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Choosing Qualitative Methods for Entrepreneurial Cognition Research: A Canonical Development Approach

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This article presents a structured, manageable approach to the complex problem of how to choose, from the vast arsenal loosely labeled “qualitative methods,” sets of techniques appropriate to advancement of the emerging field of entrepreneurial cognition. Summary consideration is given to four key issues of philosophical context as a necessary predicate to presentation of a “canonical development” approach, stylized in diagrammatic form. The approach is able to accommodate due regard for both methodological controversy and operational complexity without being overwhelmed by either. Three illustrative examples indicate how use of the approach can stimulate a researcher to create productive matches between questions evolved from the entrepreneurial cognition canon and techniques selected from the complex array of qualitative methods.

Thus, it is fruitful for us to focus on how entrepreneurs acquire knowledge about the environment, and how knowledge is processed in the minds of the entrepreneurs. (Busenitz & Lau, 1996)

Introduction: A Problem of Combination

The Research Problem

The research problem is to combine a view about the near future of the emerging discipline of entrepreneurial cognition, with a view about the selection of qualitative methods most likely to be useful to that process of emergence. Separately, each task is difficult: in combination they are formidable. My proffered “solution” to the problem of combination is to concentrate on developing an *approach to the selection of methods* rather than providing either advocacy of any general philosophy of research or detailed redescription of the technical complexities of a vast array of particular operational

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techniques. The article presents a potentially fruitful *canonical development approach* to the choice of methods in the new field. I define the “canon” of a discipline as the list of books or works accepted by a distinct scholarly community as constituting authoritative statements of knowledge in their well-bounded field. In dynamic fields—and entrepreneurship and entrepreneurial cognition both qualify—new discoveries and new ways of discovering often challenge the “state of the art.” It then becomes a key issue to combine respect for the current state of knowledge (and the art and science that produced it), with the open-mindedness to accommodate new perspectives on the knowledge discovery process. In my conception, a canonical development approach to the accommodation and implementation of new methodologies, provides a way to combine the best aspects and minimize the worst of two more common but less productive alternatives: paradigm conflict and philosophical avoidance.

At one extreme is what might be called the paradigm-conflict perspective; an attempt to tackle the methods choice problem based on arguing the relative merits of different a priori generic philosophies of research. At the other extreme, is what might be called the philosophical-avoidance perspective, which regards any and all matters of metaphysical context as simply too hard to deal with and too productive of conflict. Accordingly, discussion of philosophical context is sacrificed to the expedient need to articulate the complex mechanical aspects of data collection and analysis. Miles and Huberman (1994, p. 2) summarize these latter sentiments:

At times it seems as if the competing, often polemical arguments of different schools of thought about how qualitative research should be done properly use more energy than the actual research does. We confess to liking George Homans’ (Homans, 1949) remark: “People who write about methodology often forget that it is a matter of strategy, not of morals.” (Miles & Huberman, 1994)

Michael argued that any process of method selection that lacks an appropriate and well-articulated contextual framework is rootless and insubstantial (Michael, 1985, p. 94). This places Michael firmly in the camp of all who recognize that knowledge construction processes affect knowledge outputs in ways that render it highly dangerous to make bold claims about objectivity. In the natural sciences the famous Heisenberg uncertainty principle recognizes the distorting effects of the measuring instrument upon the object it measures and the measurement thus produced. In the social sciences, Habermas has attempted to articulate the politics of knowledge production (Habermas, 1972, 1974) and to build a theory of knowledge-constitutive interests (Habermas, 1984, 1987). Habermas is recognized as one of the foremost exponents of the now uncontroversial proposition that differences among research perspectives are not alone due to research methods and techniques (akin to the machinery of knowledge production) but the way researchers are located in the research act (akin to the machinery operator in a factory setting).

So what am I to do in this essay? Within the confines of a journal article, there is no space for either elaborate philosophical debate or exposition of even a fraction of the mechanical details of the now vast arsenal of qualitative methods. In this essay, therefore, I will try to make a case for a methods choice regime that is indicative rather than prescriptive and illustrative rather than comprehensive. I will try to steer a middle course between the extremities of the paradigm-conflict and philosophical-abdication perspectives by confronting rather than avoiding what I regard as the minimum amount of philosophical discussion mandated by the task, because it is a task of such compelling urgency.

The Urgent Need for Greater Use of Qualitative Methods

In entrepreneurship research, we simply have to try to motivate scholars who are more comfortable close to the positivist pole of the paradigm spectrum to contemplate and involve themselves in qualitative research or at least to learn to respect the knowledge perspectives and knowledge production techniques of those for whom the general linear model is not the only engine of wisdom. In my view, unless entrepreneurship generally and entrepreneurial cognition particularly begin to embrace higher volumes of higher caliber qualitative research, the relevance and potency of the entrepreneurial canon will be severely compromised by a lack of the methodological variety that is so strongly displayed in other social sciences.

There has been an explosion in the use of qualitative methods in almost every domain of the social sciences except entrepreneurship. More than a decade ago, Miles and Huberman, in the introduction to the second edition of their renowned sourcebook on qualitative data analysis techniques wrote:

The expansion of qualitative inquiry since the first edition of this book (Miles & Huberman, 1984) has been phenomenal. The base of books and articles we collected for this second edition has more than tripled over that for the first. (Miles & Huberman, 1994)

Between 1994 and 2004 the expansion of the “qualitative base” would, conservatively, be of the order of twenty-fold. However, qualitative methods are demonstrably underrepresented in both entrepreneurship research, generally, and entrepreneurial cognition research, specifically. Despite occasional special efforts (Gartner & Birley, 2002) and sporadic individual contributions, it is fair to say that quantitative methodology within a positivist or postpositivist paradigm dominates the entrepreneurship research literature in both the mindset of the majority of its practitioners and the volume of output in journals addressing the field. In their review of the decade-plus of entrepreneurship research since Low and MacMillan’s (1988) purview of the discipline, Chandler and Lyon (2001) reviewed four hundred and sixteen double-blind, refereed journal articles in nine top-tier journals. They found that only 18% of the empirical studies in their sample employed any qualitative techniques whatsoever. They cited only two qualitative research methods as prominent in this group of studies. There was content analysis of documents—which many qualitative methodologists would claim as a “mixed” or “quasi-positivist” method. And there were 54 case studies of which 39 used retrospective interviewing and only 8 embraced real-time approaches of frequent interviews or participant observation.

The scarcity and lack of variety of qualitative methods is replicated when one looks, specifically, at the entrepreneurial cognition canon itself. A literature review by Forbes (1999) comports strongly with my definition of the “canon” of a discipline as the list of books or works accepted by a distinct scholarly community as constituting authoritative statements of knowledge in their well-bounded field. Forbes reviewed thirty-four substantial studies in the emerging field of entrepreneurial cognition (Forbes, 1999). Twenty-five of these were empirical studies. Of these, seventeen were questionnaire surveys, analyzed using parametric statistics. This represents a stunning lack of variety. There were two other quantitative research designs and only six qualitative studies: one on causal mapping; one field observation study; one semi-structured depth interview design and three case research designs. This paucity of qualitative work needs urgent redress.

The Case for a Middle Course: A Canonical Development Approach

A well-structured approach to the problem of matching research technique to research question will specify which techniques of investigation (the choice-of-methods problem) are appropriate to what key questions in the field (the ontological problem) and give reasons why (the axiological and epistemological problems). A succinct but not vehement statement of approach stands at least some chance of transcending different readers' preferred paradigm biases because it is as useful to those who disagree with the approach as it is to those who agree. If researchers make their biases and perspectives as clear as their arguments, readers can understand and derive value from the arguments without necessarily sharing the biases and perspectives of the presenters. I offer, as an example, an article by David Ogbor that comes from a paradigm perspective I do not share and is overtly scathing about the entire research achievement in the entire field of entrepreneurship research to date.

Utilizing axiological and epistemological stances compatible with the postmodernist, deconstructionist, and critical theory traditions, Ogbor has argued that the very concept of entrepreneurship is:

... discriminatory, gender-biased, ethnocentrically determined and ideologically controlled, sustaining not only prevailing societal biases, but serving as a tapestry for unexamined and contradictory assumptions and knowledge about the reality of entrepreneurs ... (Ogbor, 2000, p. 605)

This conclusion does not seem to leave the author much scope for an open-minded dialogue with an old-fashioned, quantitatively oriented person who, for instance, wanted to test an hypothesis about, say, numerical differences in start-up rates in different regions of a country. Ogbor is an obviously ardent adherent of views that are paradigmatically a long way from my own general philosophy of research. For those who like labels, my general philosophy of research would be fairly easy to position. Using Neuman's three-paradigm taxonomy (Neuman, 1994), I emerge as a "mild postpositivist with intuitivist leanings." I like Karl Popper's (Popper, 1966; 1989) notion that theories should consist of falsifiable propositions. And I like equally the contention contained in the very first incarnation of Grounded Theory (Glaser & Strauss, 1967) that systematic interpretation of qualitative data is a great way to generate propositions about the social world in the first place. So, I am a long way from subscribing to Ogbor's radical, paradigmatic views. But I am not a long way from appreciating their value. Reading his article, I disagreed with much of his argument and most of his conclusions. But I learned a lot from him. Because he stated his biases forthrightly, I was able to transcend any personal, preconceived paradigm bias I might have had against him and concentrate on the questions he discussed rather than the point of view from which he discussed them.

