The Long March: A Novice Researcher's Journey of Discovery Through the Research Methodological and Philosophical Maze and Haze

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Abstract: In this paper we present the experiences of a novice researcher attempting to develop a sound understanding of the philosophical and methodological underpinnings of the Information Systems (IS) research landscape, highlighting the many challenges that must be confronted. We note the widespread nature of the problem and the significant economic and productivity impacts that must necessarily arise from this situation, thus promoting the importance of raising the issue. Following a pragmatic approach, we examine the key areas of confusion especially the definitional, and demonstrate the lack of an accumulated, articulated understanding and the resultant frustration that is the inevitable legacy of such a situation. Our objective is fourfold: to explicitly expose the extent of the confusion regarding terms and understandings of the major building blocks of the IS research landscape; to convey (or remind) senior researchers and dissertation advisors the cost to novices of this confusion; to provide novices with some reassurance and a path upon which they may build an understanding; and a call for action to advance the further clarification and development of the IS methodological base, and thus enhance the IS research effort.

Keywords: Research methodology, philosophy, paradigm, theory, student experience

1. Introduction

The title of this paper is a metaphor that charts our experiences as an IS research student and dissertation advisor coming to terms with the underlying research methodology and philosophical issues. The long march represents the arduous undertaking that true proficiency in methodological matters demands. Maze represents the many possible paths and dead-ends encountered. Haze represents the ever-present overlay of confusion and frustration that accompanied the journey. Sections of text in the first person are specific to the lead author's experience as a research student. The rest of the material describes the experiences of both authors as student and dissertation advisor respectively.

For reasons of necessity, coming to terms with matters methodological is one of the first challenges to face all new IS researchers, and most will be required to undertake course work to assist in achieving that objective. Early in my experience in a research methodology tutorial, I was confronted with questions such as ‘…which paradigm are you most closely aligned with and why? It is important that you understand your research philosophy.’ It was a very important question that I could not answer to my satisfaction then, and am only now beginning to be able to do so, some years of persistent labour later. Judging from the looks on the faces of my fellow students, and subsequent discussions with many other researchers in the IS discipline, I am convinced that my experience is far from extraordinary. The importance lies in the core role that research philosophy plays in choosing an appropriate path to follow in the dissertation, and as such it is an inherent part of being a properly rounded researcher.

There is also an economic imperative underlying this situation, as the opportunity cost of such confusion is significant in terms of lost research output. The mystique of research should be saved for the actual topic under investigation, rather than the research techniques, which are merely the toolset. Furthermore, there is the flow-on effect of a greater likelihood of less relevant research arising from less well-equipped researchers. Both of these impacts lessen the beneficial outcomes for the ultimate stakeholder, namely society at large.

This journey commenced when as a research student I was motivated by a personal desire to uncover the truth, and better understand the theoretical and philosophical underpinnings, as well as to search for an identity or research methodology personality, that is ‘know thyself’
(the words of the Seven Wise Men of Greece atop the temple of Apollo at Delphi) (Benham 1924). Hence we believe the paper’s contribution is threefold: to reassure and guide novice research students in their understanding of the environment; to provide dissertation advisors with a useful reference for research students; and to bring these significant problems to the attention of the academic community in the hope that there be positive action. Hence, our objective in this paper is to expose the difficulty and confusion by exploring the IS research landscape, guided by the literature and our own experiences.

While it would be easy to counter that it is a dissertation advisor’s role to liberate students from this confusion, the reality is that it is an exhausting process (and an unproductively distracting one) to accumulate the necessary range of material and perspectives. While for some novice researchers, this may be a straightforward process because they find their space with either minimal interest or decision-making dilemma, anecdotal evidence suggests that many others are overwhelmed in their early forays into matters methodological, and abandon the journey in favour of what seems most convenient, or follow their dissertation advisor’s prescription. When considering the paradigm debate, Fitzgerald and Howcroft (1998) state that the essence of the problem is that researchers do not choose an approach appropriate to their research question, rather that they ‘inherit unquestioningly their research methods from those dominant in the institution or region they happen to inhabit’.

