to produce a constructive typology of theory characteristics that contribute to the particular patterns of their diffusion.

As previously stated, the primary objectives of this research were to:

- (1) develop a constructive typology that captures regularities and irregularities in the communicative careers of theories,
- (2) empirically follow two selected cohorts of theories in the human sciences from January 1, 1980 through December 31, 1999 in order to develop that typology, and
- (3) analyze specific aspects of those theories that appear to contribute to their success or failure during their careers.

To a certain extent the research design itself has evolved from the findings encountered during the course of the project. The next section discusses the concept of “career” as guiding metaphor and Yin’s multiple-case study method as the guiding strategy for data collection and analysis.

### 3.2 “Career” as Metaphor and Case Study Design

While this dissertation is both exploratory and qualitative in nature, it is grounded on substantive evidence from a variety of sociohistorical perspectives discussed in Chapter 2 that theories can be described and their communication over time can be analyzed. While theories may have subjective meanings that differ for different audiences, they also have objective meanings on which even differing audiences may agree (Fenton *et al.*, 1998, page 154).

Similarly, while an extended metaphor for the careers of theories appears to be novel, there is in fact an existing literature that has made compelling use of “natural history” (*e.g.*, Fuller and Myers, 1941; Lemert, 1951) and “trajectory” (*e.g.*, Timmermans, 1998; Van den Belt and Rip,

1987) metaphors to describe the development of particular social phenomena over time. Neither of these metaphors, however, appears as capable as “career” of conveying the varieties of work that a theory may do. It should be noted that metaphorical reasoning has become increasingly central to the study of scientific cognition (Brown, 2003).

Although the term “case study” has had a long and somewhat checkered history in American social research (Platt, 1992a; Sjoberg *et al.*, 1991), this dissertation can best be subsumed under that rubric. More specifically, this is an exploratory case study, assuming what Yin terms “. . . the ‘meta’ posture, defining (a) what is to be explored, (b) the purpose of the exploration, and (c) the criteria by which the exploration will be judged to be successful” (Yin, 1998, page 236).

As Jennifer Platt observes:

The ways cases are chosen, analyzed, amalgamated, generalized, and presented are all part of their use in argument. It is assumed that an argument is designed to reach a conclusion which the reader (and the writer) will find convincing.

(Platt, 1992b, page 21)

The issue of precisely what a case study is and does has become so contested in recent years that entire books devoted to the question have appeared under such titles as *What Is A Case?* (Ragin and Becker, 1992) and *A Case for the Case Study* (Feagin *et al.*, 1991). Two polar positions are represented by, on the one hand, qualitative researchers in the more phenomenological traditions, who view the case study in terms of *verstehen* (Abel, 1948; Reinharz, 1979; Taylor and Bogdan, 1984) and, on the other, quantitative researchers in the more positivistic traditions, who endorse a statistical or at least pre-statistical worldview for case studies (Campbell, 1975; Collier, 1995; McKeown, 1999). Contemporary advocates of these two case study perspectives include Norman Denzin (Denzin, 1989) and John Van Maanen (Van Maanen, 1988) in the qualitative tradition and Gary King (King, 1989; King *et al.*, 1994) and Charles Ragin (Ragin, 1987, 1989, 1994) in the quantitative tradition.

A middle ground or mainstream position is occupied by Robert Yin, who pioneered in bringing case study methods into the methodological mainstream by redefining them in terms of a logic of design and viewing them as a strategy rather than as an ideological commitment (Platt, 1992b, page 46). Importantly, Yin's view is that case study investigation can ideally establish the "facts" of a case objectively, while taking advantage of continued interactions among design, data collection, and analysis during the course of the project (Yin, 1998, pages 229-230).

Yin's logic of design entails that a unit of analysis be determined, while encouraging a certain amount of ambiguity between that unit of analysis and its surrounding context (Yin, 1998, page 238). The units of analysis may be either holistic (a single, main unit, such as a family) or embedded (a main unit with sub-units, such as a family and associated sibling relationships). The context is the real-life situation in which the case or cases occur.

As the present dissertation was based largely upon preliminary pattern recognition of both cases and contexts, rather than on symbolic interactionism or statistical inference, Yin's approach to the case study was especially appropriate for the research questions at hand. Indeed, he has observed that "case studies are relevant for studying knowledge utilization, because the topic covers a phenomenon that seems to be inseparable from its context" (Yin, 1981b, page 99).

In multiple-case studies, the logic of replication is employed to strengthen (literal replication) or broaden (theoretical replication) potential generalizations resulting from the cases, similar to the role of multiple experiments (Yin, 1998, page 240). A point that Yin does not explicitly make but which becomes obvious from this logic of replication is that the approach also affords a structured approach to developing constructive typologies. Constructive typology as a methodology derives from Weber's famed "ideal types" but is more integrated with the empirical data in which it should be grounded (Winch, 1947). Constructive typologies are useful because they

order the concrete data so that they may be described in terms that make them *comparable*, so that the experience had in one case, despite its uniqueness, *may be made to reveal with*

*some degree of probability what may be expected in others. . . .*  
 The constructed type is a heuristic device. . . . The main purpose it serves is to furnish a means by which concrete occurrences can be compared, potentially measured, and comprehended within a system of general categories which may be developed to comprise the types.

(McKinney, 1966, pages 11-12)

Constructive typology as a methodology in the social sciences has undergone substantial criticism for its emphasis on description rather than explanation and for developing simplistic classifications rather than testable theories (Doty and Glick, 1994). However, in an exploratory study such as the present, accurate description must precede any attempts at explanation.

Defending his comparative case studies of political innovations in America, Nelson Polsby commented:

Case studies are a practical halfway house between arrant speculation and arid precision. . . . So long as our stock of ideas about policy initiation is relatively primitive, and so long as we are still learning and disagreeing about what a policy is and what an initiation is, the strategy of laying out case studies and searching for ideas about the experience they embody seems not only defensible but desirable.