This is an example of what I mean by the canonical approach to civilized debate. Questions at issue are approached through an attempt to understand and value multiple perspectives without resiling from the ultimate need to make a judgment. This process is also at the heart of one of the great pillars of a free society: the rule of law. In this version of a canonical approach, precedents are established in practice and issues are refined. A body of case law—a canon if you will—is built. Judgments are made that are influential but not insurmountable. In our scholarly quest for a better understanding and judgment about the empirical world, we can benefit by bringing such a canonical approach to the issue of choice among research methods.

There is a risk in using the term "canon" in the liberating sense that I intend because invocation of "canon" often implies rigid conservatism and adherence to "old wisdom"

at all costs. This is the exact opposite of the intent expressed in this essay. I shall treat the sensitive use of the canon as a liberating force. Deep knowledge of established wisdom has two virtues: it prevents wasteful re-invention of the wheel and it encourages diversity of approach to core issues. This is not to say that the established canon should, ideally, either determine or restrict new questions asked in the field. The most obvious illustration of the difference between influence and restriction is also the most common one: where a researcher detects a gap in existing knowledge and determines to fill it with a pioneering study. Methodological expansion usually begins through application of new techniques to existing issues. The simultaneous combination of new methods to new issues is unusual but not impossible. A canonical development approach is liberating because of its emphasis upon *development*. Canon is used as the adjective, not the noun: the qualifying not the definitive concept. Canon is a starting ingredient not an end point. The canonical development approach provides openness to new insights: not mere adherence to inflexible writ, which many people associate with the use of the term “canon.” A canonical development approach thus implies and demands that both readers and writers in the field are characterized by breadth of mind, tolerance, and a pragmatism that allows for matching variety in both philosophy and execution to suit variety in the nature of problems encountered. Imagine the richness of a field that had the magnanimity to embrace, without rancor, the vastly different worldviews and insights of critical theorists like David Ogbor and advocates of positivist rigor like Ian Macmillan. The canonical development approach offers the possibility to make it happen. That is liberation.

From the perspective of a canonical development approach, “methods” are best regarded as strategic devices, skills, and potentials (Denzin & Lincoln, 2003c). They become “methodologies” only when philosophically combined with what I call the philosophical issues quartet: an axiology; an epistemology; a set of beliefs about what qualifies as a valid logic of inquiry; and an ontology. In this article I contend that choice of qualitative methods in entrepreneurial cognition research should be sensitively aware of the contextual importance of the first three generic philosophical issues but guided principally by the last. A better set of method selection guidelines is likely to flow from consideration of specific issues and questions that emerge as researchers develop the field (emergent ontology) than from adoption and promotion of a general, a priori, philosophical approach to all research. In short, my perspective on the methods-choice problem is to adopt and pursue an approach based on a structured framework of core research issues developed from the emerging “canon” in the field of entrepreneurial cognition. This may be termed a canonical development perspective as distinct from either the paradigm-based or philosophical-avoidance perspectives more usually adopted by advocates of particular research methods.

Focus and Structure of the Argument

The canonical development perspective thus focuses on contextual approach to methods, not theoretical justification or descriptive explanation of them. Accordingly, analysis will minimize without avoiding discussion of the *why* of qualitative methods: issues of axiology, epistemology, and paradigm positioning (Denzin & Lincoln, 2003a, 2003b, 2003c). It will substantially avoid mere redescription of the *how* of specific qualitative methods—properly the domain of textbooks, sourcebooks and handbooks (Denzin & Lincoln, 2000; Miles & Huberman, 1994). The focus of this article is upon making use of *where* the discipline of entrepreneurial cognition is going (the evolving canon) as a guide to *what* qualitative methods (including method clusters, data collection techniques

and analysis techniques) can most fruitfully be applied to enrichment and development of the field. The article proceeds as follows.

It begins with a contextual discussion of the impact of competing axiologies, epistemologies, and paradigms upon researchers' beliefs about what constitutes a generally legitimate logic of inquiry. This leads to identification, for the entrepreneurial cognition field, of three prospective logical hurdles to the very possibility of using any qualitative methods whatsoever. These hurdle issues are: introspection, holism, and temporality. After arguing that the hurdles can be surmounted, I offer a summary presentation of the ontological evolution of the field in the form of a brief survey of four important literature reviews featuring the interface between cognition and organizations. The last of these reviews, that by Forbes (1999), culminates with a diagrammatic presentation of the salient features of the emerging entrepreneurial cognition canon in the form of a chart that distills investigative themes, issues and variables. I then develop and diagrammatically present a canonically based, question-centered framework/map for choosing methods. Next, the framework is selectively applied to illustrate how good matches can be made between the investigative attributes of particular qualitative methods and the investigative priorities resident in various areas of the emerging canon. Discussion and conclusion are centered on the issues of how necessary and how likely it is that qualitative methods can gain any significant foothold in a field hitherto dominated by quantitative studies.

Contextual Predicates to the Choice of Research Methods

From Methods to Methodology and Back: Dances with Metaphysics

The question in this section of the article is: can methods discussion transcend methodology?

Anyone attempting to supply research methods guidelines in any area of social research is caught between the rock of technical detail (the "how to do it" issue) and the hard place of methodological debate (the "how to justify it" issue). In this section I shall try to find a middle path. It will not satisfy adherents at the extremity of the methods/methodology debate. Those who eschew and despise all philosophical, methodological debate and seek exclusive concentration on the mechanics of particular methods will feel I digress too much. Those, mainly adherents of critical theory, who believe in the complete impossibility and inadvisability of distinguishing the technical and philosophical aspects of method, will feel short changed. I justify the search for a middle position first on grounds of reasonable expediency within the confines of a journal article seeking an audience encompassing multiparadigm perspectives.

Second, as Neuman, discussing the evolution of social inquiry has remarked:

Social research did not stop while the philosophers debated (Busenitz & Lau, 1996). Denzin and Lincoln are the editors of the extensive, useful and influential *Handbook of Qualitative Methods*, a work that is currently in its third edition (2003a,b and c), and is so voluminous that its paperback version is now provided in three distinct volumes (Denzin & Lincoln, 1994a, 1994b, 1998, 2000, 2003a, 2003b, 2003c). If a person ever encounters an unfamiliar concept, term or procedure concerning qualitative methods—say in the course of reading a journal article—it is likely that that person will eventually refer to Denzin and Lincoln in the quest for clarification. I recommend such a course of action to any reader seeking greater depth on any issue I expound (or avoid) in this article. With respect to the area of generic philosophical approach to research (sometimes thought of as the research paradigm within which researchers see themselves operating), Denzin and Lincoln presently articulate seven distinct approaches (Denzin & Lincoln, 2000). For

reasons of necessary simplification imposed by space constraints I will confine myself (Neuman, 2000) to only three descriptions distinguishing generic philosophical approach to social research. *Positivism* is the set of approaches defining social science as an organized method for combining deductive logic with precise empirical observations of individual behavior in order to discover and confirm a set of probabilistic causal laws that can be used to predict general patterns of human activity. The *interpretive* approach embraces the systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds. *Critical social science* (CSS or “critical theory”) defines social science as a critical process of inquiry that goes beyond surface illusions to uncover the real structures in the material world in order to help people change conditions and build a better world for themselves.

These three definitional categories (let alone Denzin and Lincoln’s seven) are distinct enough to demonstrate the proposition that there are massive axiological, epistemological, logical, and ontological problems involved in any attempt to discuss the application of methods in any area of social science. Once again we encounter the “philosophical quartet” (axiology, epistemology logic-of-inquiry and ontology), which, in various combinations, constitutes various a priori approaches to the process of research inquiry. The ingredients can be mixed in a near infinity of proportional combinations. Formal subscription to a widely accepted, well-defined combination of the four philosophical ingredients may place one under the auspices of an established research paradigm as defined by Kuhn (1970). Informal and unacknowledged subscription to an idiosyncratic combination of the four ingredients may simply constitute a “stance” (if a reader of one’s work is sympathetic) or a “bias” (if a reader is unsympathetic) or a “prejudice” (if a reader is hostile). Irrespective of the details of particular combinations of the four philosophical ingredients, or whether the combination is conscious or unconscious, well-accepted or idiosyncratic, it is the very act of combination of these four philosophical ingredients that turns a method, or set of methods, into a methodology (literally—per *Oxford dictionary*—“a science of method”).

The first member of the philosophical quartet is axiology. It concerns the issue of values appropriate to the process of knowing. It is the study of the nature, types and criteria of values and of value judgments, especially in ethics. Readers can refer to Edwards (1995) for a detailed debate about the influence of axiology on choice of methods. Second, epistemology is fundamentally about *how* things can be known. It is the study or a theory of the nature and grounds of knowledge especially with reference to its limits and validity. Third, since logic is the science of the formal principles of reasoning, the logic-of-inquiry to which a person subscribes is concerned with *how well* the inquiry was conducted: with the criteria of validity, inference and demonstration. Finally, ontology fundamentally addresses the question of *what* can (and should) be known. It is a branch of metaphysics concerned with the nature of relations and being.