One of the struggles when exploring this very broad landscape is that it is almost impossible to avoid becoming overwhelmed by the amount of material and its very abstract nature. This is exacerbated by a lack of exemplars to assist with understanding. An equally daunting aspect is that throughout the journey, one is often drawn into the philosophical origins, a large and conceptually complex area of study in itself. There is scant material that synthesizes these two related areas, especially in the IS context. As Fitzgerald and Howcroft (1998) comment when discussing matters philosophical, ‘few IS academics are competently knowledgeable’. The main focus for novice researchers should be to learn how to conduct good research, and the process to become effectively equipped to do so should be as expeditious as possible. It should not reflect one of the ills of the IS discipline itself where the process overshadows the research content (Benbasat & Zmud 1999). It is important to note that the reform argued for in this paper should not infringe on academic freedom, rather that it should provide firm foundations upon which the discipline may grow and prosper. The result would be that future generations of research students will have a shorter path with less obstacles and less confusion, and thus be better equipped and more productive.

While the context here is IS, we believe that the main issues raised are relevant to many other disciplines. This is evidenced for example in the education discipline by the experiences of Plantanida, Tananis and Grubs (2004) with their plea for foundational guidance.

There is a compelling argument that for researchers to do their job well, they must have a solid understanding of the full range of options within the enabling toolset that is available. In my experience, the lack of IS-specific materials developed for use by research students seriously compromised that ideal. For instance, the concepts and mechanics of theory were explained by a fragmented array of examples from unrelated disciplines such as the hard sciences. Furthermore we are concerned that the current environment may foster the dangerous notion that research students should experience such confusion and frustration as a rite of passage to academia. Inscrutability in senior academic ranks often leaves novices floundering when seeking a straight answer. At best this situation represents indifference, at worst perpetuation of a dysfunctional situation. Anecdotal evidence abounds regarding novice researchers’ requests for exemplars, further information, or clarification of issues, being ignored or having the tough question skipped by prominent academics. This relationship is one of unequal power, and thus puts the novice at a significant disadvantage in terms of the ability to challenge or pursue their agenda. There is also a regrettable tendency by academics to not publicly acknowledge when they do not have the answers, and this adds greatly to the frustration. Some of the special qualities of academia such as shared traditions regarding knowledge and the fostering of it within the community ought to largely preclude these sorts of problems. It is widely acknowledged that unresolved issues that are debated in the highest echelons of the academic discipline such as the need for a theoretical core and acceptable guidelines for research methods, and a lack of research relevance greatly damage the future
prospects of our discipline. Hence this is just another of those issues that contributes to the so-called IS crisis (Benbasat & Zmud 2003; Straub 2004).

Space constraints dictate that the debate of this issue is somewhat limited in detail here. The examples cited herein are far from exhaustive, the intent being to provide indicators to the problem.

The paper is structured as follows. First there is a brief description of the approach. This is followed by an examination of some of the fundamental terms in the research landscape. The following section examines important aspects of confusion over key research methodology, underlying philosophical paradigms and research methods. The paper finishes with recommendations and concluding comments.

2. Approach

This paper is inspired by Webster and Watson’s (2002) notion of a literature review, especially in terms of the motivation, contribution, concept-centric nature and appeal to the views of respected academics. This is relevant here as the literature review forms the most significant source of evidence. This reflection appeals to the pragmatist philosophical paradigm, which acknowledges the 'inseparable link between human knowing and human knowledge' and 'concrete consequences' (Goldkuhl 2004). Such sentiment is consistent with the intent of this paper which is also concerned that 'Research should be part in changing the world, not just a disinterested observer standing aside' (Goldkuhl 2004).

An interesting observation about this paper is that it reflects some of its own themes: given the lack of standard definitions it may be classed as a case study, a phenomenology or an experience report. Equally, the underlying philosophical paradigm may appeal to elements from critical theory, interpretivism or pragmatism. In the case of the latter, Myers (2004) states 'There is considerable disagreement as to whether these research "paradigms" or underlying epistemologies are necessarily opposed or can be accommodated within the one study'. This paper reflects the so-called 'Socratic method' wherein 'the teacher truly understands the pupil's difficulties and prompts him (her) step by step in the right direction' (Magee 2001, p. 368).

The process I followed in searching for appropriate references for this paper was one that reflects the maze. There were innumerable potential paths, many of which led to dead-ends in terms of finding adequate explanation. As there is no consolidated knowledge base it became a case of following any apparently promising path, mostly through references within papers or by author.

3. The maze: Defining some fundamental concepts

We start the analysis of the problem by examining and defining some of the key phenomena that underpin the research landscape. These terms tend to be complex, and the search for a clear understanding results in following many disparate paths (many to a dead-end) within the maze. Most of these terms revolve around theoretical and philosophical matters. They are significant because researchers must have a sound understanding of them due to the fundamental role they play in research.

