
Building Better Theory by Bridging the Quantitative–Qualitative Divide*

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ABSTRACT Qualitative methods for data collection and analysis are not mystical, but they are powerful, particularly when used to build new or refine existing theories. This article provides an introduction to qualitative methods and an overview of tactics for ensuring rigor in qualitative research useful for the novice researcher, as well as more experienced researchers interested in expanding their methodological repertoire or seeking guidance on how to evaluate qualitative research. We focus our discussion on the qualitative analytical technique of grounded theory building, and suggest that organizational research has much to gain by coupling of use of qualitative and quantitative research methods.

INTRODUCTION

A theory tries to make sense of out of the observable world by ordering the relationships among elements that constitute the theorist's focus of attention. (Dubin, 1978, p. 26)

As Mintzberg (1979, p. 584) put it, 'data don't generate theory – only researchers do that'. Data describe the empirical patterns observed, while theory explains *why* empirical patterns are observed or expected. Theory building often requires the rich knowledge that only qualitative methods can provide:

Theory building seems to require rich description, the richness that comes from anecdote. We uncover all kinds of relationships in our 'hard' data, but it is only through the use of this 'soft' data that we are able to 'explain' them, and explanation is, of course, the purpose of research. I believe that the researcher who never goes near the water, who collects quantitative data from a distance without anecdote to support them, will always have difficulty explaining interesting relationships . . . (Mintzberg, 1979, p. 113)

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Echambadi, Campbell and Agarwal (2006) provide a critique of cross-sectional, survey-based data collection and analysis methods and suggest a number of alternative quantitative methods for testing theory. We take the discussion in a different, but complementary, direction: one of the most important limitations of cross-sectional, survey-based research is that it can only be used to test theory. While theory testing is a cornerstone of the scientific method, it is only one aspect of the larger process of scientific inquiry; theory development and refinement are of equal importance. The development of theory that is grounded in the experiences of those living with and creating the phenomenon is especially vital to the continued development of organization studies as a field (cf. Van de Ven, 1989; Weick, 1995). Empirically grounded theory is most often developed through the use of qualitative methods as researchers generate a detailed understanding and thick description of the phenomenon of interest; they collect information on many aspects of a phenomenon and attempt to document the perspectives of all key participants. The end result of this process is, ideally, a logically compelling analysis that identifies and describes key constructs, explains the relationships among them, and contextualizes the findings in a way that allows for future theory testing (Glaser and Strauss, 1967).

There are many contexts where qualitative and quantitative methods can be used in conjunction to build and refine theory (Cialdini, 1980; Fine and Elsbach, 2000; Jick, 1979; Weick, 1979). Our goal is to motivate researchers to engage in this practice – to use both qualitative and quantitative empirical methods to fully understand their phenomenon of interest – or at least to convince quantitative researchers to draw insights from qualitative research in their area, and vice versa.

Given the confusion and scepticism that often surrounds qualitative techniques, we begin with a discussion of the key philosophical differences between quantitative and qualitative research to establish a foundation for discussing how the two might be combined. We then provide an overview of qualitative methods of data collection and analysis. Our intent is to provide potential researchers and reviewers with a brief description of each technique, along with a set of references for learning more about these data collection methods. We focus our discussion on a specific analytical method – grounded theory building – for two reasons. First, a description of the analytic method of grounded theory building strongly illustrates the theory-building potential of qualitative research. Second, grounded theory building is perhaps the most recognized qualitative analytic technique in management research and perhaps also the most misunderstood (Suddaby, 2006). We follow with a discussion of how researchers and reviewers can ensure the conduct of rigorous and high quality grounded theory based research and overcome the perceived (or actual) bias against qualitative research in major journals. Finally, we provide examples of influential research that have successfully combined qualitative and quantitative methods in the pursuit of theory development and refinement.

FUNDAMENTAL DISTINCTIONS IN UNDERLYING PHILOSOPHIES

All science is based on paradigmatic thinking involving distinct assumptions on the nature of reality (*ontology*), how we can come to know that reality (*epistemology*), and how

we can systematically access what can be known about that reality (*methodology*) (Guba and Lincoln, 1994). While there are numerous ways to look at and define research paradigms (cf. Burrell and Morgan, 1979), we will focus on the differences between only two here, functionalism and interpretivism, because they lie at the heart of the quantitative–qualitative divide in management research. Our review of the differences between these two research paradigms is cursory; more complete discussions of these differences can be found in Burrell and Morgan (1979) and Gioia and Pitre (1990).

The essential difference between functionalism and interpretivism is the ultimate goal of the analysis (Burrell and Morgan, 1979). In the functionalist paradigm, the goal is replication in the service of theory testing and refinement: data should be collected and analysed in such a way that another researcher collecting and analysing similar data under similar conditions will find similar results, thus helping establishing the veracity of the theory. Theory development, although highly desired by journal editors and readers alike, is seldom practiced. When it is, the usual approach is deductive – using prior theory as a foundation for the development of testable hypotheses. These goals are based in the ontological assumption of objectivity (the world exists independent of those observing it, thus there is an objective reality that can be accessed) and the epistemological heritage of positivism (the search for regularities and causal relationships among basic components), and are most often achieved through the methodological traditions of quantitative data collection and statistical analysis.