(Polsby, 1984, page 6)

Similarly, case studies about theories continue to seem not only defensible but desirable.

This dissertation integrated both contemporary and historical inquiry as an essential part of its strategy, as the careers of the theories that were followed extended back two and in some instances almost three decades. Yin comments that the case study relies on many of the same techniques as history, but also affords researchers the ability to utilize contemporary research strategies such as interviews, which are largely denied to the more conventional historian of the “dead” past (Yin, 1994, page 8). This study took advantage of numerous opportunities to interview theorists themselves, which has greatly enriched it.

Longitudinal analysis of related phenomena, such as a cohort of theories, must necessarily incorporate a historical element in its design. Ragin observes that “such work seeks to make sense out of different cases by piecing evidence together in a manner sensitive to

chronology and by offering limited historical generalizations that are both objectively possible and cognizant of enabling conditions and limiting means— of context” (Ragin, 1987, page 3). Case studies, fortunately, are noted for their ability to integrate a variety of approaches in what are called variously “between methods” (Jick, 1979), “multi-method synthesis” (Brewer and Hunter, 1989), “comparative method” (Ragin and Zaret, 1983) or “dominant-less dominant design” (Creswell, 1994).

As Kellehear notes, “The task of understanding and of theorising, or developing explanations of phenomena, begins with the researcher being able to discern a recurring pattern . . . [or] patterns behind the obvious patterns which are suggested by the data” (Kellehear, 1993, pages 32-33). In this dissertation, the career stages model described in Figure 2.3 of the preceding chapter was used to frame an inquiry appropriate for addressing each of the following research questions:

- 1) what constitutes success or failure for theories?
- 2) which specific internal or external factors may be important?
- 3) how or why do theories change, coexist, compete or cooperate?
- 4) are there distinctive patterns to theoretic communication?

In a dissertation project such as this, only a few theories and their communicative careers could reasonably be studied in any detail. Eight somewhat similar theories in two emergent fields were the holistic units of analysis in this study, while their communicative careers over time provided the surrounding context. This number did prove sufficient for a limited logic of replication. Although the various stages of the development of each of these theories were considered separately, the theories themselves were the individual units of analysis, so this study should be considered a holistic multiple-case design.

In the following section, the study’s conceptual design is described.

### 3.3 Conceptual Design for This Study

This section discusses the research design in terms of the career stages model that was developed in Chapter 2. Yin points out that even the most exploratory of studies should explicitly state what the researcher intends to investigate, the purpose for such exploration, and some preliminary criteria by which the investigation can be judged as either successful or unsuccessful (Yin, 1994, page 29). Unlike the grounded theory (*e.g.*, Strauss and Corbin, 1990) or ethnographic (*e.g.*, Fetterman, 1989) approaches to the case study, the approach espoused by Yin is established on existing theoretical constructs available to the researcher before designing the study. This is, of course, a most pragmatic approach to “constructive typology,” and is well suited to analyzing the careers of theories, as there is a substantial but dispersed literature relevant to such efforts, as was discussed in Chapter 2.

For this dissertation a conceptual framework of the “career” of theories had been constructed from the “contexts of” theoretical development suggested by such writers as Laudan and Reichenbach detailed in Figure 2.3 of Chapter 2. In addition, particular internal criteria of the theory were mapped to specific stages of the presumed career. These consisted of various possible attributes of the theory itself that noted commentators such as Kuhn, Nozick, and Popper believed may be of importance in explaining a theory’s inherent appeal to theorists. Some external criteria were also mapped to later stages of the theory career, representing various possible attributes of the theory in relation to its immediate environment outside the mind of the theorist. The conceptual framework shown in Figure 3.1 below provided a preliminary guide to studying the careers of theories.

The systematic nature of this framework was consistent with the study’s inquiries as proposed earlier through the research questions listed in Section 3.1, as both individual cognition and social cognition are indispensable avenues for traveling theories. Those research questions included:

- 1) what constitutes success or failure for theories?

- 2) which internal or external factors may be important to that success or failure?
- 3) how or why do theories change, coexist, compete or cooperate? are there distinctive patterns to theoretic communications?

“Context of” (Career Stages)	Internal Criteria: (Individual Cognition)	External Criteria: (Social Cognition)	Research Questions:
Discovery	Interestingness Seductiveness Solubility		#1, #2
Pursuit	Interestingness Seductiveness Solubility Accuracy Consistency Simplicity Fruitfulness		#2 ,#3
Justification	Accuracy Consistency Simplicity Fruitfulness Ontological heterogeneity Mutuality of interaction	Communicability	#1, #2,
Acceptance	Fruitfulness Egalitarian Self Subsumptive Ultimate Linkages	Credibility	#1, #2 ,#3, #4
Application		Utility	#1, #2, #3
Displacement		Possibility	#1, #2 , #3, #4

**FIGURE 3.1 RESEARCH QUESTIONS IN CONTEXT**

The criterion by which this effort was to have been judged at least partially successful was whether the various empirical data to be collected could support the interpretation of any “career pattern” for at least two of the theories to be studied. In fact, a general model of characteristics important to various types of theoretic “careers,” comparable to but distinct from Everett Rogers’s classic typology of characteristics central to the diffusion of innovations (Rogers, 1983, pages 14-16) was developed during the course of the research and will be introduced in Chapter 4.

The main purpose of this preliminary framework, therefore, was to provide specific boundaries that would both limit the scope of the investigation and offer guidance for the

empirical data collection effort rather than to develop propositions to be tested in this study. The preliminary framework was most helpful in this regard.