Theory is a concept that all research students should have a sound understanding of both in a conceptual as well as a practical sense. For this to happen, there must be exemplars available to demonstrate to students how theories were initially established, and how they have been subsequently applied, tested and refined. What do we mean by the term theory? In establishing a meaning, it is useful to appeal to several sources of wisdom, viz. the philosophical community whose domain forms the bedrock of such phenomena; a research methodology textbook; and a prominent IS academic.
Popper’s (1959) definition of ... ‘Theories are nets cast to catch what we call "the world"; to rationalize, to explain and to master it’ is somewhat abstract and metaphoric and is complemented by the more formal definition ... ‘a coherent set of general propositions used to explain the apparent relationships among certain observed phenomena. Theories allow generalizations beyond individual facts or situations.’ Theory serves two main purposes of explaining phenomena, viz. prediction and understanding (Zikmund 2003, p. 41). This is further affirmed from within the IS community by Gregor (2002a) who states, ‘In general, theory answers a human need to make sense of the world and to accumulate a body of knowledge that will aid in understanding, explaining, and predicting the things we see around us, as well as providing a basis for action in the real world’.

The relative youth of the IS field means that it has less of a theoretical basis upon which to draw (Webster & Watson 2002). This makes it difficult to point to exemplars that provide novice researchers with a better understanding of the mechanics of theory. Furthermore, the interdisciplinary nature of IS makes the process more challenging as theories tend to be drawn from a range of so-called referent disciplines (Webster & Watson 2002). In his role as editor of MIS Quarterly, Weber (2003) took a lead in debating many of the more contentious issues relating to the development and use of theory in the IS discipline, including a broad interpretation of what constitutes theory and an inclusive approach to meta-theoretical assumptions. Not only is it important to explicate our understanding of what constitutes theory in the current domain, but to also consider that there are varied accepted taxonomies of theory such as that proposed by Gregor (2002b). Our experience suggests that IS students are expected to have a better understanding than is reasonable given the current resources available within the discipline.

Theory may be considered from two perspectives, namely deductive or inductive reasoning. Deductive reasoning ‘is the logical process of deriving a conclusion about a specific instance based on a known general premise or something known to be true’ (Zikmund 2003, pp. 46-7). In the vein of Aristotle (Magee 2001), for example, we know that all researchers are humans (general statement). If we know that Fred is a researcher, then we can deduce that Fred (specific instance) is a human. Hence, theories may be tested deductively by moving from a general statement (the abstract conceptual level) to test a specific claim. Inductive reasoning is ‘the logical process of establishing a general proposition on the basis of observation of particular facts’ (Zikmund 2003, p. 47). For example, all researchers that have ever been observed are humans (specific instances); therefore all researchers are humans (general statement). Hence, theories may be developed (built) inductively through the occurrence of patterns that are noted, that is induced from empirical observations (the specific, empirical level) to a more general situation (Zikmund 2003, p. 47). Popper’s (1959) concept of falsifiability is an important related concept. He took the stand that it was impossible to have positive proof of a theory, instead stating that a theory held until a disproving instance occurred.

So how did the issue of theoretical considerations contribute to the maze? The problem stems from the fact that research students are given high expectations and taught purist forms of what theory is, and how it should work. However when it comes to doing it, there is a serious dearth of both discipline-specific exemplars to demonstrate the desired outcome; as well as detailed, workable instructions to demonstrate how it is done. As the ‘epistemorphs’ lament, the materials ‘often provide minimal insight into the process by which the theory was generated’ (Piantanida, Tananis & Grubs 2004). When discussing the issue of theory, Gregor (2002b) also acknowledges that ‘there is surprisingly little discussion in IS forums of what constitutes theory in our discipline and what form contributions to knowledge can take’. She lists works by prominent academics which are found wanting in this aspect. Another prominent IS academic, Weber (2003) states ‘What is a theory? It is notoriously difficult to answer this question’.

Understanding what is meant by ontology can also be a challenge for research students, due in part to the abstract nature of the concept, but exacerbated by the range of definitions, and the fact that it varies according to the underlying philosophic paradigm. The Oxford dictionary defines ontology as a ‘branch of metaphysics dealing with the nature of being’ (1982). Ontology is about ‘what is the form and nature of reality and, therefore what is there that can
be known about it?’ (Guba & Lincoln 1994, p. 108). Ontology answers the question: what is out there (Göktürk n.d.)? It is about the discovery of truth and reality: how do we know that we know something? Positivism (which originates in the physical sciences), posits that there is a straightforward, single, measurable reality or absolute truth. The investigator and the reality are independent (Guba & Lincoln 1994). From an interpretative (Creswell uses the term qualitative) stance, ontology is about the nature of reality, and that reality is constructed by individuals (each person has their own perception of what is real). Hence multiple realities exist to represent each of the individuals being researched, the researcher’s and the readers’ own interpretations (Creswell 1998, p. 76).