In the interpretive paradigm, the goal is neither replication nor theory testing. Instead, what is important is that results are representative of the interpretations of those experiencing the phenomenon under study and that they embody a rigorous interpretation of the phenomenon such that plausible theory development is possible. ‘Because interpretive research implicitly assumes that every person conducting a research study will have a unique interpretation of the results’ (Labianca et al., 2000, p. 241), data analysis cannot be judged on whether or not the results are replicable by another researcher. Interpretive data analysis is assessed on its ability to provide reasonable and plausible insight into a phenomenon such that a deeper understanding of the phenomenon can be gained.

Interpretive research is based on the belief that a deeper understanding of a phenomenon is only possible through understanding the interpretations of that phenomenon from those experiencing it. Multiple social realities can exist around a phenomenon because those involved interpret the phenomenon differently. This results in different people reaching different conclusions about the causality of the phenomenon, the implications of the phenomenon, and the relationships other phenomena have with the focal phenomenon. It is the researcher’s responsibility to rigorously gather and understand these disparate interpretations and, in a systematic and informed manner, develop his/her own interpretations of the phenomenon that make sense to the informants who experienced it first hand, are plausible to uninformed others, and can be expressed in relation to current theory. By placing oneself in the context where the phenomenon is occurring and developing interpretations of the phenomenon based on personal experiences, as well as the experiences of those living it, a researcher develops insights not possible through other methods of analysis.

Thus, interpretive and functionalist research paradigms have different aims, but both are critical for the development of simple, accurate, and generalizable theory. Neither one is better than the other (Morgan and Smircich, 1982); each has strengths and weaknesses and may be more or less appropriate depending on the research question being investigated. With these basic ontological and epistemological distinctions in place, it is now possible to go into more depth concerning the methodological aspects of qualitative research and, most importantly, how qualitative methods can be combined with quantitative methods to expand our theoretical understanding of organizational phenomena.

A BRIEF INTRODUCTION TO QUALITATIVE METHODS

Qualitative methods are a set of data collection and analysis techniques that can be used to provide description, build theory, and to test theory (Van Maanen, 1979). They emphasize the fine grained, the process oriented, and the experiential, and provide a means for developing an understanding of complex phenomena from the perspectives of those who are living it (Miles and Huberman, 1994). The primary benefits of qualitative methods are that they allow the researcher to discover new variables and relationships, to reveal and understand complex processes, and to illustrate the influence of the social context.

Qualitative methods began to take root in the social sciences in the early 1900s. In sociology, the 'Chicago School' adopted a qualitative approach to studying group life (Barley, 1989). In anthropology, scholars including Bateson, Boaz, Evans-Pritchard, Malinowski, and Radcliffe-Brown established a tradition of fieldwork aimed at creating ethnographic accounts of life in different cultures (Denzin and Lincoln, 1994). Since then, qualitative methods have progressed considerably: they have taken on different styles (e.g. content analysis, word counts, grounded theory, etc); they have been adopted in a variety of disciplines; and a variety of tools and techniques for data collection and analysis have emerged.^[1] Table I lists a small sampling of well-known exemplars of qualitative research drawn from management and related fields. It includes a few classics and a few more recent pieces and is in no way meant to be an exhaustive list.

In terms of methodological rigor, it is important to recognize that some research which is presented as qualitative research is, in fact, not. Qualitative research is comprised of far more than a handful of interviews or a few days or weeks of unsystematic fieldwork. As we will discuss in this piece, qualitative researchers use formal and systematic methods for data collection and analysis to ensure that the trustworthiness of their work is unassailable. And, because qualitative researchers often use multiple modes of data collection, they tend to describe their data collection and analysis methods in detail, an act that both openly reveals their methods for peer review and shows that their methods meet rigorous standards.

Unfortunately, one of the difficulties faced by qualitative research over the years has been the impression that new ideas derived from qualitative inquiry are unsystematic, thus resulting in many qualitative researchers encountering difficulties in the journal review process (Sutton, 1993). Given the significant contributions made by qualitative methods over the years to management research and the use of qualitative methods by prominent researchers (Table I), we believe this impression has greatly dissipated and the