This preliminary “theory career” typology was created as the “ideal” typology, but was further constructed and reconstructed based on empirical data about these eight theories collected during the course of this study. In fact, it was found during the course of the investigation that the proposed “career stages” were not nearly as defined by time as they were by the interests of the theorists who employed the theories in their own work environments. In other words, some activities, such as hypothesis testing, that were presupposed to occur within a specific timeframe actually occurred at multiple times throughout a twenty-year period of publications about a particular theory. Other stages that were presupposed to exist (*e.g.*, displacement) failed to occur during the period studied, even though that period comprised almost thirty years in some instances. The stages that were of most interest during the course of this dissertation were those initially termed “pursuit” and “justification,” as it was found that successful theories were pursued and justified by a number of theorists, not simply their originators. All the theories, moreover, were found, as might have been more or less expected within the tradition of more or less “scientific” theories, to be following a “vertical career” path as described in Chapter 1 rather than a “horizontal” one or any of the other patterns described.

### **3.4 Multiple-Case Study Design**

This section presents the researcher’s rationale for conducting this study using a multiple-case design. As Yin notes, while the use of a multiple-case design may provide more compelling evidence, a random sampling logic is not appropriate for the choice of the individual cases, as each case should be selected to serve a specific purpose within the overall scope of inquiry (Yin, 1994, page 45).

As discussed earlier in both Chapters 1 and 2, most historical or sociological accounts of specific theories consider them at best only in connection with their immediate predecessors or nearest rivals. The value of this study’s research questions in regard to a multiple-case design was

in comparing and contrasting a limited number of roughly contemporaneous, unproven but potentially influential theories “in the wild.” Career patterns of similarity and dissimilarity in their success or failure over the course of several decades became apparent that would not be as easily observable if each individual theory had been considered in isolation. Following the careers of each of these theories from the work of the initial theorists through subsequent developments assisted in distinguishing important from unimportant regularities. While there were consistencies and continuities among the contexts of the careers of these theories, due to the fact that they took place in the same society during the same time period, there were also marked dissimilarities, due to the varying content of the theories themselves and to the particular ways in which they were used by theorists.

### **3.5 Units of Analysis**

The units of analysis for the present study consisted of eight individual theories, four of which were explored in detail and four of which were explored as far as seemed necessary to provide grounds for comparison and contrast. As discussed in Chapter 1, these theories displayed both within-group and between-group differences, originally enjoyed relatively equal status in the emergence of the fields that they purported to explain, were reasonably accessible to both the researcher and the reader, and can be said to have been actively “at work” in the marketplace of ideas.

The first cohort of theories attempts to explain successful internal cooperation, while the second attempts to explain successful external competition. Two focal theories were chosen from each cohort for detailed analysis and the others served as supplementary cases. These focal theories appear as the first and third theory in the two theoretical cohorts shown in Figure 3.2 below.

While the theories themselves form the units of analysis, it should be noted that they were studied by necessity largely through the medium of the articles in which they were published. In one instance, that article was the original and sole publication of the theory. In some cases,

however, the article that was viewed as the “seminal publication” was in fact preceded by one or more conference presentations. As conference presentations are not well documented through the

<b>Theory Cohort 1: (Contextual Performance)</b>	<b>Theory Cohort 2: (Electronic Exchange)</b>
Organizational Citizenship Behavior* (focal theory 1a)	Electronic Markets Hypothesis* (focal theory 2a)
Whistleblowing	Pseudo-Community Hypothesis
Leader-Member Exchange* (focal theory 1b)	Channel Retreat Hypothesis* (focal theory 2b)
Institutional Isomorphism	Social Information Processing

**FIGURE 3.2 UNITS OF ANALYSIS**

citation indices that serve as the primary means of identifying publications about a particular theory and therefore do not contribute largely to the citation count of a theory, those initial presentations were noted during the course of this research and referred to as necessary, but were not utilized as the primary identifier of a particular theory. In one case, there were two more or less simultaneous article publications that served as the “seminal publication” of a theory in two fairly distinct disciplines. Both articles therefore were treated as “seminal publications” for that theory.

### **3.6 Research Design Protocol**

This section provides an overview of the activities and processes performed during the course of conducting the study. The design protocol was developed in accordance with Yin’s dictum that such a formal approach is essential for guiding the researcher through the study, improving the reliability of the study, and in carrying out the specifics of the study plan (Yin, 1994, page 63).

The design protocol of this study contains the case design overview, including a discussion of the revisions to the original design that evolved during the course of the study, data collection and management, and data analysis. Each section of the protocol will be addressed separately below.

### 3.6.1 Case Design Overview and Revisions to Design

Yin strongly recommends a pilot study as the final step to be taken in the preparation for the primary data collection effort, and even observes that developments from the pilot can be more significant than the collection of data from any of the actual cases (Yin, 1994, page 74). The pilot case study can be used formatively, “. . . possibly even providing some conceptual clarification for the research design. . . . The inquiry for the pilot case can be broader and less focused than the ultimate data collection plan . . . and done prior to the final articulation of the study’s theoretical propositions” (Yin, 1994, pages 74-75). A formal pilot study was not used for this study, somewhat to its detriment. However, it is also extremely likely that use of a pilot study would have precluded some of the most serendipitous elements of the study. These serendipitous elements included the selection of one theory that turned out to have no subsequent citations, one that attracted so many citations as to be named a “citation classic” by Eugene Garfield, and several that displayed particularly interesting variants of the so-called “invisible college” structure. Had the researcher performed an initial pilot study, the difficulties and pitfalls inherent in studying theories “in the wild” would probably have become more apparent, and a more tractable data-set been selected for the dissertation itself. Similarly, the pilot study of a single theory may or may not have led to the realization that the initial theorist or theorists would not necessarily have insights into the theory’s subsequent “career” in terms of how the theory was received, refined, and possibly reinvented. Additionally, the “uses” of theory revealed through citation context analysis of a single theory may or may not have prompted the insights that were attained through iterative analysis of the uses made of multiple theories by literally hundreds of theorists.