Defining epistemology is subject to the same problems as ontology. The Oxford dictionary defines it as ‘theory of the method or grounds of knowledge’ (1982). ‘Epistemology refers to the assumptions about knowledge and how it can be obtained’ (Myers 2004), that is what is considered to be knowledge? (Sweeptson 1995). Epistemology attempts ‘to answer the basic question: what distinguishes true (adequate) knowledge from false (inadequate) knowledge?’ (Göktürk n.d.). According to Guba and Lincoln (1994, p. 108), the epistemological question is ‘what is the nature of the relationship between the knower or would be knower and what can be known?’ In other words, it is about the level of researcher objectivity and the relationship between the researcher and the phenomenon being studied. The distance of the researcher from the phenomenon being researched or objectivity moves along a continuum. At one end is the positivist paradigm, where researchers believe they are totally objective and have no influence on the phenomenon they are researching (Myers 2004). Toward the middle is the post-positivist (critical realist) paradigm, where the observer has some level of interaction with the researched phenomenon which will influence the research, but where there is an attempt to maintain some though not total objectivity (Guba & Lincoln 1994). Toward the other end is the interpretive paradigm where individuals create their own meanings about the world, that is it is socially constructed (Myers 2004).

It is interesting to note that Guba and Lincoln (1994, pp. 109-10) state that the ontology and epistemology of critical theory and constructivism are inextricably linked and thus treat them (ontology and epistemology) as one criterion. The interrelationship between ontology and epistemology is also mentioned by Göktürk (n.d.).

The search for a clear understanding of the term paradigm is also troublesome. Kuhn defined paradigm as ‘a framework of beliefs, values, orientations and techniques shared by the members of a specific professional community. People whose research is based on a shared paradigm are committed to the same rules and standards for generating knowledge’ (1962, p. 11). Kuhn’s (1962) seminal work also encompassed the notion of ‘paradigm shifts’ which occur when there is a significant shift in knowledge that challenges and abandons what has gone before, rather than simply always adding to the existing knowledge base. Despite Kuhn’s early work, later use of the term in the research context has been problematic as described in the following section.

4. The haze: One researcher’s paradigm is another’s underlying philosophy is another’s method!

One of the central problems encountered by researchers relates to the highly varied usage of research terminology. This problem is almost inescapable for researchers, as we must reference our understanding of these matters as an integral part of our research. The problem is exacerbated by the fact that much of the substance of confusion is important material, which should be clearly understood by us.

In the abstract of a paper proposing principles for interpretive field studies, Klein and Myers (1999) use the terms ‘interpretive research’, ‘interpretive field studies’ and ‘interpretive field research’ apparently interchangeably. This may appear to infer that all interpretive research is field studies. Furthermore, when discussing the past development of case study guidelines from a positivist perspective, Klein and Myers (1999, p. 68) state that they will do the same for interpretive field research from ‘the philosophical perspective of hermeneutics’. This is most confusing considering that in another source, Myers (2004) refers to interpretive research as an underlying research epistemology along with positivism and critical. Hence, on one hand it...
is treated as a method (such as case study), and on another as an underlying research epistemology (such as positivism). Another example of this confusion is when discussing research approaches, Williams (2004, pp. 6-7) describes choosing among interpretive and critical-communicative (usually considered underlying philosophical paradigms), and ethnography and heuristic (usually considered methods). That is the discussion appears to compare unlike objects. When Goldkuhl (2004, p. 13) refers to pragmatism as an alternative to ‘abstract’ and ‘rationalistic science’, in the absence of a translation one can only presume that he means anti-positivist and positivist respectively. Unfortunately some authors appear to adopt an open license in using or creating terminology without regard to providing an equivalence explanation. Furthermore, there is no formal mapping to provide an insight into terms from different classifications that may have a similar meaning; witness the array of underlying paradigms or philosophies that include the word critical: critical (Orlikowski & Baroudi 1991), critical realism, and critical theory (Guba & Lincoln 1994).