Table I. Exemplars of qualitative research in management and related fields

<i>Field</i>	<i>Author and year</i>	<i>Title</i>
<i>Management</i>		
	Chandler (1962)	Strategy and Structure: Chapters in the History of the American Industrial Enterprise
	Barnard (1938)	The Functions of the Executive
	Mintzberg (1973)	The Nature of Managerial Work
	Kanter (1977)	Men and Women of the Corporation
	Barley (1986)	Technology as an Occasion for Structuring: Evidence from Observations of CT Scanners and the Social Order of Radiology Departments
	Sutton (1987)	The Process of Organizational Death: Disbanding and Reconnecting
	Kunda (1992)	Engineering Culture: Control and Commitment in a High-Tech Corporation
	Eccles and Crane (1988)	Doing Deals: Investment Banks at Work
	Gersick (1988)	Time and Transition in Work Teams: Toward a New Model of Group Development
	von Hippel (1988)	The Sources of Innovation
	Eisenhardt (1989b)	Making Fast Strategic Decisions in High Velocity Environments
	Isabella (1990)	Evolving Interpretations as a Change Unfolds: How Managers Construe Key Organizational Events
	Dutton and Dukerich (1991)	Keeping an Eye on the Mirror: Image and Identity in Organizational Adaptation.
	Gioia and Chittipeddi (1991)	Sensemaking and Sensegiving in Strategic Change Initiation
<i>Psychology and Social Psychology</i> (these studies tend to mix qualitative and experimental methods)		
	Sherif et al. (1953)	Status in Experimentally Produced Groups
	Schein (1956)	The Chinese Indoctrination Program for Prisoners of War: A Study of Attempted Brainwashing
	Zimbardo (1969)	The Human Choice: Individuation, Reason, and Order versus Deindividuation, Impulse, and Chaos
	Janis (1972)	Victims of Groupthink
	Milgram (1974)	Obedience to Authority: An Experimental Overview
	Cialdini and Schroeder (1976)	Increasing Compliance by Legitimizing Paltry Contributions: When Even a Penny Helps
<i>Sociology</i>		
	Whyte (1943)	Street Corner Society
	Roy (1952)	Quota Restriction and Goldbricking in a Machine Shop
	Goffman (1956)	The Presentation of Self in Every Day Life
	Becker (1963)	Outsiders: Studies in the Sociology of Deviance
	Burawoy (1979)	Manufacturing Consent: Changes in the Labor Process Under Monopoly Capitalism
	Latour and Woolgar (1979)	Laboratory Life: The Construction of Scientific Artifacts

tide is turning toward more acceptance of qualitative research.^[2] To ensure the negative impressions of qualitative research are completely overcome, qualitative researchers must be vigilant as they write and review papers, ensuring that papers are methodologically sound and consistent in their use of terminology.

QUALITATIVE METHODS FOR DATA ANALYSIS AND COLLECTION

The qualitative research tradition is comprised of distinct methods for data collection and data analysis. For those researchers unfamiliar with or just becoming familiar with qualitative research, it is easy not to appreciate the distinction between qualitative techniques for data collection and analysis, and even misuse terms such as 'field research', 'grounded theory', 'case study research', 'ethnography' and 'qualitative methods' or use the terms interchangeably. This obviously creates confusion and can damage perceptions of the methodology. Just as quantitative researchers take care to distinguish between various methods – rarely does one see research misusing the term ANOVA for event history analysis – so should researchers be clear about their use of terms describing qualitative techniques. Unfortunately, 'the label "qualitative methods" has no precise meaning in any of the social sciences. It is at best an umbrella term covering an array of interpretative techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomenon in the social world' (Van Maanen, 1979).

In some cases, qualitative data collection and analysis occur concurrently. This can arise when the researcher is interested in building theory inductively, as in the case of grounded theory building. In other cases, qualitative data collection techniques are used to provide fuel for deductive data analysis. This can occur when pre-existing data are not available to test a set of hypotheses based on existing theory. We will begin by discussing grounded theory building and then provide an overview of several of the common data collection techniques used within the grounded theory approach. We order our discussion in this way for two reasons. First, this allows the discussion to better mirror the early stages of an inductive research process – where the researcher first chooses a question of interest, then the analytic method, and then the specific data collection methods based on the particular context being researched. Second, while grounded theorists engage in a lengthy period of data analysis following data collection, they also engage in analysis concurrent with data collection. This process sometimes creates a perception of grounded theory building as mystical or lacking in rigor, however the process is in fact neither. The process forces the researcher to collect data in a thoughtful and nuanced way and, perhaps more importantly, to reorient the research questions or assumptions in a manner that allows theory to reflect newly observed facets of the phenomenon and its context.

Grounded Theory as an Analytical Tool

We focus our discussion on grounded theory building for two reasons: first, proper use of the technique can result in the creation of novel and illuminating theoretical concepts (thus moving beyond the limitation of theory testing inherent in cross-sectional survey research); and second, its prevalence in the literature on organizations. The grounded theory perspective, as conceived of by Strauss and his associates, is the most widely used qualitative approach in the social sciences today (Denzin and Lincoln, 1994, pp. 508–13). Its intent is to 'elicit fresh understandings about patterned relationships between social actors and how these relationships and interactions actively construct reality (Glaser and Strauss, 1967)' (Suddaby, 2006).

Grounded theory's distinctive features are its commitment to research and discovery through direct contact with the social world, coupled with a rejection of a priori theorizing (Locke, 2001). This does not mean that researchers should enter the field lacking an understanding of the literature or the theoretical question to be addressed. (In fact, researchers must be intimately familiar with the content, nuances, and weaknesses of existing theories.) It does mean that researchers should not allow preconceived constructs and hypotheses to guide data collection. While a priori theorizing is shunned, ex-post theorizing is required with a contextualization of the findings and novel theoretical contributions within the framework provided by existing theory. Glaser and Strauss (1967) argue that researchers must generate formal theories out of their data collection experiences in order to advance understanding of the social world. However, the theorizing process begins with the creation of theories that are substantive in nature:

By substantive theory we mean that developed for a substantive, or empirical, area of sociological inquiry, such as patient care, race relations, professional education, delinquency, or research organizations. By formal theory, we mean that developed for a formal, or conceptual, area of sociological inquiry, such as stigma, deviant behavior, formal organization, socialization. . . (Glaser and Strauss, 1967, p. 32)

To put things bluntly, grounded theory is *not* an excuse to ignore the literature.