In summary, the use of a pilot study in this particular instance probably would not have resulted in the present dissertation. As the late Donald Campbell remarked about what he termed “descriptive epistemology,” which appears to characterize the present work as well: “If there is a coherent specialty lying in this interdisciplinary space, or if it’s worth exploring to find out, it

may have to be done by marginal scholars who are willing to be incompetent in a number of fields at once” (Campbell, 1988, page 439).

Figure 3.3 below presents the general overview of the revised study design. The major purpose of this figure is to describe research activities and events throughout the process of data collection.

The study design includes:

Citation context analysis of the original articles introducing the theories

Interviews with as many as possible of the original theorists

Interviews with selected subsequent theorists

Citation context analysis of all available articles citing the theories (the literature generated by the theories from approximately 1975 to 1999)

Surveys of the members of the editorial review boards in which the original theories were published (contemporary or past members, as available)

Additional review of scholarly and non-scholarly literature as indicated to provide background and context regarding the theories

Theory Career Stage:	Sources of Evidence:	Methods of Analysis:
Discovery, Pursuit	Personal interviews with theorists	Concept Analysis
Justification	Theoretical Articles	Citation Context Analysis Content Analysis
Acceptance, Application	Subsequent Literature (theoretical and non-theoretical)	Citation Analysis, Content Analysis Consensus Analysis
Displacement	Survey of editorial boards	Consensus Analysis

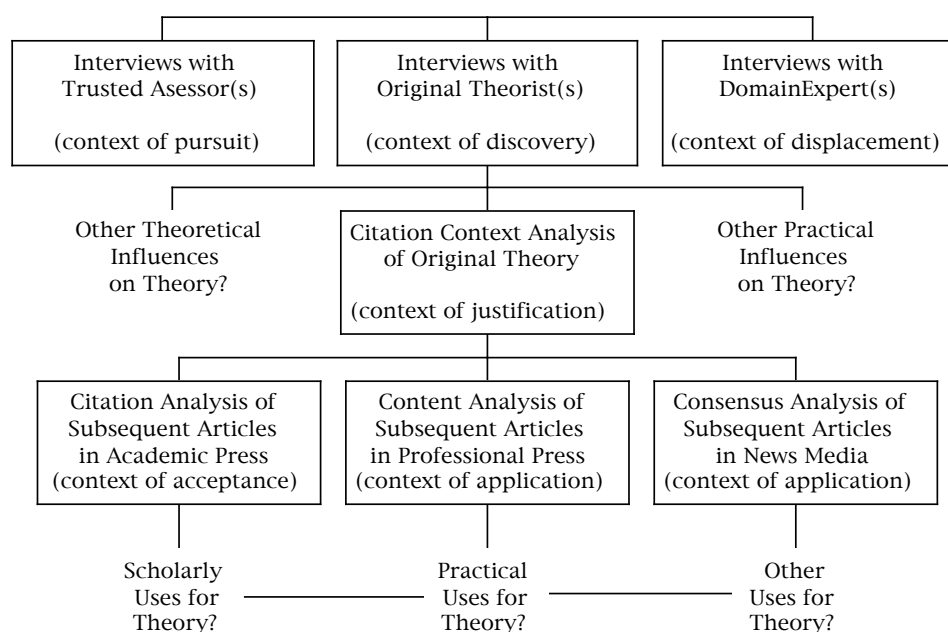
**FIGURE 3.3 THEORY CAREER STAGES AND RESEARCH METHODS**

Yin comments regarding the use of documents in case studies that their “most important use . . . is to corroborate and augment evidence from other sources” (Yin, 1994, page 81). In the present study, however, the analysis of documents provided the essential preliminary background necessary to trace the communicative careers of theories in a way that would not be possible without this evidence. In particular, interviews with the theorists were much more productive after the analysis of the documentary evidence, because for “elite depth-interviews” such as these,

especially when access to the theorist may well be limited, it is critical for the researcher to be as well-versed as possible in the particular domain in order to prepare well-targeted questions (Sinclair and Brady, 1987, page 65). Iterative documentary analysis therefore preceded each interview.

Figure 3.4 below presents the preliminary outline of multiple lines of evidence for each theory. Yin points out that the use of such multiple sources of evidence, both convergent and divergent, is especially well suited for the case study strategy, as it may enhance construct