In the introduction to their three-volume compendium on qualitative research methods, Denzin and Lincoln are in accord with such an interpretation. They write:

Questions of [research] design always begin with a socially situated observer who moves from a research question to a paradigm or perspective, and then to the empirical world. So located, the researcher then addresses a range of methods that can be employed in any study. (Denzin & Lincoln, 2003c)

I do not, however, agree that the direction of inquiry and the relationship between researcher, question selection, philosophical stance and movement to the empirical world “always” occur in the order Denzin and Lincoln prescribe. For instance, paradigm-

orientation may predetermine the kind of research question in which one researcher is interested. For another researcher, an empirical observation may generate a question, followed by an initial method selection, which only then becomes moderated by philosophical considerations. And so on. However, I do agree with the two core ingredients of Denzin and Lincoln's proposition about research design: that in selecting and treating methods to address a research question the observer/researcher (1) is "socially situated"—not neutral or impassive and (2) adopts a philosophical stance (i.e., operates under the auspices a paradigm or perspective). Put starkly, method selection cannot be divorced from social and, especially, philosophical context. Adding the four dimensions of philosophical context to any choice of method is, in my view, what produces methodology.

In this essay, I avoid re-elaboration of paradigm distinctions ranging from hard-core positivism at one end of the spectrum to highly subjectivist variants of critical theory at the other. Such elaboration has been thoroughly done elsewhere. For example, Gioia and Pitre (1990) have produced an explanatory exposition of the range of research-orientation paradigms and Van de Ven (1993) has specified an infrastructure for the entrepreneurship discipline. Accordingly, in this article, I do not feel obliged to delve any further into the axiological or epistemological issues pertaining to choice of qualitative research methods beyond making the following two suggestions. First, all I ask of authors with respect to axiology and epistemology is that they succinctly and overtly, make their own philosophical position perfectly clear to the audience whenever the audience might reasonably contain readers for whom such an exposition would be beneficial. For instance, critical theorists writing in journals of critical theory can assume the audience "knows where they're coming from" and can probably avoid the need for any statement of axiological and epistemological position. The same would not be true if the same author were addressing a very different audience of largely positivist sympathies in a different journal. Users of the quantitative methods of inferential statistics, writing for positivist audiences, almost never feel obliged to provide any statement pertaining to the philosophical underpinnings of the general linear model. If they wrote for an audience of critical theorists, such a statement would be required. We do much harm to one another in the scholarly world through the process of elision and our great fear of preaching to the converted. This often translates to an unwillingness to include broad statements of belief about axiological and epistemological issues because, in doing so, an author runs the risk of seeming naïve or lecturing simplistically to the sophisticated. My second suggestion with respect to axiology and epistemology is a request aimed at the readers rather than the writers of social research. It is particularly germane to those who adhere strongly positivist inclinations. I ask for open-mindedness and acceptance of the principle that multiple approaches to knowledge are likely to convey the benefits of diversity.

With axiology and epistemology thus summarily dispatched, I turn next to three salient problems of the logic of inquiry in this field, and finally to the ontological evolution of the field.

Three Logical Hurdles to the Use of Qualitative Methods in Entrepreneurial Cognition Research

There are three main logical problems associated with any attempt to postulate a set of research methods for use in advancing the field of entrepreneurial cognition.

1. *The "introspection" issue.* Since, the "mother discipline" of cognition within the field of psychology has been historically suspicious of "introspection" (and, by association,

all qualitative methods) it may be asked whether there is *any* credible role for qualitative methods in *any* cognition studies field. Many would answer no.

2. *The holism issue.* For purposes of social science research, can entrepreneurial individuals be abstracted from the systems in which they operate? A high volume of established entrepreneurship research (c.f. Bygrave, 1989a) argues that the discipline is insolubly holistic in nature. If this position is pursued to its logical extreme, it may be argued that it is impossible to single out the individual as a valid unit of analysis in entrepreneurial inquiry.
3. *The issue of temporality.* Different cognitions are appropriate to different stages of the entrepreneurial process. So, the question becomes: does the sheer complexity of distinguishing different cognitions in different time periods proceed to infinity and defeat meaningful categorization of stages of the entrepreneurial process?

This section provides brief commentary about surmounting these apparent hurdles.

Hurdle 1: Introspection

A potentially major problem looms for the emergent field of entrepreneurial cognition. Historically, cognitive psychology, the mother discipline, has had a pronounced distaste for any research methods or methodologies that in any way can be labeled as “introspection.” By extension, this parental distaste appears to extend to all qualitative methods of data collection and analysis. Introspection depends on conscious experience, which is personal and private to each individual. Accordingly, it can be very dangerous to assume that introspection can provide useful evidence about many mental processes. Most “Cognition One” textbooks very early in their expositions alert students to the work of Nisbett and Wilson (1977) who argued, with the support of several examples, that introspection is “practically worthless” because people are generally unaware of the processes influencing their behavior.

When people are asked to report how a particular stimulus influenced a particular response, they do so not by consulting a memory of the mediating process, but by applying or generating causal theories about the effects of that type of stimulus on that type of response. (Nisbett & Wilson, 1977)

This could serve as a foundational statement linking many of the findings unearthed by entrepreneurial cognition researchers about the prevalence and importance of simplifying heuristics by entrepreneurs in their decision-making processes (Kahneman, Slovic, & Tversky, 1982; Kahneman & Tversky, 1973; Tversky, 1974). The proposition that an individual’s introspections about what is influencing (let alone determining) his or her behavior are often no more accurate than guesses made by others, is supported by a range of research findings—particularly those about implicit learning and implicit memory (see, for instance, Eysenck and Keane (2000, *passim*). This poses an obvious challenge to the use of many qualitative data collection methods—especially depth interviewing.

Fortunately, the use of introspection (and, by extension, qualitative methods) does have support among other researchers. Ericsson and Simon (1980, 1993) argued that Nisbett and Wilson (1977) had been excessive in their condemnation of introspection. Ericsson and Simon proposed three principal criteria for distinguishing between valid and invalid uses of introspection. First, if an introspective report can be gathered *during* the performance of a task rather than afterwards, problems pertaining to the fallibility of memory are considerably diminished. Second, participants are more likely to produce accurate introspections when *describing* what they are attending to, or thinking about,

than when required to interpret a situation or their own thought processes. Third, it pays to know and admit that there are several kinds of processes about which people cannot usefully introspect (e.g., neuronal processes) but to distinguish other areas where introspection can provide valid and useful data.

Careful consideration of the studies that Nisbett and Wilson (1977) regarded as striking evidence of the worthlessness of introspection reveals that participants generally provided retrospective interpretations about information that had probably never been fully attended to. (Eysenck & Keane, 2000)

Crutcher (1994) has proposed enhancements to Ericsson and Simon's guidelines (Ericsson & Simon, 1993) for responsible conduct of introspection research. The dominant implication of Ericsson and Simon's and Crutcher's work for the use of qualitative methods in entrepreneurial cognition studies is that we will do better to interview entrepreneur Jill while she is actively engaged in, say, the start-up phase of her business than in asking for a retrospective war story years after Jill Inc. has become a global success. And we are better to ask her what she is doing than why. We gain immediacy and systemic context and diminish the risk of a "rose-colored glasses" syndrome. Specific research methods focused on life history and *testimonio* (Beverley, 2003; Tierney, 2003) are now far more sophisticated than they were when Ericsson and Simon wrote. As will be subsequently demonstrated, these techniques can meet the call by entrepreneurial cognition researchers who, within the existing entrepreneurial cognition canon, have stressed the need for contemporaneous rather than post facto measurement (Palich & Bagby, 1995).

Finally, the statement of limitations that responsible qualitative researchers are bound to attach to any scholarly reports of their work in the entrepreneurial cognition field will need to articulate both their consciousness of the importance of the introspection problem to their study, and the means taken to address it. If these precautions are taken, entrepreneurial cognition researchers need not fear or exclude qualitative methods. They can surmount the introspection hurdle.

Hurdle 2: Holism

How far—if at all—can entrepreneurial individuals be abstracted from the systems in which they operate? Is entrepreneurship such a remorselessly holistic process that any form of reductionism is totally inappropriate? In short, is "the individual" a viable unit of analysis from the perspective of entrepreneurship? Many believe that the answer is a resounding "no."

Individual entrepreneurs do not live and operate in vacuums. They are part of complex systems. Starting with von Bertalanffy (1930) systems theory has developed as a discipline emphasizing the importance of mutual relationships in all natural and human affairs. A relatively recent statement of the "state of the art" of the systems theory view of the world is Hanson, B.G. (1995) *General Systems Theory: Beginning with Wholes*. In a very influential heavily cited article, William Bygrave (1989a) took "a philosophical look at entrepreneurship research methodologies." It started with the statement that "entrepreneurship begins with a disjointed, discontinuous, nonlinear (and usually unique event) that cannot be studied successfully with methods developed for examining smooth, continuous, linear (and often repeatable) processes." He identified as an important aspect of scientific research that "physicists examine nature by remorselessly isolating the parts from the whole"; it was reductionist in nature. Entrepreneurship research on the other hand, he argued, requires a nonreductionist approach.