Grounded theory building is a process. Its components include identifying a theoretical question of interest, choosing an appropriate research context, sampling within that context in such a way that data collection facilitates the emerging theory, and the making of constant comparisons between the collected data. We briefly describe each of these components below. Note that grounded theory building does not prescribe particular data collection methods; the choice of procedures for gathering and documenting data are left up to the researcher.

The question. Research questions best addressed by grounded theory building include those that explore new areas, seek to uncover processes, understand poorly understood phenomena, attempt to understand unspecified variables or ill-structured linkages, or examine variables that cannot be studied via experimentation (Glaser and Strauss, 1967; Marshall and Rossman, 1995; Miles and Huberman, 1994; Yin, 2003).

Theoretical sampling. The rationale behind theoretical sampling is to direct data gathering efforts towards collecting information that will best support the development of the theoretical framework (Locke, 2001). Researchers might choose samples in which they expect to support the emergent theory or samples in which they expect to refine and extend the emergent theory. The latter is often accomplished by choosing data collection contexts that represent polar types – to show that their theory applies across a variety of contexts or to define the boundaries of the theory – or that highlight dissenting views to help demarcate the boundaries of the emergent theory. For these reasons, random selection is neither necessary nor even preferable (Eisenhardt, 1989a). Data collection is an open ended and flexible process that will likely be modified over the course of the study.

Constant comparisons. Glaser and Strauss (1967) introduced the constant comparison method as the process by which researchers assign and create meaning from the observations recorded in the data.^[3] The constant comparative method is conceptualized and described in terms of four stages which span the entire study, beginning with comparing incidents applicable to each category (coding, comparing, and memoing are important components of this stage), integrating categories and their properties, focusing the theory, and writing the theory. These stages are not linear. Researchers instead iterate between the stages and ‘all stages are in operation throughout the analysis’ (Locke, 2001, p. 46). Through this process, concepts that explain patterns in the data are developed. Throughout the course of data collection, the researcher will make constant comparisons among the nuggets of information that they are collecting in order to identify patterns. The making of these comparisons influences data collection efforts, as well as theory development, e.g. a piece of information might suggest to the researcher that an additional perspective or variable should be examined more closely. Data analysis continues until *theoretical saturation* is reached, or when no new information indicating that categories or the relationships between them should be refined is uncovered through the analysis or collection of additional data.

Common Qualitative Data Collection Methods

Grounded theory building favours data collection methods that gather rich data directly from those people directly experiencing the phenomenon. Although a number of qualitative data collection methods exist, grounded theory research in management generally relies on three data gathering techniques: interviews, observation (both direct and participant), and the analysis of archival information (Marshall and Rossman, 1989). Each of these data collection methods has its own standards, best practices, and rules. The use of each of these techniques – particularly observation and interviews – is common in management research, with many studies combining the use of all three methodologies.

Interviews. Interviewing presumes that one can understand how the world is known by asking informants to answer open-ended (but structured) questions about their experiences. Interviews differ in the degree to which informants set the agenda, but in all instances informants describe their own experiences at length, including personal narratives or life histories. In-depth interviews are frequently used to collect differing perspectives on a topic. While most data collection efforts call for strong similarities in the questions asked across informants (to aid in the constant comparison process), the nature of grounded theory calls for flexibility in questioning to allow each informant some control over deciding what aspects of the phenomenon are most important from their experiences.

Observation. The goal of observation is to understand what it means to be a participant in the social situation – to understand how the social context influences individual behaviour and how individual behaviour influences the social context.

Qualitative observation is fundamentally naturalistic in essence; it occurs in the natural context of occurrence, among the actors who would naturally be participating

in the interaction, and follows the natural stream of everyday life. As such, it enjoys the advantage of drawing the observer into the phenomenological complexity of the world, where connections, correlations, and causes can be witnessed as and how they unfold. (Adler and Adler, 1994, p. 40)

The researcher might observe a group, community, or social context as either a participant observer or simply an outside observer, based on the degree to which they interact with other participants. The researcher may choose to explain his or her research interests to other participants or may (covertly) collect data without explanation.

Archival data. Archival data include pre-existing documents, photographs, email exchanges, audio and video recordings, and other artefacts. Archival data is most often used in conjunction with interviews and observations to develop a better understanding of the phenomenon of interest and the context in which that phenomenon is occurring. However, archival data may be used independently as well, particularly when attempting to understand historical incidents or economic or social systems. Nonetheless, given the desire of most grounded theorists to ‘get their hands dirty’ in the context within which the phenomenon is occurring, archival data often take a supporting role to interviews and observation in management research.