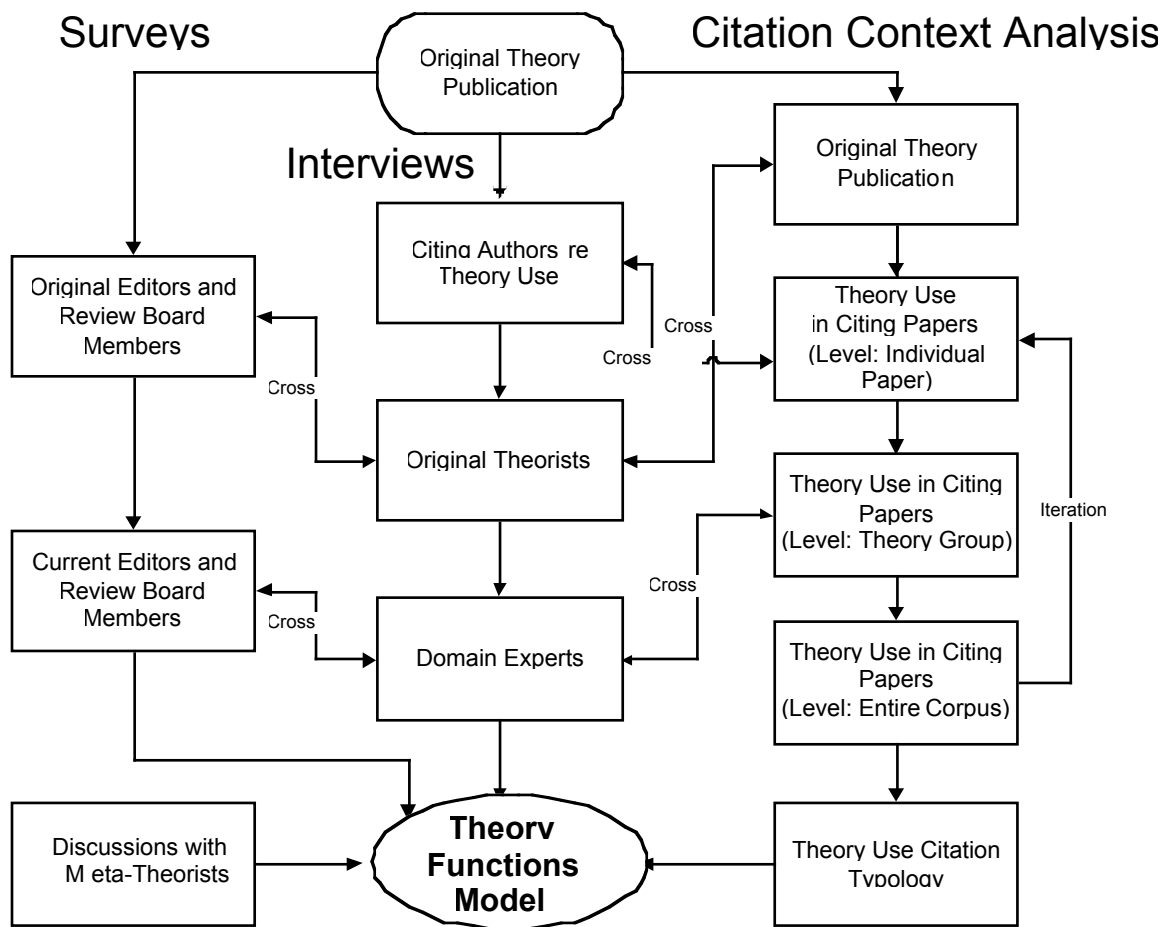
**Figure 3.4 Multiple Lines of Evidence for Theory Careers (As Proposed)**



validity, although it does add substantially to the burden of the investigative process (Yin, 1994, page 94). The use of the case study protocol is intended to set limits for the interpretation of evidence collected, as this type of research poses substantial challenges both in terms of specifying the boundaries of inquiry and in terms of recognizing data saturation. While the final case study protocol differed from that originally proposed, the revision offered equally substantial benefits in terms of multiple lines of evidence.

### 3.6.2 Revised Case Study Design

The four most important revisions to the final study design shown in Figure 3.5 below



**Figure 3.5 Convergent lines of evidence used in developing model**

were: (1) the application of citation context analysis to the entire corpus of documents, in order to better understand the use of the eight theories, (2) attempts to survey both then-contemporary and current editorial review board members of the journals in which the theories were originally published in order to obtain additional data on the extent of a particular theory's acceptance and influence within particular disciplinary areas, (3) the addition of in-depth interviews with selected theorists who had subsequently used the theories, in order to better understand the social and cognitive background behind such usage, and (4) the postponement of interviews with original theorists until the final stages of the study, in order to tap their insights as confirmation or

disconfirmation of the bibliometric-based findings, in addition to their personal perspectives as theorists. These modifications are discussed in detail below.

Important to the revised study design was the iterative process in which the various uses of the theories were analyzed and which resulted in the final “theory functions” mode. After the selection of the original theoretical publications, a citation analysis was performed to identify those articles published between 1975 and 1999 that cited them. The documents (approximately 1,280) were then collected and reviewed. Articles that contained citation errors (*i.e.*, were incorrectly reported by the Institute of Scientific Information (ISI) database to have cited the original paper) were removed from the corpus. In addition, some articles could not be located and used (usually these documents were published in languages other than English). An estimated 5 percent of the original citations belonged to this “unavailable” category. In addition, however, during the process of review, certain other documents were added to the corpus because they cited the original paper but were not included in the ISI database. This category generally represented book chapters, but also contained articles from peer-reviewed journals not covered by the various components of ISI’s Web of Science.

Editorial board members of the following journals were surveyed: *American Sociological Review*, *Communications of the ACM*, *Journal of the Academy for Marketing Science*, *Journal of Applied Psychology*, *Journal of Business Ethics*, and *Organizational Behavior & Human Decision Processes*. While response rates were well below those considered acceptable for a randomized survey instrument, the specialized nature of the questionnaires for this research resulted in the return of many surveys by respondents with the comment that they didn’t consider themselves knowledgeable enough about a particular theory to be able to respond appropriately. Additionally, while current editorial board members were relatively easy to identify and locate, the length of time since the original publication of some theories made it difficult to do the same for the then-contemporary board members. The surveys of editorial review board members, therefore, were most useful in assessing the extent of a particular’s theory diffusion within

editorial boards themselves: the most obvious cases being the “Channel Retreat” hypothesis, in which only one editorial board member recognized the theory and “Institutional Isomorphism,” in which all responding editorial board members acknowledged at least passing familiarity with the theory. A sample editorial board survey is shown in Appendix 4.

Another revision to the original study design was the use of extensive interviews with subsequent theorists in order to better understand their use of the theories. Ten theorists from two of the theory groups (leader-member exchange and organizational citizenship behavior) were contacted via telephone or e-mail and asked to describe in detail how they came to be interested in the particular theory, how they perceived it, how they used it, and other questions germane to the theory itself. A sample interview protocol is shown in Appendix 5. Phone interviews generally lasted approximately one half-hour and e-mail exchanges generally involved at least four pages.

A final revision was the decision to interview original theorists at the end of the research study, rather than at the beginning. This allowed some of the bibliometric data to be cross-checked with the original theorists, and also precluded the researcher from being overly influenced by the original theorists’ interpretation of “theory careers” prior to actual data collection and analysis. Phone interviews generally lasted an hour and e-mail exchanges generally averaged at least eight pages, depending on the size of the theory group. A sample interview protocol is shown in Appendix 6.