And I am certain that we cannot separate entrepreneurs from their actions. After all in a start-up company, the entrepreneur and the company are one and the same . . . We should avoid reductionism in entrepreneurship research. Instead we should look at the whole. (Bygrave, 1989a)

If Bygrave is taken literally and is right, there can be no field of entrepreneurial cognition and the search for methods (be they qualitative or otherwise) to develop the field is superfluous. So, if the new discipline is to advance, all would-be entrepreneurial cognition scholars must confront the issue of holism overtly and vigorously. Fortunately the hard work has already been done. With specific reference to entrepreneurship research, Rebernik and Mulej (2000) have developed the concept of *requisite holism*. It presents an intellectually articulate means for balancing respect for the fact that an entrepreneur is indivisibly part of a system with the desirability of being able to focus very closely on the human and personal aspects of the entrepreneurial process. Their aim was a “realism” that:

prevents exaggeration in both over-simplification and total holism. This is a precondition for the outcomes to make sense and to be close enough to life “out there.” (Rebernik & Mulej, 2000)

Their conclusion was:

A brief summary of the law of requisite holism may thus read as follows: In consideration of complex features and processes, the exaggeration of false holism, which is caused by limiting consideration to a single viewpoint, and the exaggeration of total holism, which is caused by the absence of any limitation on the selection of a system of viewpoints, must be avoided. A requisite system is introduced by a “dialectic system” as a system of all essential, but only essential, viewpoints. (Rebernik & Mulej, 2000)

Herein, there is no scope or need to repeat the chain of argument leading to Rebernik and Mulej’s conclusion or their recommended regime for determining requisite holism. It is sufficient to record that the concept of requisite holism, resident in the entrepreneurship literature, permits researchers to exercise considered judgment concerning multiple aspects of the environment and system of which the individual entrepreneur forms a part. It mandates that entrepreneurial cognition researchers must provide adequate but not excessive context as the necessary foil to their concentration on individuals’ knowledge structures, which are the principal object of their investigations. In practice, the biggest obstacle to implementation of this mandate is the selection and depiction of an appropriate “slice” of time. So, having jumped our second logical hurdle it is time for a run at the third.

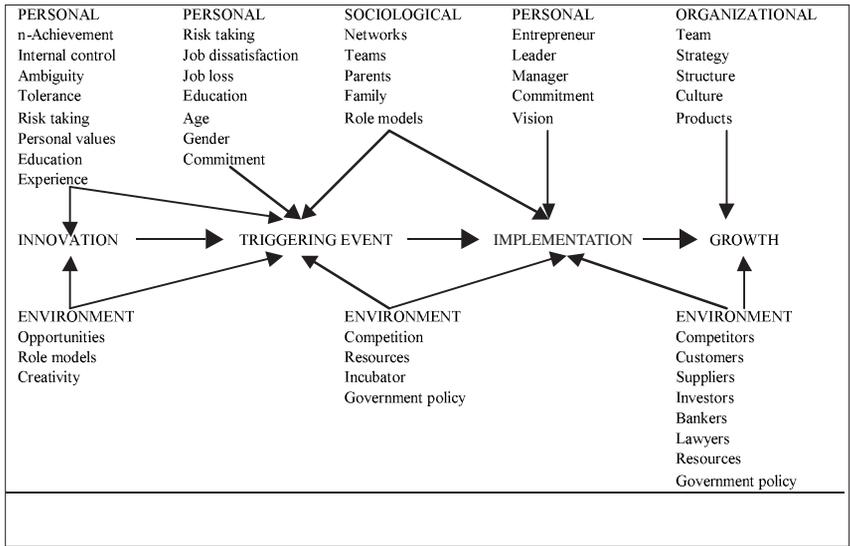
Hurdle 3: Temporality

In summing up a pioneering piece of entrepreneurial cognition research, two respected scholars pithily articulated the particular relevance of temporality as an issue for the field:

. . . we examined evidence for categorization processes that follow immediately after reviewing business scenarios. This approach fails to consider distortions that may occur only after a certain interval of time has lapsed. Detection of these delayed effects must await alternate study designs. (Palich & Bagby, 1995)

Figure 1

Moore’s Framework of the Influences on Entrepreneurial Process through Time



Sources: (Bygrave, 1989a; Bygrave & Churchill, 1989b; Moore, 1986)

With focus on the respondent rather than the researcher, Fritz Heider’s landmark presentation of attribution theory (Heider, 1958, *passim*) informs us that cognition is difficult to study because individual human beings change their thinking processes in accordance with changed circumstances over time. The theory of qualitative methodology (cf. Denzin & Lincoln 1994, 2000, 2003a, 2003b) and the practice of empirical work in the cognition, social cognition and entrepreneurial cognition fields (Forbes, 1999; Mitchell, Busenitz et al., 2002; Mitchell, Smith et al., 2002) all converge to agree that temporality distorts perspective, changes the relative influence of environmental variables and determines the degree of validity pertaining to inferences drawn from both mental examination and behavioral observation.

An often-cited schematic illustration of the impact of temporality on entrepreneurial circumstances was furnished by Moore (1986) as amended by Bygrave (1989a) and is reproduced as Figure 1, above.

I summarize the Moore framework as follows. It represents that there are four stages of the entrepreneurial process (innovation, triggering event, implementation, and growth); that, at each stage, entrepreneurial decision making and performance are simultaneously impacted by cognitive and environmental variables; and that, in the cognitive domain, the proportional importance of individual, sociological and organizational factors varies with respect to temporality (the stage of the process).

Stemming from the influential article by Churchill and Lewis (1983) so-called “stage models” of the entrepreneurial process abound. It is not necessary to examine every stage-model of the entrepreneurial process ever created in order to perceive the most important general point, which as a class, they impose upon the study of entrepreneurial

cognition. Consideration of the diagram indicates that different cognitions are appropriate to different stages of the entrepreneurial process. In accordance with the principle of requisite holism (Rebernik & Mulej, 2000) presented in the previous section, entrepreneurial cognition researchers should feel obliged to specify the temporal contextual boundaries of their investigations.

In summary, for entrepreneurial cognition methodology, time matters and complicates the issue of choice. It does not overwhelm it.

Ontological Evolution of the Entrepreneurial Cognition Field: The Emergent Canon

Entrepreneurial cognition is a young subfield seeking—after the palpable failure of trait theory (Shaver, 1995)—to reassert the importance of the individual, sentient human being as an object worthy of being an empirical unit of analysis in entrepreneurship research. At the heart of this discipline is the core psychological trinity of person, process, and choice (cf. Shaver & Scott, 1991). This heartland recognizes that *social* cognition is the key to understanding entrepreneurial thinking and action at the individual level. The locus of entrepreneurial thinking is not just between peoples' ears; we are bound to consider the complex interaction of mind and environment.

At the broadest level the present article accepts Shane and Venkataraman's (Shane & Venkataraman, 2000) definition of entrepreneurship.

... we define the field of entrepreneurship as the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated and exploited (Venkataraman, 1997). Consequently, the field involves the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them. (Shane & Venkataraman, 2000)

More specifically, this article accepts the definition by Mitchell, Busenitz et al. (2002), explaining that entrepreneurial cognition (singular) is the over-arching process that encompasses a range of particular mental processes, called entrepreneurial cognitions (plural).

Entrepreneurial cognitions are the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation and growth. In other words, research in entrepreneurial cognition is about understanding how entrepreneurs use simplifying mental models to piece together previously unconnected information that helps them to identify and invent new products or services, and to assemble the necessary resources to start and grow the business. (Mitchell, Busenitz et al., 2002)

These definitions are not sufficient to dismiss all further ontological discussion. It will be helpful to amplify some of the key issues inherent in the nature of the field by outlining, briefly, some aspects of its evolution. The fuller history of the evolution from cognitive psychology, through social cognition to the state of the art of entrepreneurial cognition remains to be written. With a view to ultimately specifying a regime for matching methods to questions, I am concerned in this section only with “edited highlights”—not the full story—of the ontological development of the field through the actual conduct of research. What is seminal for this article is to indicate work that has particular relevance to formulating the key issues and problems confronting the phenomenon of choice of qualitative research methods.

J.R. Anderson's *Cognitive Psychology and its Implication* (Anderson, 1990) provides a thorough overview of the “mother” discipline, in language accessible to the nonpsychologist. The “child” discipline is “social cognition” whose father must be recognized as Albert Bandura. His long list of works find their apogee in his *Social Foundations of Thought and Action: A Social Cognitive Theory* (Bandura, 1986). The “grandchild” field, entrepreneurial cognition, has had a difficult birth and complex infancy but two “bookend” conferences provide convenient place-markers in the history of the field's development. In 1991 a National Meeting of the Academy of Management held a symposium entitled “Cognitive Models of Entrepreneurial Intention: Understanding Entrepreneurial Vision” (Katz, 1992). In 2002, at the University of Victoria in British Columbia, a conference was held that resulted in a special issue of the journal, *Entrepreneurship Theory & Practice* being devoted to entrepreneurial cognition: the issue was published in late 2002 (Mitchell, Busenitz et al., 2002). Meanwhile, four literature reviews have charted a body of work relevant to the field. I will survey them briefly.

In 1995, Walsh took what he called “a trip down memory lane” and published a detailed review of the managerial and organizational cognition literatures (Walsh, 1995). The journey revealed a very eclectic field populated by many significant constructs but the most important was “knowledge structure or schema.”

A knowledge structure is a mental template that individuals impose on an information environment to give it form and meaning. (Walsh, 1995)

Walsh developed an organizing framework for classifying and commenting upon the various strands of the disparate knowledge structure research literature. Its essential feature was recognition of the interaction between individuals' knowledge structures and the information environment.

Hodgkinson provided a review and critique of the cognitive analysis of competitive structures (Hodgkinson, 1997). He did so in an attempt to synthesize key empirical findings and identify significant theoretical and methodological issues, which would warrant further investigation. He argued that the associated notions of “competitive enactment” and “cognitive life cycle”—work advanced by Porac and colleagues (Hill & Levenhagen, 1995; Levenhagen, Porac, & Thomas, 1993b; Levenhagen, Porac, & Thomas, 1993; Levenhagen, Porac, & Thomas, 1993a; Porac, Thomas, & Baden-Fuller, 1989)—represent a “potentially major breakthrough in our understanding of the dynamics of competition in industries and markets” (Hodgkinson, 1997).