ENSURING RIGOR IN QUALITATIVE RESEARCH

While many have claimed a bias against qualitative research in our field’s top journals (a reality that certainly existed in the past), most top journal editors have shown an increased interest in high-quality qualitative research. The key words here are ‘high quality’, because many journal editors find themselves confronted with poorly executed qualitative research that must be rejected not because it is qualitatively-based, but simply because its rigor does not meet the high standards of the journal. To help with this problem, we provide a brief discussion of rigor in qualitative methods using Lincoln and Guba’s (1985) notion of ‘trustworthiness’ and Locke’s (2001) suggestions for how to judge grounded-theory research.

Lincoln and Guba (1985) explain that because interpretive research is based on a different set of ontological and epistemological assumptions than functionally-based research, the traditional notions of validity and reliability do not apply in the same fashion. They furnish an alternative set of criteria by which to judge the rigor of qualitative research. Credibility, Transferability, Dependability, and Confirmability. Each criterion includes a set of specific actions a researcher can take to help meet the criterion, as listed in Table II.

For judging grounded theory-based research in particular, Locke (2001) suggests three metrics: the extent to which it is pragmatically useful, its credibility, and its theoretical contribution. Pragmatic usefulness is at the heart of grounded theory practice because its purpose is to understand a phenomenon from the perspective of those living it, *in their daily practice*, or as Locke (2001, p. 59) explains, ‘good theory is one that will be practically useful in the course of daily events, not only to social scientists, but also to laymen’. She goes on to cite Glaser and Strauss’s (1967) four aspects of practical usefulness – fit,

Table II. Techniques to ensure the trustworthiness of qualitative research

<i>Traditional criteria</i>	<i>Trustworthiness criteria</i>	<i>Methods for meeting trustworthiness criteria</i>
Internal validity	Credibility	Extended engagement in the field Triangulation of data types Peer debriefing Member checks
External validity	Transferability	Detailed (thick) description of: <ul style="list-style-type: none"> • Concepts and categories in the grounded theory • Structures and processes related to processes revealed in the data
Reliability	Dependability	Purposive and theoretical sampling Informants' confidentiality protected Inquiry audit of data collection, management, and analysis processes
Objectivity	Confirmability	Explicit separation of 1st order and 2nd order findings Meticulous data management and recording: Verbatim transcription of interviews <ul style="list-style-type: none"> • Careful notes of observations • Clear notes on theoretical and methodological decisions • Accurate records of contacts and interviews

Source: Based on Lincoln and Guba (1985).

understandable, general, and control – to illustrate how good grounded theory has a solid fit between data and theory, is understandable to those living the phenomenon being explained, is general enough to apply to the diversity of the social context from which the theory emerged, and provides a measure of control for those living with the phenomenon. As for the metric of credibility, Locke suggests that credible theory both ‘has a greater range of analytic generalizability’ and achieves rhetorical plausibility between author and reader through clear presentation of the data and a thick description of the social context within which the data were collected and analysed (Locke, 2001, p. 60). Finally, good grounded theory provides a contribution to a particular literature by helping advance theoretical understanding.

As is evident in the above discussion, the potential for grounded theory research in particular, and qualitative methodologies in general, to provide important theoretical insights is very strong. When done rigorously and reported clearly and concisely, qualitative research is a powerful tool for management researchers, providing many advantages above and beyond what traditional survey research can provide. When rigorous qualitative research is combined with rigorous quantitative research, the potential is even greater.

SUCCESSFULLY PAIRING QUALITATIVE AND QUANTITATIVE RESEARCH

Theory building involves trade-offs (Fine and Elsbach, 2000). Weick (1979) discusses a simple framework for assessing theory along three dimensions: simplicity (i.e. ease of

understanding or application), accuracy (i.e. conformity to the truth) and generalizability (i.e. extension to other domains). Qualitative research is often accurate and potentially generalizable, but often overly complex.^[4] Large-sample quantitative studies often use proxies to measure aspects of the phenomenon of interest and might be categorized as being simple and generalizable, but lacking in accuracy. Any single method of data collection (e.g. cross-sectional survey-based studies, qualitative studies, experiments, large sample quantitative studies) results in tradeoffs in the resulting theory's simplicity, generalizability, and accuracy (Thorngate, 1976). Weick (1979) suggests that the solution is not to search for a method that combines all three elements (accuracy, generalizability, and simplicity) but to build theory by alternating among sets of data that provide one or more of these elements or by incorporating complementary research conducted by others.

We now focus on the process by which researchers might combine the use of qualitative and quantitative techniques to contribute to the development of both substantive and formal theory, whether through the creation of novel concepts or through extension of existing concepts. The underlying philosophical differences separating quantitative research from most qualitative research might make it appear that the two cannot be combined. Fortunately, this is not the case. Several researchers have provided examples and guidance on how to combine the use of these paradigms within a research stream and even within a single study.

Gioia and Pitre (1990) provide one of the clearest statements on how the philosophical differences between functionalist and interpretivist paradigms can be overcome in organizational research. Focusing explicitly on theory building, they describe a multi-paradigm approach that 'bridges' the philosophical boundaries often separating methodologies. They suggest bridging by either taking advantage of the blurred boundaries between paradigms or by taking a metaparadigm view where 'the intent is to understand, to accommodate and, if possible, to link views generated from different starting assumptions' (p. 596).