<b>Theory Acknowledgement</b>	<b>Theory Application</b>	<b>Theory Analysis</b>	<b>Theory Assimilation</b>
Neutral	Proposed	Theoretical	Existing Framework
Positive	Explanatory	Empirical	Novel Framework
Negative			

**FIGURE 3.6 PRELIMINARY TYPOLOGY OF THEORY USAGE**

As mentioned above, all documents in the corpus were reviewed, and the use of the theory of interest was described in detail. The descriptors compiled during this process were then analyzed for common elements, and those common elements were used to develop a preliminary

typology of theory uses. This preliminary typology is shown above in Figure 3.6 and described in detail in the next chapter.

### 3.6.3 Data Collection and Management

This section identifies specific data sources and methods used to collect the data as shown above in Figure 3.5, and discusses particular problems encountered during the process.

Theory:	Interviewees:	Other Interviews	Editorial Board:
Organizational Citizenship Behavior	Dennis Organ* Janet Near*  Thomas Bateman*	Mark Bolino Randy Hodson Dan Skarlicki  Arthur Brief	<i>Journal of Applied Psychology</i>  <i>Academy of Management Review</i>
Vertical Dyad Linkage Leader-Membership Exchange	James Dansereau* George B. Graen* John Haga	Stella Anderson Nancy Boyd Terri Scandura  one anonymous	<i>Organizational Behavior &amp; Human Decision Processes</i>
Whistleblowing	Marcia Miceli* Janet Near*	Granville King	<i>Journal of Business Ethics</i>
Institutional Isomorphism	Paul DiMaggio* William Powell*	Rebecca Bordt	<i>American Sociological Review</i>
Pseudo-Community Hypothesis	James Beniger*	one anonymous	not contacted
Channel Retreat Hypothesis	Wilke English*	none	<i>Journal of the Academy for Marketing Science</i>
Electronic Markets Hypothesis	Robert Benjamin* Thomas Malone* JoAnne Yates*	one anonymous	<i>Communications of the ACM</i>
Social Influence Model	Janet Fulk Charles W. Steinfeld* Joseph Schmitz* J. Gerard Power	one anonymous	<i>Communication Research</i> (former editor Peter Monge only)

**FIGURE 3.7 DATA SOURCES: THEORISTS AND EDITORIAL REVIEW BOARDS**

The data collection strategy for information from theorists is represented in Figure 3.7 above. The starred (\*) individuals are those theorists have been interviewed in the course of this study. No individuals refused to be interviewed, however, the researcher was unable after repeated attempts to make contact with Janet Fulk, John Haga, or J. Gerard Powers. Theorist Ann C. Smith is deceased and is not shown. The other primary set of interviews was conducted with

several theorists selected specifically for their innovative uses of particular theories. The approval of the Syracuse University human subjects committee was obtained for all these interviews. A sample informed consent form is shown in Appendix 3. Those interviewees requesting anonymity are shown as “anonymous.” Interviews were conducted via telephone, or via email, as the interviewee preferred.

Editorial review boards of the original journals of publication were surveyed as shown. In the instances of the whistleblowing and social influence theories, due to the realization from the administration of the earlier surveys that only those actually working in those specific areas were likely to respond to queries about specific theories, only selected editorial board members were contacted.

Appendix 2 shows the 300 journals that contributed one or more articles to the citation networks of the seven theories with subsequent citations. Originally, the researcher’s intent was to search all of the journals shown in Appendices 1A and 1B in order to identify emergent communication networks (Monge and Eisenberg, 1987) that might help in establishing which publication networks would be considered worthy of examination beyond the normal citation networks, given that theories are central to the establishment and differentiation of disciplines themselves as reflected in their journals (Brooks, 1990, page 246).

The two appendices represent both the academic journals already influential in their respective fields and those newer and more specialized journals that are emerging with the definition of new fields such as electronic commerce. Those journals with the largest so-called “impact factor,” a measure of influence derived from the aggregate citation of articles from a particular journal by articles in other journals, are considered to be the “core journals” of a field (Ackerson, 1999).

The list of “core journals” shown in Appendix 1A had been developed from existing research on the disciplinary impact factors in the fields of advertising (Zinkhan and Leigh, 1999), communication (Dominick, 1997; Rice *et al.*, 1996), consumer behavior (Leung, 1989; Zinkhan

*et al.*, 1992), economics (Davis, 1998), management (Everett, 1994; Sharplin and Mabry, 1985), management information systems (Cooper *et al.*, 1993; Hardgrave and Walstrom, 1997; Holsapple *et al.*, 1993, 1994; Walstrom *et al.*, 1995), marketing (Jobber and Simpson, 1988; Zinkhan and Leigh, 1999), organizational behavior (Blackburn, 1990; Extejt and Smith, 1990), and psychology (Everett and Pecotich, 1993; Feingold, 1989). All of these journals appeared to be potentially influential in the diffusion of the theories to be studied in this project.

Appendix 1B includes a number of other journals specific to the inter- and intra-organizational behavior fields that may be equally influential in regards to these theories. However, these journals have not yet been specifically identified through their citation statistics as so-called “core journals” for a particular field. This may be due to the recent founding of the journal in some instances, the specialized nature of the journal in other instances, and the marginal nature of the journal in yet others. However, combining both core and peripheral journals for analysis has been found to be particularly successful in mapping the journal structure of such emergent interdisciplinary fields as artificial intelligence (Chen *et al.*, 1996), expert systems (Cheng *et al.*, 1994), and technology innovation management (Cheng *et al.*, 1999). It also should be noted that the closest analogy to the present journal list in regards to the electronic commerce theory cohort can be found in the work of Clyde Holsapple on decision support systems (Holsapple *et al.*, 1995). Holsapple points out that the use of standard impact factors alone is problematic, as it tends to understate the impact of new journals, to underestimate the impact of certain journals in small but important niches, and to overestimate the impact of large but marginally relevant journals (Holsapple, 1995, page 363).