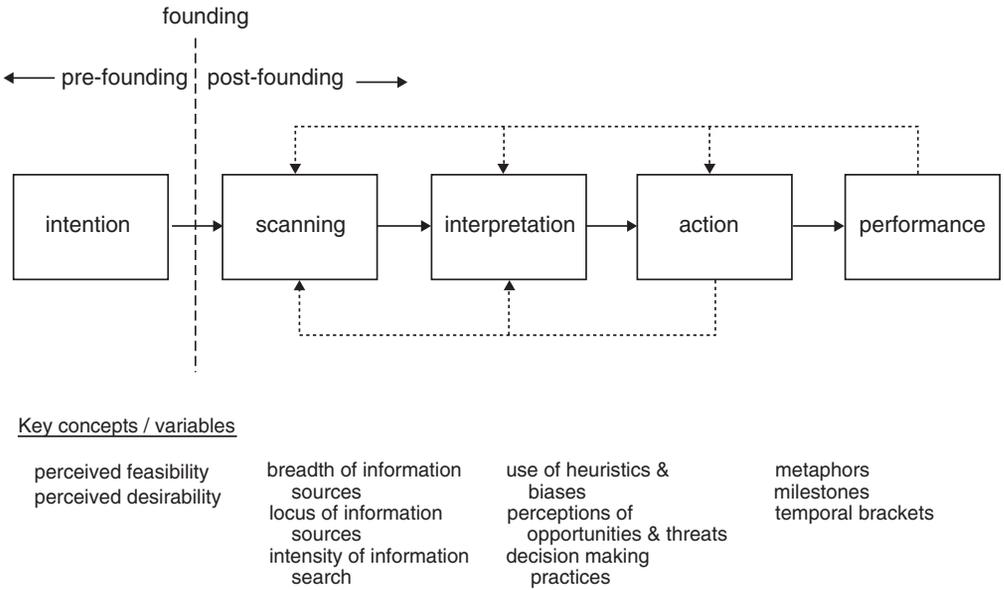
Huff (1997) presented “a current and future agenda for cognitive research in organizations”. She articulated four guidelines for future research:

1. investigate issues that link cognition to the broader agendas of organization science;
2. provide empirical evidence, *including direct reports from practice to ground further theoretic development* (my emphasis);
3. design studies that use larger samples, longitudinal observations and otherwise expand the scope and generalizability of cognitive insights;
4. study cognition as *an emergent phenomenon, interactively linked to experience* (my emphasis).

The two of Huff's guidelines I have emphasized point strongly to the future utility of qualitative methods for the field. While the synthesizing work of Walsh, Hodgkinson, and Huff provides vital *background* to the entrepreneurial cognition field, Daniel Forbes (1999) highlighted the foreground with a specific and detailed review of cognitive

Figure 2

Salient Features of the Entrepreneurial Cognition Canon



Source: (Forbes, 1999)

approaches to new venture creation. He reviewed, dissected and arranged 34 studies, which may be regarded as the “entrepreneurial cognition canon” to 1999. His classification mechanism made good use of an organizational sense-making model whose three prime components are scanning, interpreting and action. This sense-making model has its most direct pedigree with respect to three articles (Daft & Weick, 1984; Milliken, 1990; Thomas, Clark, & Gioia, 1993) but the common ancestor of most variants of sense-making models in the organization literature is the seminal book by Weick (1979).

Forbes’ Canonical Issues Distillation

Forbes’ synthesis of the 34-work “canon” resulted in a summarizing chart reproduced as Figure 2.

Employing a sense-making perspective permits observation of the salient features of the emerging field of entrepreneurial cognition. The importance of temporality is represented by a “timeline dichotomy”: pre-founding and postfounding. In the pre-founding stage, the emphasis is on organizational *intentions* represented by two key concepts: perceived feasibility and perceived desirability. Barbara Bird (1988) defined the nature of entrepreneurial intentions.

Intentionality is a state of mind directing a person’s attention (and therefore experience and action) toward a specific object (goal) or a path in order to achieve some-

thing (means). . . . Research . . . shows that a person's intentions sustain value or effort despite interruption. . . . Entrepreneurial intentions are aimed at either creating a new venture or creating new values in existing ventures.¹

In Forbes' synthesis of the postfounding stage, an organizational sense-making framework proceeds from *scanning* (where the conceptual emphasis is upon aspects of information sources), through *interpretation* (where the conceptual emphasis is upon the uses of heuristics and biases, perceptions of opportunities and threats and decision-making practices) through to *action*. The action phase places conceptual emphasis upon metaphors, milestones and temporal brackets. The final result is performance. In the following section of this article, I will argue that Forbes' synthesis of the canonical issues of the discipline, represented in Figure 2, can inform the development of a comprehensive conceptual framework for choosing and using qualitative methods in the developing field.

For post-1999 development of the field, the three best overview sources (at time of writing, March 2004) are:

- The 2002 special issue of *Entrepreneurship Theory & Practice* (see Mitchell, Busenitz et al., 2002);
- Norris Krueger's overview (2003) in Acs and Audretsch's *Handbook of Entrepreneurship Research* (2003);
- and Katz and Shepherd's (2003) introduction to JAI Volume 6. These later works, though not referencing Forbes's masterly review, reinforce the generality, parsimony, and utility of his canonical synthesis of the field.

Matching Promising Methods to Canonical Issues

A Canonical Development Framework for Choosing Qualitative Research Methods

Figure 3, below, is a map of the key relationships involved in taking a canonical approach, as I have defined it, to the choice of qualitative methods for conducting a research study, project or program.

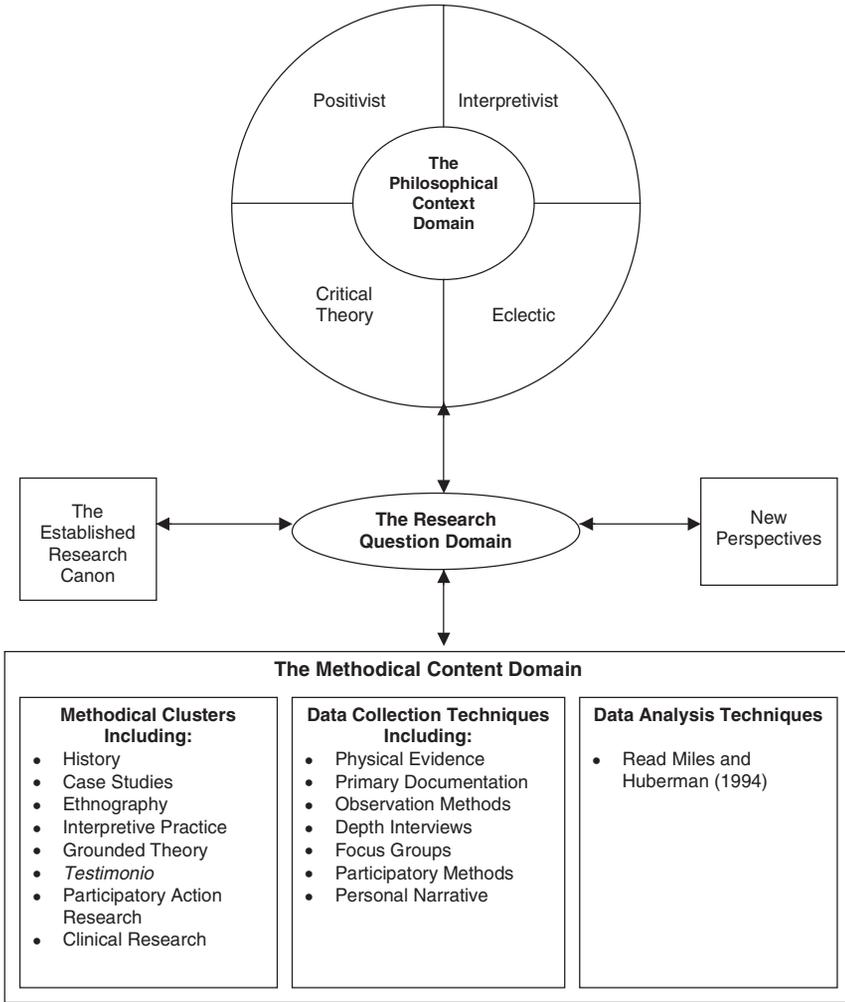
The framework may be thought of as a map that plots three principle territories: a philosophical context domain, the research question domain (influenced by a combination of the existing research canon and new influences) and a methodical content domain. The contact between the territories is reciprocal and iterative. This is represented by bidirectional arrowheads on the lines connecting the three domains. All three territories exert mutual influence. At this stage of the argument, my principal focus will be upon the methodical content domain, but it cannot be considered in isolation and is not intrinsically the most important of the three domains.

Both philosophical context (in the form of a research paradigm subscribed to by an author) and research methods (mechanical techniques adopted for treatment of the problem) are means to an end, not ends in themselves. *The research question domain* has centrality and primacy and is the heart of the matter. In Figure 3, it is vertically located

1. During more than a decade of committed scholarship, Norris Krueger has presented the most prominent and sustained body of work in the subfield of entrepreneurial intentions (Krueger Jr., 2003; Krueger, 1993, Krueger & Dickson, 1994, Krueger, 2000; Krueger & Brazeal, 1994; Krueger & Carsrud, 1993; Krueger & Dickson, 1993; Krueger, Reilly, & Carsrud, 2000; Shepherd & Krueger, 2002). His most direct antecedents were Shapero (1982) and Bird (1988) Contemporary empirical work in the subfield includes that of the Norwegian scholar, Lars Kolvereid (1996) and British researchers Jenkins and Johnson (1997).