From a purely methodological perspective, several early writings on 'triangulation' provide guidance on combining quantitative and qualitative methods (Denzin and Lincoln, 1994; Jick, 1979; Van Maanen, 1979; Webb et al., 1966). Van Maanen (1979) and Jick (1979) were among the first organizational researchers to systematically examine the usefulness of combining multiple methods as a way to 'triangulate' findings in the service of theory development and enhancement. Van Maanen argues that 'qualitative methodology and quantitative methodology are not mutually exclusive', while Jick demonstrates the usefulness of including a more systematic approach to qualitative work with a more observational approach to survey-research in providing a more complete picture of a phenomenon than either methodology could accomplish alone.

In terms of successful examples of combining qualitative and quantitative methods, the field has much to offer.^[5] Fitting the traditional notion of starting with qualitative methods to build an initial theoretical framework and then using the quantitative methods to test and extend that theory, Ziedonis (2004) examines the causes of 'patent portfolio races' among firms with large, complex manufacturing facilities. Prior interviews with executives suggested that the 'racing' effect was driven not only by the

observable scale of investments, but also by the likelihood of ex-post licensing negotiations with outside patent holders. Her paper draws on these qualitative insights to refine theory and confirms those insights with a quantitative test. Similarly, Gioia and Thomas (1996) approached their study of strategic change in academia by first building grounded theory on the change process through in-depth interviews and non-participant observations of strategic meetings among executives in a major US research institute. Once they had developed their empirically grounded theoretical model, they provided a quantitative test of it by surveying 611 executives from 372 colleges and universities throughout the USA. In this way, they were able to bridge paradigms to provide not only an accurate and simple theory, but also one that was generalizable to a larger domain than their original case. Finally, Ely's (1994) study of women in the upper echelons of organizations simultaneously used both quantitative and qualitative data to provide key insights into the role demographics and social identity played in their professional relationships and career paths.

Qualitative inquiry might also *follow* quantitative analysis. Such an activity might appear methodologically incongruous to some, but is particularly useful when a researcher wishes to (a) attempt to explain the existence of an unexpected pattern in the data, or (b) attempt to uncover the mechanism(s) that create that unexpected pattern (and is especially useful when the mechanism is not well-understood theoretically or when an alternative mechanism(s) might be relevant). For example, Sutton and Rafaeli (1988) began with an interest in quantitatively testing theory in the context of emotional displays. When they uncovered evidence disconfirming existing theory, they collected and analysed qualitative data in the hope of better understanding the phenomenon from those actually living it. Based upon this new empirically-grounded theory of emotional display, they subsequently provided another quantitative test that largely supported their qualitative findings in a more generalizable context.

CONCLUSION

We began this article with the argument that qualitative methods overcome a key limitation of most quantitative research: the inability to build theory. While we stand firmly behind this message and its implications for the future of organizational research, we also believe that the increased use of multiple methods is necessary to build accurate, generalizable, and practically useful theory in a field as inherently complex as management research. As illustrated by the examples in the preceding section, the benefits of combining qualitative and quantitative methods to form a more complete picture of a phenomenon far outweigh the costs of time and effort. Implementing this more complete methodological strategy, however, requires organizational researchers to be more familiar and comfortable with the ontological, epistemological, and methodological foundations of both qualitative and quantitative research. Unfortunately, this is not the norm for most of us, and will require some re-education as we expand our methodological repertoires beyond the safety of our preferred perspective. We hope that this set of essays provides a starting point for those interested in becoming more complete organizational researchers capable of testing, refining, and building theory.

NOTE

*Rajshree Agarwal and Mike Wright provided helpful comments.

- [1] The following sources will be useful for those interested in learning how to conduct qualitative research: Glaser and Strauss (1967), Strauss (1987), articles in the 1979 *Administrative Science Quarterly* Special Issue on Qualitative Methodology (see introduction by Van Maanen, 1979), Corbin and Strauss (1990), Eisenhardt (1991), Golden-Biddle and Locke (1993), Guba and Lincoln (1994), Jick (1979), (Zimbardo (1969), Miles and Huberman (1994), Denzin and Lincoln (2000), Lee (1999), Locke (2001), Yin (2003).
- [2] A number of papers and special issues discuss influential organizational research informed by qualitative methods. See, for example, Van Maanen's (1998) review of qualitative research from 1956 to 1996 appearing in *Administrative Science Quarterly*; Morrill and Fine's (1997) article highlighting the contributions of qualitative methods to organizational sociology; Fine and Elsbach's (2000) article illuminating the role of ethnography in social psychological theory building; and Barr's (2004) article highlighting the contributions of qualitative methods in strategy research.
- [3] We provide a very short description of the process of grounded theory building. For an excellent and concise overview, interested readers should consult Chapter 4 of Locke (2001). Quantitative researchers charged with the task of reviewing or assessing qualitative work will find the chapter particularly useful.
- [4] And, at its worst, qualitative research can result in complex, narrow, and idiosyncratic theory that is not generalizable (Eisenhardt, 1989a).
- [5] We focus our examples on the coupling of qualitative methods with large sample quantitative studies; however, the coupling of qualitative and experimental methods has led to many advances in social psychology as well. See Fine and Elsbach (2000) for an excellent discussion and methodological guide.