However, Leydesdorff has recently shown that the so-called “impact factor” for journals in the social sciences does not appear to have the same structural dynamics as those of the science journals for which the “impact factor” metrics were originally developed (Leydesdorff, 2002). Therefore, the approach taken in the actual research performed in this dissertation was to use only the journals identified during the course of the citation analysis itself, and to add only book

chapters and other journals not indexed by the Institute of Scientific Information. The list of journals developed through this “realist” approach rather the “nominalist” one originally proposed represents approximately three times as many journals as originally contemplated, which militated against additional journal searching, given the time-constraints involved. However, one disadvantage of this approach is that it relied largely on those journals indexed by the Institute for Scientific Information, which tends to over-emphasize the importance of United States publications and under-emphasize the publications of other countries, most especially those in languages other than English. This limitation became particularly apparent during the course of interviews with theorists themselves. Future research should attempt to ameliorate this difficulty.

Yin maintains the importance of three principles of data collection (Yin, 1998, pages 246-49) in enhancing data quality and ensuring that the data used in the final report will be the same as that collected during the course of study. These principles include:

- (1) using multiple sources of evidence
- (2) developing a structured database in advance for the organization and documentation of the data collected for the studies
- (3) maintaining a chain of evidence similar to that used in police investigations

The researcher developed such a database, which has formed the foundation of this study.

#### **3.6.4 Data Analysis**

Yin points out the importance of preparing a general analytic strategy, however simple, prior to collecting case study data (Yin, 1994, page 102). The emphasis by some investigators on statistical analysis of empirical data produced during the course of the case study often neglects the importance of doing analysis at the level of the whole case or cases (Yin, 1994, page 103). He further observes that “one of the most desirable modes of analysis is to compare an empirically based pattern with a predicted one” (Yin, 1994, page 106). The precision of pattern matching, however, is far from well developed, so simple patterns are recommended, especially for the novice investigator (Yin, 1994, page 110). The use of the theory career stages model discussed

throughout the original proposal represented such a simple pattern, though in time it turned out not to be an accurate reflection of the actual theoretic communication process.

As proposed, it was necessary to integrate a number of data analytic techniques to capture both the preliminary and the later career stages of the theory, as it moved from individual cognition by the theorist to social cognition by subsequent audiences. This integration is shown below in Figure 3.8.

Phase:	Analytic Method:	Data Source:
1	Citation Context Analysis	Initial Theoretical Article
2	Citation Context Analysis	Subsequent Citing Articles
3	Content Analysis	Citation Uses
4	Content Analysis	Subsequent Theorist Interviews
5	Typology Construction	Citation Categories

**FIGURE 3.8 ANALYTIC METHODS**

The first phase utilized citation context analysis for the selected corpus of original theories in the scholarly literature. This is an essential and often-neglected step. For example, there is testimony from Nobel prize-winning physicist Steven Weinberg that the theory of neutral currents on which his own electroweak theory is based can be traced back to a 1937 paper by George Gamow and Edward Teller (Weinberg, 1992, page 122). Determining a theory's "point of origin" was not possible through citation context analysis alone in several instances, but it did supply enough information to ask the theorist more probing questions during discussions. Not unexpectedly, moreover, there was not always a single "point of origin," and the published account was not necessarily congruent with the theorist's recollection of actual thought processes.

In the second phase, citation context analysis was employed on the corpus of citing papers as described in Section 3.6.2 above to develop the "theory use" categories, and content analysis was used to develop and delimit the specific categories which comprised the final typology. The methodology employed in the citation context analysis phases was that suggested by Martin Bauer and Baas Aarts for corpus construction and analysis (Bauer and Aarts, 2000),

but was slightly modified to de-emphasize the rhetorical aspects of citations, as suggested by Swales in his discussion of citation analysis and discourse analysis (Swales, 1986). The modified methodology for the analysis of the corpus of citing papers, which numbered approximately 1,280 documents, is shown below in Figure 3.9.

Step 1	Initial construction of corpus through use of Institute for Scientific Information databases supplemented by additional information sources
Step 2	Preliminary analysis of all documents (initial reading of entire corpus to identify citation location and correctness of inclusion in corpus)
Step 3	Identification of additional documents for corpus through citation analysis of previously selected documents
Step 4	Preliminary construction of citation function categories through citation context analysis of individual documents
Step 5	Separation of documents into appropriate theory-groups
Step 6	Second analysis of documents and preliminary assignment of citation function categories to documents
Step 7	Citation context analysis of documents in each theory-group
Step 8	Interviews with selected theorists regarding theory usage and citation function typology
Step 9	Modification of citation function categories
Step 10	Analysis of citation anomalies
Step 11	Development of codebook for assignment of citation functions
Step 12	Final assignment of citation functions to entire corpus
Step 13	Final development of citation function typology

**FIGURE 3.9 CORPUS ANALYSIS OF CITING DOCUMENTS**

While content analysis is a fundamental method for the systematic analysis of text, and is widely used across the social sciences (Bernard and Ryan, 1998), a problem encountered in this particular research study was that the categories were developed from such a large corpus that the usual efforts at cross-validation by intercoder agreement ( *e.g.*, Banerjee *et al.*, 1999; Hoegenraad and McKenzie, 1999; Lacy and Riff, 1996; Potter and Levine-Donnerstein, 1999) could only be employed on a very limited subset of the entire corpus. A set of coding instructions was given to two volunteers, who coded separately twenty of the documents from the Fulk *et al.* corpus. Intercoder agreement was 95%, indicating that the coding instructions were reasonably clear. Future research would, of course, put greater emphasis on appropriate content analysis methodology than this exploratory effort was able to do.