Figure 3

A Canonical Development Framework for Choosing Qualitative Research Methods



between depictions of philosophical context and methodical content. It is horizontally located between the influence of the existing canon (summarized, in the entrepreneurial cognition case, by Forbes’ distillation of the key issues) and the potential of new knowledge (that is, knowledge, insights and methods that have so far not been employed in developing the field). In employing a canonical approach, it is important to stress the distinction between “influence” and “restriction.” In structured scholarship, the development of a research question domain and specific formulation of focused problems for investigation are strongly *influenced* by the existing canon of works. We want to build upwards from the existing knowledge base. But we also want to expand outward by extending the foundations of knowledge. In our case, using Forbes’s canonical summary of the field (Figure 2, above), most foreseeable future research questions appear likely to be con-

cerned with one or more of the “big five” entrepreneurial cognition issues: intentions, scanning, interpretation, action and performance. This is not to say that the established canon should, ideally, either determine or restrict new questions asked in the field. As discussed in the opening section, the most obvious illustration of the difference between influence and restriction is also the most common one: where a researcher detects a gap in existing knowledge and determines to fill it with a pioneering study. Methodological expansion usually begins through application of new techniques to existing issues. The simultaneous combination of new methods to new issues is unusual but not impossible. In all these ways, a canonical *development* approach is seen to involve openness to new insights: not mere adherence to inflexible writ, which many people associate with the use of the term “canon.” A canonical development approach thus implies and demands that both readers and writers in the field are characterized by breadth of mind, tolerance and a pragmatism that allows for matching variety in both philosophy and execution to suit variety in the nature of problems encountered. And so we progress to the other domains within the canonical development framework depicted in Figure 3.

At the level of the *philosophical context domain*, methodical choice emanates from the hub of a wheel. The wheel is sectioned, for simplicity, into Neuman’s (2000) three-category distinction of generic research paradigms (positivist, interpretivist and critical theory) plus allowance for the possibility of a hybrid/eclectic stance. As elaborated in the opening section of this article, the onus upon a researcher is to inform the reader, succinctly and clearly, about the key ingredients of philosophical stance that have influenced his or her approach to the problem and choice of methods. The circularity in the diagram is designed to symbolize a desirable degree of ability to turn from one perspective to another depending upon the nature of the question being addressed. Lee (1991) has argued convincingly that each perspective can add a meaningful layer to our understanding without necessarily contradicting the others.

Finally, within the *methodical content domain*, three classifications are distinguished and associated in stylized, linear relationship.

First, I use the term *methodical clusters* to indicate the existence of aggregate *sets* of methods, which have provenance in research parlance and utility as labels describing reasonably distinct forms of broad strategic approach to the conduct of inquiry. The diagram lists eight method clusters. They form a list that has strong provenance in methodological discussion. Concerning the methodological and purposive nature of history, I provide several references because it is the only one of the eight clusters that I have space to address in any depth. For each of the other seven clusters I provide first, the most recent treatment by authors operating within Denzin and Lincoln’s (2003c) compendium—the most recent available authoritative citation. Any subsequent citations are works that I regard as having special value to anybody who may be unfamiliar with the subject matter. The eight methodical clusters are:

- History (Carr, 1964; Collingwood, 1966; Elton, 1984; Holborn, 1972; Kracauer, 1969; Laqueur & Mosse, 1967; Plumb, 1973; Powicke, 1955).
- Case Studies (Eisenhardt, 1989; Stake, 2003; Yin, 2002; Yin, 2003)
- Ethnography (Anger, 1995; Tedlock, 2003)
- Interpretive Practice (Gubrium & Holstein, 2003)
- Grounded Theory (Charmaz, 2003; Glaser, 1992, 1994; Glaser & Strauss, 1967; Strauss & Corbin, 1998)
- *Testimonio* (Beverley, 2003)
- Participatory Action Research (Kemmis & McTaggart, 2003; Whyte, 1989, 1991)
- Clinical Research (Miller & Crabtree, 2003)

What is it that constitutes a “methodical cluster”?

As an example, grounded theory—GT—is a methods cluster, in my view, because it involves a *network of associated methods*. GT includes data collection and generation methods (including but not limited to field observation, depth interviewing, focus groups, projective techniques, field note production et cetera). It also embraces data analysis techniques (including but not limited to content analysis, the constant comparative method, perceptual mapping, computer assisted codification et cetera). Within the grounded theory methodical cluster, various methods of data capture and analysis all become associated by commitment to a generic logic of inquiry (crudely, the belief that theories should be built from the ground up, based on deep understanding of lived experience in particular settings and systematically explored in great detail to produce deep insights with explanatory power).

Unfortunately, in a taxonomic sense, the boundaries between methodical clusters can never be distinct enough to be mutually exclusive. First, they never stand still and are prone to splits—nicely illustrated by the fact that objectivist and constructionist grounded theory are, arguably, now regarded by many researchers as separate clusters (see Charmaz, 2003). Second, different clusters often share similar ingredients at the sublevels of data collection and data analysis. For instance, at the level of what might be called “practical mechanics,” content analysis techniques, as tools of analysis, belong in multiple clusters. Case researchers, ethnographers, historians, and participatory action researchers can all make use of content analysis methods but in slightly different logic-of-inquiry contexts. Finally, clusters interact: consider ethnography and history. At the higher level, pertaining to logic of inquiry, we can initially be comfortable about distinguishing ethnography from history as a methodological cluster. Ethnography (Aunger, 1995) with its strong anthropological roots in the study of “exotic” cultures based on field observation seems sufficiently distinct from history, which is the attempt to reconstruct rationality (Collingwood, 1966) through a narrative based on identified primary documentary sources (Carr, 1964; Elton, 1984; Holborn, 1972; Kracauer, 1969; Laqueur & Mosse, 1967; Plumb, 1973; Powicke, 1955). Yet, on another plane, we recognize considerable overlap between the disciplines and their associated research methods. Historical narrative may feature prominently at various stages of an ethnographic study. Development and explanation of cultural patterns may be vital to key aspects of an historical narrative. This illustrates the hazy relationship between the *distinction* of clusters and their *overlap*, which affects all of the broad methodical clusters listed in the box in Figure 3. All have multiple interconnections. Let us move now to the classification of methods as either collection or analysis techniques.

Under the auspices of any general methodical cluster there will be a need to select and apply specific techniques of *data collection*.² The key concept here is a combination of functionality and technical precision focused on practical execution rather than situational context. For instance, depth interviews and focus groups are mechanically distinctive techniques that can be used to gather data within any and all of the differing methodical clusters cited in the previous box of Figure 3.

2. Personally, I do not like the label “data collection techniques” when discussing qualitative research. I prefer the active plurality of “data capture and generation techniques” to the passive singularity of “data collection techniques” because it encompasses overt recognition of the qualitative researcher’s active involvement in the creation of the data set at the heart of a qualitative inquiry. However, in the context of this essay, extensive promotion of this distinction would prove more distracting than enlightening. So I will stick with the “data collection” label.

Finally, *data analysis techniques* are methods for analyzing and deriving meaning from data irrespective of the either the methodical cluster within which the technique is applied or the methods used to collect the data. For instance, content analysis (Krippendorff, 1980) may be a relevant way to analyze “texts” ranging from the blandness of “raw” newspaper headlines themselves to the complexity of hermeneutically derived texts constructed by critical theorists concerning the way that a privately owned press exploits a populace.

In Figure 3, linkages between the three elements within the methodical content domain, (just as outside it), are represented by reciprocal arrowheads. They signify that the qualitative research process always involves a “dialogue with the data” (Denzin & Lincoln, 2003c; Glaser & Strauss, 1967; Miles & Huberman, 1994; Yin, 2003). For instance, the following chain (working from right to left within the domain) illustrates the sorts of development that commonly occur during the execution of a qualitative research project. An interpretive insight might generate the perceived need to apply a fresh analytic technique, which produces the need to collect additional data, which moves the study from exclusive location in the participant observation cluster to a requirement for adding a participatory action research component. This example is indicative of the reciprocal and iterative mutualities existing between the three components of methodical content in any qualitative study.

An Exciting But Daunting Panorama of Possibilities

There is obviously a vast array of possibilities that arise when the methodical clusters listed in Figure 3, above confront the canonical issues articulated by Forbes 1999, (see Figure 2 above). There are just too many qualitative method clusters and too many canonical issues to permit detailed matching of every method cluster to every canonical issue in an article of this length. Every combinatory possibility provides potential for, at minimum, a journal article in its own right. Consider just a few of the intriguing methodological treatises and/or insightful studies that might result from answering just a few of the myriad questions inherent in the impact matrix. For instance, here are four such questions generated, literally by my pasting a copy of the matrix on the wall and throwing a dart at it. (Quantitative methodologists will explain why this is not true random generation. Participant observers familiar with my skill as a darts player will tell you why it is.)

- How can ethnographic methods enhance our knowledge of entrepreneurial intentions?
- Could a grounded theory approach be used to distinguish the environment scanning activities of entrepreneurs (as distinct from nonentrepreneurs)?
- What would be the value of writing the psychological history of an individual throughout the entire trajectory of a business from prefounding intention to its current performance level as a large corporation?
- Could it be feasible and desirable to conduct a participatory action research project chronicling, analyzing and generalizing the perceived self-efficacy of key actors in the transition from a start-up to a later stage of venture evolution?