REFERENCES

- Adler, P. and Adler, P. (1994). 'Observational techniques'. In Denzin, N. K. and Lincoln, Y. S. (Eds), *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.
- Barley, S. (1986). 'Technology as an occasion for structuring: evidence from observations of CT scanners and the social order of radiology departments'. *Administrative Science Quarterly*, **31**, 78–108.
- Barley, S. R. (1989). 'Careers, identities and institutions: the legacy of the Chicago School of Sociology'. In Arthur, M. B., Hall, D. T. and Lawrence, B. S (Eds), *Handbook of Career Theory*. New York: Cambridge University Press, 41–65.
- Barnard, C. (1938). *The Functions of the Executive*. Cambridge, MA: Harvard University Press.
- Barr, P. S. (2004). 'Current and potential importance of qualitative methods in strategy research'. In Ketchen, D. J. and Bergh, D. D. (Eds), *Research Methodology in Strategy and Management*. Elsevier, **1**, 165–88.
- Becker, H. S. (1963). *Outsiders: Studies in the Sociology of Deviance*. New York: Free Press.
- Burawoy, M. (1979). *Manufacturing Consent: Changes in the Labor Process Under Monopoly Capitalism*. Chicago, IL: University of Chicago Press.
- Burrell, G. and Morgan, G. (1979). 'Assumptions about the nature of science'. In *Sociological Paradigms and Organizational Analysis*. Portsmouth, NH: Heinemann, 1–35.
- Chandler, A. D. (1962). *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*. Cambridge, MA: MIT Press.
- Cialdini, R. B. (1980). 'Full-cycle social psychology'. In Bickman, L. (Ed.), *Applied Social Psychology Annual*. Beverly Hills, CA: Sage, **1**, 21–47.
- Cialdini, R. B. and Schroeder, D. A. (1976). 'Increasing compliance by legitimizing paltry contributions: when even a penny helps'. *Journal of Personality and Social Psychology*, **34**, 599–604.
- Corbin, J. and Strauss, A. (1990). 'Grounded theory research: procedures, canons, and evaluative criteria'. *Qualitative Sociology*, **13**, 3–21.
- Denzin, N. and Lincoln, Y. (1994). *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.
- Denzin, N. and Lincoln, Y. (2000). *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.
- Dubin, R. (1978). *Theory Building*. New York: Free Press.
- Dutton, J. E. and Dukerich, J. M. (1991). 'Keeping an eye on the mirror: image and identity in organizational adaptation'. *Academy of Management Journal*, **34**, 517–54.
- Eccles, R. G. and Crane, D. B. (1988). *Doing Deals: Investment Banks at Work*. Boston, MA: Harvard Business School Press.
- Echambadi, R., Campbell, B. and Agarwal, R. (2006). 'Encouraging best practice in quantitative management research: an incomplete list of opportunities'. *Journal of Management Studies*, **43**, 1803–22.