The last phase of the research employed personal interview techniques with theorists. While qualitative interviewing has a number of well-known weaknesses (Weiss, 1994, pages 211-13), especially in terms of what Kvale has termed “the scientific holy trinity” of generalizability, reliability, and validity (Kvale, 1996, page 229), it is also been used as the best way to approach such elusive and elite informants as MacArthur “genius grant” recipients (Shekerjian, 1990), eminent historians (Domanska, 1998), neural network researchers (Anderson and Rosenfeld, 1998), and even Hollywood producers (Gamson, 1994). The results of these interviews enriched the findings considerably. As mentioned above, the interview protocol are shown as Appendices 5 and 6.

The combination of methods employed in this exploratory study, while necessarily incomplete and inadequate in some regards, did allow the theories to be studied in a more holistic fashion than most dissertation projects.

### 3.7 Limitations of This Study

Yin states that there are four commonly accepted criteria for judging the quality of a research design in the social sciences: construct validity, internal validity, external validity, and reliability (Yin, 1994, page 34). In addition, he notes that the multiple-case study design places a substantial burden on the solitary researcher, who must become familiar with the various

Criteria:	Case Study Tactics:	Research Phase:
Construct Validity	Definition of career pattern Definition of theory cohort Use of multiple sources of evidence Establish chain of evidence Review of finding by domain experts	Design Design Data collection Data collection Data analysis
Internal Validity	Use of pattern-matching	Data analysis
External Validity	Use of replication logic in multiple-case study design	Design
Reliability	Use of case design protocol Use of case study database	Data collection

**FIGURE 3.10 CASE STUDY QUALITY CONTROLS**

techniques to be employed and who must also have the time and tenacity to complete the project (Yin, 1994, page 45). This dissertation project has demonstrated the wisdom of Yin's caveat, as indeed it has proven to be one of the lengthier dissertation projects undertaken recently at the Syracuse University School of Information Studies. Figure 3.10 above shows the specific tactics that were used to assist in controlling research quality (Yin, 1994, page 33) during the course of this study.

The issue of construct validity, especially in a case study involving constructive typology, is critical. If the so-called theories are questionable *qua* theories and the so-called careers bear no resemblance to their metaphorical prototypes, the study's purpose is negated. Yin mandates that the investigator select in advance the specific types of phenomena to be studied and develop a sufficiently operational set of measures (Yin, 1994, page 34). Construct validity can be increased by the use of multiple sources of evidence, the establishment of a "chain of evidence," and the review of analytic findings by knowledgeable informants.

Clearly, the problem of selection bias in choosing appropriately informative theories as units of analysis was a particularly serious one in the present study. As Gary King suggests, possible precautions in this situation are for the researcher to be aware of possible selection bias in order to at least partially correct for it, to use supplementary cases at a less detailed level of analysis as a validity check, and to qualify resultant conclusions accordingly (King *et al.*, 1994, page 127).

The theories chosen for this project had been selected for a variety of reasons, not least of which they are of interest to knowledgeable individuals who inspect the results of this inquiry and who are expected to disconfirm any particularly glaring instances of misinterpretation by the researcher. The use of triangulation involving both reactive and nonreactive sources of information regarding each theory (interviews with multiple informants and documentary evidence from multiple publications) as proposed in this study is also highly recommended (Brewer and Hunt, 1989, pages 128-129).

Yin suggests four approaches to improving internal validity of case studies: pattern-matching, explanation-building, time-series analysis, and logic-modeling (Yin, 1998, page 253). As this was an exploratory, descriptive case study, pattern-matching was the most accessible method for analyzing the resultant data, although the suggested internal and external theory criteria shown in Figure 3.2 were intended to provide the future foundations for an eventually explanatory framework, the inherently chronological nature of the study itself offers the potential for time-series analysis, and the ultimate use for the constructive typology of “theory careers” would be a logic model for future studies.

One of the obvious pitfalls in pattern-matching mentioned by Yin is that the lack of precision inherent in the current underdeveloped state of the art “. . . can allow for some interpretative discretion on the part of the investigator, who may be overly restrictive in claiming a pattern to have been violated or overly lenient in claiming that a pattern has been matched” (Yin, 1994, page 110). As Norbert Hanson has pointed out, however, “. . . seeing is a ‘theory-laden’ undertaking” unavoidable in any scientific endeavor (Hanson, 1958, page 19), so the best corrective is to provide objectively verifiable data with appropriate linkages. The use of bibliometric data in conjunction with interviews of original theorists, subsequent theorists, and editorial review members involved in the publication of the original articles were all intended to serve as parts of that necessary corrective.

External validity in a multiple-case study design is based on what Yin terms “the logic of replication,” in which each case is deliberately chosen to serve a specific purpose within the overall scope of inquiry (Yin, 1994, page 21). As the present study was exploratory, with the goal of eventually contributing a “rich, theoretical framework” (Yin, 1994, page 46) to the study of “theories in the wild,” generalizability for this study was not a primary concern.

Reliability, on the other hand, is indeed a primary concern for this study. The development of a case study protocol and database are specifically recommended to avoid earlier

weaknesses of the case study approach (Yin, 1994, page 37). These two recommendations were adopted by this researcher.

In regard to the problems presented to a solo investigator by the multiple-case study design, Yin says that the best preparation is the pre-existing knowledge of the researcher of the issues and the techniques, and the willingness of the researcher to be adaptive, flexible, innovative, and open to different interpretations of the data (Yin, 1994, page 55). This researcher has attempted all of the above to the best of her ability.

### **3.8 Summary of Methodology**

The careers of eight theories in the human sciences were analyzed, examining their appearance and presentation during the past two decades through various communication channels. Approximately 1,280 documents were examined, 30 theorists interviewed, and 85 members of seven different editorial boards were surveyed in the course of this endeavor. The findings and their implications will be discussed in the next chapter.