Clearly, there are as many more questions as the reader has darts to throw. Hopefully, the arguments in this article to date have done enough to stimulate particular readers, in pursuing their own research interests, to explore qualitative options for themselves from this point. I cannot hope to canvass the vast territory of possibilities in the space remaining. Even if I could do so, it would not be desirable. Plurality of perspective, not unilat-

eral prescription is the best way to advance the interface between qualitative methods and entrepreneurial cognition.

From this point I will confine myself to three illustrations, selected from the vast array of possibilities. First I will give a very broad overview of how the canonical development approach might enliven a canonical question. Second, I provide a little illustrative detail on the potential contribution of just one of the eight methodological clusters, history. Third, I provide a little illustrative detail on the potential contribution of just one of the many qualitative data collection technique techniques: focus groups. Hopefully, these idiosyncratic illustrations will show how good matches can be made between the investigative attributes of particular qualitative methods and the investigative priorities in various areas of the emerging entrepreneurial cognition canon. The best I can hope to convey from now on is a flavor of enticement, through selective illustration and evocation. Hopefully, the research methods/canonical-issues “matches” I have quite capriciously selected for discussion will evoke in readers an alertness to many other combinatory possibilities and a willingness to try them.

Illustrating the General Process from Seminal Questions to Fruitful Methodological Possibilities

The canonical development approach can be a great help to entrepreneurial cognition researchers when they come to tackle what have come to be regarded as some of the core, generic questions of entrepreneurship research. In this section, I will try to illustrate the relationship between the previously-discussed definition of entrepreneurial cognitions (Mitchell, Busenitz et al., 2002, p. 97) and the canonical development approach with reference to a “cognition-fraught” single example of just such a question: fear of failure.

Since 1999, a comprehensive, survey-based, international research project, the *Global Entrepreneurship Monitor* (GEM) has produced, annually, a global executive report (Reynolds et al., 2004) and a series of detailed, individual reports from each participating nation (see, for example, Hindle & Rushworth, 2004). There are now 42 nations participating in GEM. In every year of the project and for every GEM country (though to varying degrees), “fear of failure” has been reported as a significant deterrent to entrepreneurial start-up activity. Thus there is substantial evidence for nominating “fear of failure” as a seminal issue for understanding start-up behavior. And it is a highly cognitive issue. The Mitchell, Busenitz et al. cognitions questions come thick and fast: What are the knowledge structures, mental models, heuristics and other modes of cognition that distinguish entrepreneurs from nonentrepreneurs in making judgments about the relative likelihood and importance of failure as an input to the evaluation of an entrepreneurial opportunity? More simply, how do entrepreneurs think differently about failure? Many GEM countries have performed such quantitative techniques as logistic regression to measure the aggregate and average impact of fear of failure, but no GEM researcher has got down to the level of individual cognition. Using the canonical development framework illustrated in Figure 3, a qualitative research approach can be built.

As just one phase of a research program and as a predicate to exploring what *groups* of people think about *potential* failure, we might investigate what *particular* people think about *actual* failure: how it impacts their minds and bodies. We might begin by asking questions such as: What, in the minds of relevant perceivers, is failure? How does it affect a person’s self-efficacy? What does it mean? Does it hurt? How do you cope with it? Using a canonical development approach to select methods for investigating the meaning

failure to different individuals in an entrepreneurial context, a researcher might turn first to the philosophical context domain (see Figure 3). He or she may, for instance, decide that an eclectic paradigm (blending elements of interpretivist social science and critical theory) provides a philosophical milieu appropriate to the investigation. Turning then, to the methodical cluster domain (see Figure 3) it may be that, to a researcher familiar with its strengths and limitations, *testimonio* exerts a strong appeal. Currently, the best succinct description of *testimonio* as a research technique, is provided by Beverly (2003).

Testimonio is by nature a demotic and heterogeneous form, so any formal definition of it is bound to be too limiting. But the following might serve provisionally: A testimonio is a novel or novella-length narrative, produced in the form of a printed text, told in the first person by the narrator who is also the real protagonist or witness of the events she or he recounts. Its unit of narration is usually a “life” or a significant life experience. . . . Testimonio is not intended . . . as a reenactment of the anthropological function of the native informant . . . it is rather a “narracion de urgencia”—an “emergency narrative”—involving a problem of repression, poverty, marginality, exploitation, or simply survival that is implicated in the act of narration itself . . . the contemporary appeal of testimonio for educated, middle-class, transnational publics is perhaps related to the importance given [since the 1960s] to oral testimony as a form of personal and/or collective catharsis . . . , testimonio is an affirmation of the authority of personal experience. . . . Beverly (2003, p. 320–321)

Exemplar *testimonio* studies have often been concerned with the victims of massive oppression and marginalization: their narrative comes directly from the heart and sears with the truth of a scream of pain. Business failure can destroy people. Failed entrepreneurial ventures have broken marriages, shattered families, created mental illness and wrecked the fortune and self-esteem of many people. Imagine for a moment the richness and potency of the testimony of such a wrecked life coming as an unfiltered cry from the heart of a person whose financial fortunes had reached their nadir. Even one such narrative could provide valuable empathy about the terrors of failure for a person previously comfortably employed. An array of such *testimonios* would be a deeply valuable addition to the inventory of cognitive insights helping us in a multifaceted quest to learn more about the fear of failure.

Later in this putative research program, we may wish to study the differences between two groups of failed entrepreneurs: those who never intended to start again and those who did. We now have a changed question impacting people at a different temporal stage: “Having failed before, do you intend to give entrepreneurship another go?” The researcher turns to the canonical development approach (Figure 3) again. This time the best mix may seem to involve a fully interpretivist paradigm allied to case research drawing its data principally from focus groups. When content analysis is performed, it is hoped that clear categories of conceptual distinction will provide an explanation of cognitive choices with respect to entrepreneurial intentions. The intentions literature will be the richer. The canon will expand.

In his recapitulation of studies that use an information processing perspective in management research, Walsh (1995, p. 282) urged scholars in the field to: uncover the content and structure of particular knowledge structures that managers might use; and

. . . relate the use of this knowledge structure to consequences of substantive organizational importance . . .

Very little is more important to organizational development than the intention to start as affected by the experience or fear of failure. We may say that, the canonical develop-

ment approach seems very well suited to explain both what entrepreneurs think about these issues (metacognitions, scripts and heuristics) and what they do *not* think (biases).

Let the general illustration of *broad, general process* cease here. Hopefully, the point is made. From the canon comes the question. From the researcher comes thoughtful consideration of a judicious blend of philosophical approach with qualitative methodical cluster and associated data collection and analysis techniques. As an invitation to the reader to investigate the detailed possibilities of particular method clusters and particular data collection techniques, I turn my selective microscope now upon history and focus groups.

Illustrating in More Detail the Potential of Just One Methodical Cluster: History

Let me expand on just one methodical cluster—history—as a proxy for my inability to expand on them all.

In the sixth essay of the collection, *Essays in the Philosophy of History*, R.G. Collingwood (1966) provides an eloquent, erudite defense of the integrity of historical research against those who think of history as “the doubtful story of successive events”. At its philosophical heart, history is fundamentally concerned with cognition. Using his famous question—Why did Caesar cross the Rubicon?—Collingwood (1966) has shown us that a truly *historical* answer will be based on the fundamental need to reconstruct rationality, with respect to both the psychological complexities of one man and the circumstantial complexities of the range of time-construed environments that impelled him (antecedent and contemporary events in the evolution of the Roman republic). With a focus on cognition, there is vast opportunity for historical research to illuminate our understanding of many phenomena within the domain of entrepreneurship. This pointedly includes core entrepreneurial cognition questions such as:

- Why do the cognitions of entrepreneurs differ from nonentrepreneurs?
- How do cognitive biases evolve and what is their effect on the full trajectory of a venture from initial entrepreneurial intent to measured venture performance at given point in time?

I shall employ examples of the variety of historical investigative methods that have been used to explore the period of the English Civil War (1642 to 1660)—a period of massive social innovation and entrepreneurship—to provide very brief indications of how a range of historical methods and tasks might produce a range of insights into the mindsets and actions of twenty-first century entrepreneurs. First, there is great scope and need in our discipline for the humble but vital task that is the bedrock of historical inquiry: the assembly and compilation of primary texts. As Gardiner (Gardiner, 1936) has done with his *Constitutional Documents of the Puritan Revolution 1625–1660*, we could do by producing collections of primary documents in various domains of the entrepreneurship discipline. For instance, it would be of immense value to assemble a collection of contemporary evaluation notes made by great venture evaluators (e.g., George Doriot and Arthur Rock) at the time they decided to invest in the nascent potential of great firms (e.g., Digital Equipment Corporation and Apple Computer). What were they thinking? Let the primary sources tell us.

Second, there is scope for what might be called the grand-scale, intensive biography. As Antonia Fraser has done with her psychologically rich *Cromwell: Our Chief of Men* (1975) so might an entrepreneurial historian do with the life of a great serial entrepreneur. I am not talking here about the slick and self-aggrandizing popular biographies of

business leaders that lamentably festoon the display racks of newspaper stands. I am talking about meticulous, critical, professional, eloquent history concerning figures of demonstrable historical provenance. Wallerstein (cited in Auger, 1995, p. 97) argued:

History is the study of, the explanation of, the particular as it really happened in the past. Social science is the statement of the universal set of rules by which human/social behavior is explained.