- Eisenhardt, K. M. (1989a). 'Building theories from case study research'. *Academy of Management Review*, **14**, 532–50.
- Eisenhardt, K. M. (1989b). 'Making fast strategic decisions in high-velocity environments'. *Academy of Management Journal*, **32**, 543–76.
- Eisenhardt, K. M. (1991). 'Better stories and better constructs – the case for rigor and comparative logic'. *Academy of Management Review*, **16**, 620–7.
- Ely, R. J. (1994). 'The effects of organizational demographics and social identity on relationships among professional women'. *Administrative Science Quarterly*, **39**, 203–38.
- Fine, G. A. and Elsbach, K. D. (2000). 'Ethnography and experiment in social psychological theory-building: tactics for integrating qualitative field data with quantitative lab data'. *Journal of Experimental Social Psychology*, **36**, 51–76.
- Gersick, C. J. G. (1988). 'Time and transition in work teams: toward a new model of group development'. *Academy of Management Journal*, **31**, 9–41.
- Gioia, D. A. and Chittipeddi, K. (1991). 'Sensemaking and sensegiving in strategic change initiation'. *Strategic Management Journal*, **12**, 443–58.
- Gioia, D. A. and Pitre, E. (1990). 'Multiparadigm perspectives on theory building'. *Academy of Management Review*, **15**, 584–602.
- Gioia D. A. and Thomae, J. B. (1996). 'Identity, image, and issue interpretation: sensemaking during strategic change in academia'. *Administrative Science Quarterly*, **41**, 370–403.
- Glaser, B. and Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine De Gruyter.
- Goffman, E. (1956). *The Presentation of Self in Every Day Life*. New York: Anchor.
- Golden-Biddle, K. and Locke, K. (1993). 'Appealing work: an investigation of how ethnographic texts convince'. *Organization Science*, **4**, 595–616.
- Guba, E. G. and Lincoln, Y. S. (1994). 'Competing paradigms in qualitative research'. In Denzin, N. K. and Lincoln, Y. S. (Eds), *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage, 105–17.
- Isabella, L. A. (1990). 'Evolving interpretations as a change unfolds: how managers construe key organizational events'. *Academy of Management Journal*, **33**, 7–41.
- Janis, I. L. (1972). *Victims of Groupthink*. Boston, MA: Houghton-Mifflin.
- Jick, T. D. (1979). 'Mixing qualitative and quantitative methods: triangulation in action'. *Administrative Science Quarterly*, **24**, 602–11.
- Kanter, R. M. (1977). *Men and Women of the Corporation*. New York: Basic Books.
- Kunda, G. (1992). *Engineering Culture: Control and Commitment in a High-Tech Corporation*. Philadelphia, PA: Temple University Press.
- Labianca, G., Gray, B. and Brass, D. J. (2000). 'A grounded model of organizational schema change during empowerment'. *Organization Science*, **11**, 235–57.
- Latour, B. and Woolgar, S. (1979). *Laboratory Life: The Construction of Scientific Artifacts*. Princeton, NJ: Princeton University.
- Lee, T. (1999). *Using Qualitative Methods in Organizational Research*. Thousand Oaks, CA: Sage.
- Lincoln, Y. and Guba, E. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage.
- Locke, K. (2001). *Grounded Theory in Management Research*. Thousand Oaks, CA: Sage.
- Marshall, C. and Rossman, G. (1989). *Designing Qualitative Research*, 2nd edition. Newbury Park, CA: Sage.
- Marshall, C. and Rossman, G. (1995). *Designing Qualitative Research*. Thousand Oaks, CA: Sage.
- Miles, M. B. and Huberman, A. M. (1994). *Qualitative Data Analysis*. Thousand Oaks, CA: Sage.
- Milgram, S. (1974). *Obedience to Authority: An Experimental Overview*. New York: Harper and Row.
- Mintzberg, H. (1973). *The Nature of Managerial Work*. New York: Harper and Row.
- Mintzberg, H. (1979). 'An emerging strategy of direct research'. *Administrative Science Quarterly*, **24**, 105–16.
- Morgan, G. and Smircich, L. (1982). 'The case for qualitative research'. *Academy of Management Review*, **5**, 491–500.
- Morrill, C. and Fine, G. A. (1997). 'Ethnographic contributions to organizational sociology'. *Sociological Methods & Research*, **25**, 424–51.
- Roy, D. (1952). 'Quota restriction and goldbricking in a machine shop'. *American Journal of Sociology*, **57**, 427–42.
- Schein, E. H. (1956). 'The Chinese indoctrination program for prisoners of war: a study of attempted brainwashing'. *Psychiatry*, **19**, 149–72.
- Sherif, M., White, B. J. and Harvey, O. J. (1953). 'Status in experimentally produced groups'. *American Journal of Sociology*, **66**, 370–9.

- Strauss, A. (1987). *Qualitative Analysis for Social Scientists*. New York: Cambridge University Press.
- Suddaby, R. (2006). 'From the editors: what grounded theory is not'. *Academy of Management Journal*, **49**, 633–42.
- Sutton, R. I. (1987). 'The process of organizational death: disbanding and reconnecting'. *Administrative Science Quarterly*, **32**, 542–69.
- Sutton, R. I. (1993). 'The virtues of closet qualitative research'. *Organization Science*, **8**, 97–106.
- Sutton, R. I. and Rafaeli, A. (1988). 'Untangling relationships between displayed emotions and organizational sales: the case of convenience stores'. *Academy of Management Journal*, **31**, 461–87.
- Thorngate, W. (1976). '“In general” vs. “it depends”': some comments on the Gergen-Schenkler debate'. *Personality and Social Psychology Bulletin*, **2**, 404–10.
- Van de Ven, A. H. (1989). 'Nothing is quite so practical as a good theory'. *Academy of Management Review*, **14**, 486–9.
- Van Maanen, J. (1979). 'Reclaiming qualitative methods for organizational research: a preface'. *Administrative Science Quarterly*, **24**, 520–6.
- Van Maanen, J. (1998). 'Different strokes: qualitative research in the Administrative Science Quarterly from 1956 to 1996'. In Van Maanen, J. (Ed.), *Qualitative Studies of Organizations*. Thousand Oaks, CA: Sage, ix–xxxii.
- von Hippel, E. (1988). *The Sources of Innovation*. New York: Oxford University Press.
- Webb, E. J., Campbell, D. T., Schwartz, R. D. and Sechrest, L. (1966). *Unobtrusive Measures: Nonreactive Research in the Social Sciences*. Chicago, IL: Rand McNally.
- Weick, K. E. (1979). *The Social Psychology of Organizing*. Reading, MA: Addison-Wesley.
- Weick, K. (1995). 'What theory is not, theorizing is'. *Administrative Science Quarterly*, **40**, 385–90.
- Whyte, W. F. (1943). *Street Corner Society: The Social Structure of an Italian Slum*. Chicago, IL: University of Chicago Press.
- Yin, R. K. (2003). *Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage.
- Ziedonis, R. H. (2004). 'Don't fence me in: fragmented markets for technology and the patent acquisition strategies of firms'. *Management Science*, **50**, 804–20.
- Zimbardo, P. G. (1969). 'The human choice: individuation, reason, and order versus deindividuation, impulse, and chaos'. In Arnold, W. T. and Levine, D. (Eds), *Nebraska Symposium on Motivation*. Lincoln, NE: University of Nebraska Press, 237–307.