This is the famous distinction between idiographic and nomothetic modes of analysis, which are considered to be antithetical. . . . Though undertaken separately, differently and for dissimilar (even opposing) purposes, it would be fruitful for the world of scholarship to combine the two modes.

Just as Lawrence Stone (1967) brought descriptive and inferential statistics to the study of the economic history of the English Civil War, it is time for someone to start bringing a professional craft of history to the study of entrepreneurship. A similar case could be made for the methodological relevance to entrepreneurial cognition of each of the remaining seven methodical clusters cited in Figure 3.

Illustrating the Potential of Just One Data Collection Technique: Focus Groups

I have chosen to single out focus groups for illustrative attention as a germane qualitative data collection method for two reasons. First, the selection is in tribute to Robert Merton, the founder of modern focus group research, who died in 2003. Second, focus groups are no “new thing”: they have been with us since 1946. So, the lack of use of such a well-established technique provides a good measure of just how reticent entrepreneurship research is in its application of qualitative methods. An excellent recent article providing a succinct but comprehensive overview of focus groups as a research method is Gibbs (2003). She makes the point that:

Focus groups are under-used in social research, although they have a long history in market research (Morgan, 1988), and more recently in medical research (Powell, Single, & Lloyd, 1996).

This under-use is pronounced with respect to entrepreneurship. A search of *Frontiers of Entrepreneurship Research* (the published research proceedings of the annual Babson-Kauffman conferences devoted to pioneering scholarship in the discipline) for the past 15 years (1988 to 2002 inclusive) revealed only one study where focus groups could be deemed to constitute the principle data collection technique (Gillin & Hindle, 1988). Powell et al. (1996) define a focus group as:

. . . a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research.

The contribution that focus groups can make to social research result from attributes including organized discussion (Kitzinger, 1994); collective activity, (Powell & Single, 1996; Powell et al., 1996) social events (Goss & Leinbach, 1996) and interaction (Kitzinger, 1995). Indeed interaction among respondents is the most salient feature of the method. In group interviewing (interviewing a number of people at the same time) the emphasis remains upon questions and responses between the researcher and participants. Focus groups, however, rely on interaction *within* the group based on topics that are supplied by the researcher (Morgan, 1997).

Hence the key characteristic which distinguishes focus groups is the insight and data produced by the interaction between participants (Gibbs, 2003).

Readers will not require extensive elaboration by me of the obvious benefits that might accrue from a research design that brought select groups of entrepreneurs together, in mutual conclave, under the auspices of a skilled moderator, to talk about their attitudes and experiences concerning part or all of the core issues of the entrepreneurial cognition canon: intention, scanning, interpretation, action and performance (Forbes, 1999). To use focus groups constructively, researchers need only give specific application to the three key principles laid down in Merton and Kendall's (1946) seminal article on the focused interview:

- ensure that participants have a specific experience of or opinion about the topic under investigation (chose proven entrepreneurs);
- ensure that an explicit interview guide is used (use issues developed from the canon);
- ensure that the subjective experiences of participants are explored in relation to predetermined research questions (this requires a high level of moderating skills to avoid time wasted on peripheral discussion without distorting genuine and germane input and interaction).

Why do we not employ such an outstandingly relevant technique? Irrespective of the methodical cluster under which the method is employed or the analysis regimes used to interpret the resultant data, it is uncontroversial that focus groups offer productive potential for the gathering of rich and germane data. See, for example, Gillin and Hindle (1988). It is amazing that the method has been so underemployed.

Moving from the particular to the general, I leave it to readers themselves to expound and explore applications of the expanding repertoire of qualitative data collection techniques to the expanding field of entrepreneurial cognition. By analogy with the focus group example and with reference to canonical issues, it is my belief that *all* established techniques of qualitative data collection could be employed as productive tools of entrepreneurial cognition research. Hoping that the single example may be a stimulus to diverse developments, I look forward to the day when methodologists will start producing detailed, specialist treatments of the way in which particular qualitative data collection methods can be applied to particular canonical issues in the entrepreneurial cognition field and, beyond it, in all domains of the entrepreneurship discipline.

Illustrating the Potential of Nearly Every Data Analysis Technique: Miles and Huberman

I do not have to perform the task of singling out an exemplary analytical method because exposition of a vast array of qualitative data analysis techniques is readily available to all readers. There is a great book exclusively dedicated to the topic. In the opinion of distinguished reviewers including Harry F. Wolcott, Norman K. Denzin, H. Russell Bernard, Pamela J. Brink and Joseph Maxwell (see liner notes to Miles and Huberman 1994), the best sourcebook for techniques of qualitative data analysis is Miles and Huberman (1994 second edition). Brink summarizes:

Miles and Huberman have exceeded themselves! They have provided us with the most comprehensive examination of the issues involved in qualitative data analysis that transcends the philosophical methodological differences in design. (Brink, in Miles & Huberman, 1994, p. 340)

Here, I merely echo these sentiments and urge all entrepreneurial cognition researchers not already familiar with this seminal work to become so.

Discussion

Summary of the Argument

In this essay I have tried to minimize, without avoiding, the thorny contextual, “paradigm positioning” issues of qualitative methods: issues of axiology, epistemology, logic-of-inquiry and ontology. With the exception of a very brief discussion of focus groups as a data collection technique, I have avoided altogether the *how* of qualitative methods because this is properly the domain of textbooks and handbooks. I have focused on *where* the discipline of entrepreneurial cognition is going as a guide to *what* general approach can most fruitfully be applied to its development. This produced an articulation of a canonical development perspective resulting in a structured, manageable approach to the complex problem of how to choose, from the vast arsenal of loosely labeled “qualitative methods,” sets of techniques appropriate to advancement of the emerging field of entrepreneurial cognition. The approach, graphically depicted in Figure 3, is able to accommodate due regard for methodological controversies without being overwhelmed by them. Three illustrative examples attempted to indicate how use of the approach can create productive matches between questions derived from the entrepreneurial cognition canon and focused selection from the complex array of qualitative methods’ clusters, collection techniques, and analysis techniques.

Grounds for Cautious Hope

It is time to consider whether any of the specific suggestions or general evocations contained in this article is likely to be adopted by hard-working, practical entrepreneurial cognition researchers in the future. How likely is it that a higher volume and proportion of qualitative research will occur in the entrepreneurial cognition field as a result of this article? Will an inevitably conservative prognosis be indicated?

In the latest, three-volume edition of Denzin and Lincoln’s *Strategies of Qualitative Inquiry* (2003c), Kathy Charmaz concludes her argument about the future of a specific (constructivist) variant of a specific set of qualitative methods (grounded theory).

The future of grounded theory lies with both objectivist and constructivist visions. Scientific institutions and conventions are unlikely to undergo rapid change. Granting agencies and tenure review committees may long favor objectivist work over constructivist craft. The qualitative revolution has opened up possibilities and potentials, but gatekeepers are likely to reward scholars whose work comes closest to their own. Thus, we can expect to see growing numbers of large studies with small qualitative components and more team projects in multiple sites. Does this mean that constructivist grounded theory will wither and wane? No. The trend toward interpretive study, the quest for understanding, and the challenge to the imagination impel us to take our inquiry into the world. Through sharing the worlds of our subjects, we come to summon an image of their constructions and our own. (Charmaz, 2003, p. 281)

From the point of view of an advocate of the use of qualitative methods in our field of entrepreneurship, I regard Charmaz as lucky. In her areas of sociology and professional writing, qualitative methods are established so strongly that it is possible to fight

battles of epistemological detail *within* the boundaries of specific methodical clusters. Entrepreneurship as a discipline and entrepreneurial cognition as a subdiscipline are a long way from being able to debate internal nuances of particular qualitative methods. Both our fields, parent and child, are still at the primitive stage of pondering whether, in general, qualitative methods are acceptable. As the introductory section to this article articulated, the entrepreneurship discipline still possesses, within our mainstream discourse, a demonstrable problem concerning acceptability and praxis *between* quantitative and qualitative methods.

Perhaps the best policy for those who would like to see more qualitative work pervade the field is to create in our own minds conditions that invite and support interested scholars to try some of the new combinations whose possibilities have been outlined in this essay.

Conclusion: How Not To Know What Isn't So

In a wonderfully stimulating book entitled *How We Know What Isn't So: The Fallacy of Human Reason in Everyday Life*, Gilovich (1991) shows us how and why people:

believe [that] something is systematic, ordered and "real," when it is really random, chaotic and illusory. (Gilovich, 1991, p. 21)

There could be no better summary of the simultaneous, yin-yang partnership of risk and challenge embedded in the use of qualitative methods to advance any research field. The challenge is to provide a richness and depth of insight that is beyond the aggregative and averaging philosophy that is at the heart of the general linear model, quantitative methodology and naïve subscription to the positivist paradigm. The risk is self-delusion.

People are extraordinarily good at ad hoc explanation . . . to live, it seems, is to explain, justify, and to find coherence among diverse outcomes, characteristics and causes. (Gilovich, 1991, p. 21).

Despite the high degree of vulnerability entailed in the use of qualitative methods, it is well past time that entrepreneurship embraced them. And it is totally appropriate that the subdomain most concerned with the vulnerabilities of human rationality—the field of entrepreneurial cognition—should lead the way. I believe that a sensitive, question-specific application of the canonical development approach to qualitative methodology presented in this article can lower the risks and rise to the challenges presented by the emergence of a new field.

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