Another form of confusion arises from the duality of research elements acting as both underlying philosophical paradigms and research methods. Myers (2004) explicitly states that hermeneutics may be treated ‘as both an underlying philosophy and a specific mode of analysis’. Similarly, Williams (2004, p. 20) uses the term ‘heuristic enquiry’ as both a research approach and a paradigm. When discussing interpretive field studies, Klein and Myers (1999, p. 70) describe phenomenology as an underlying philosophical paradigm, whereas Creswell (1998) refers to it as a method. It is not claimed that these authors are technically in error, rather that such plurality of meaning causes significant confusion, which is exacerbated by the highly abstract nature of most of these concepts.

While Göktürk (n.d.) has openly railed against the lack of clarity in the use of philosophical terms (he focussed especially on exploring the meaning of the word paradigm), others including Klein and Myers (1999) merely note the confusion. We do not think that the seriousness of the problem has been sufficiently and explicitly acknowledged as may be warranted. Were it the case, then perhaps there would be greater efforts to redress the situation by those who have the power and influence to do so. It would also better prepare novice researchers for the challenges that lie ahead, and obviate there suffering unnecessarily from self-doubt when all is not apparent. It would also enable researchers to take a more sensible and timesaving approach to these matters.

5. Recommendations

There are two stakeholder groups in relation to the recommendations hereunder: one is novice researchers, the other is the discipline elders who are most able to effect positive change and influence the direction of the IS discipline.

With a novice IS researcher as the main focus of this paper, and given the uncertainty and confusion in the current methodological landscape, there is one core recommendation. We advise you to initially research, think and write in whatever paradigm is suggested by your dissertation advisor. This will give you a base on which to operate effectively initially without running the very real risk of being overwhelmed by the full gamut of material. From that point on, it is opportune to explore the landscape incrementally. We believe that the experience gained through road-testing a paradigm and an approach is invaluable From that point on your understanding of the landscape will be such that you may productively strike out into the less well-defined areas of IS research methodology.

During question time, at the end of a presentation at ACIS 2004, the comment was made that ‘to read one paper, I have to read twenty’. We feel that this is no less relevant to the methodological arena. This problem, the lack of consistency and translation, as well as the ad hoc process of methodological development require urgent attention. So what is the solution? What must be done in order to overcome these problems?

We believe that an alliance must be established of senior academics committed to addressing these problems. They have the power to ensure appropriate leadership, direction and resources; and are thus the logical choice in terms of the stakeholders capable of addressing
these issues. This is reflective of a statement made by Weber (2003) regarding theoretical development ‘we need leadership from senior colleagues within our discipline. Relative to junior colleagues, they have less to lose if their theory-building papers undergo tortuous review processes, perhaps in the end to be rejected. Nonetheless, hopefully they can provide the important service of laying the foundation on which junior colleagues who aspire to work as theoreticians can build’. The qualitative research web sites created by Michael Myers on IS World are an exemplar (2004). Such a resource should establish an agreed taxonomy and a standard nomenclature (discipline-sanctioned definitions of terms and their relationships) for the various elements that comprise the methodological landscape. The impetus for this recommendation comes from the landmark efforts of Michael Myers who has undertaken the daunting task of amassing materials and performing an initial analysis on them to enunciate many of the key, salient aspects of qualitative research in IS. What is proposed here, is intended to build on such foundations.

When suggesting such mechanisms, it may seem that these recommendations may curb academic freedom and thus result in a narrowing of views or understanding through suggesting accepted standards and meanings. This is far from the intent, which is to give some solid base for the discipline to work from and to provide mechanisms to enable the growth and development of these accepted standards.

6. Concluding comments

In this paper we have shown that the journey of discovery for the novice IS researcher can be a fraught one. Apart from the many inherently complex and abstract philosophical concepts associated with the research landscape, the major source of frustration is in the form of a maze in which to search for understanding; and the major source of difficulty is the haze that arises from the lack of standard terminology, and the absence of cross-interpretation. On reflection, we found that what becomes clear is that nothing is clear.

Some, probably many discipline members believe that this is a necessary, character-building journey that must be undertaken by novices. We are not proposing that novices be exempt from undertaking a meaningful exploration of the philosophical basis of research; indeed such activity is an inherent part of the intellectual pursuit that is core to the very meaning of being an academic. However, we contend that there is a point where the difficulties encountered and the time required means that the experience becomes dysfunctional. It is at this stage that many lose interest and merely go through the motions of fulfilling coursework requirements, and subsequently adopt the most convenient, expedient research approach. Hence we should be aiming for the more fertile ground whereby the experience is challenging and rewarding, but that the necessary work is undertaken to ensure that a sound base is available to take IS research forward. This is a non-trivial problem with serious economic consequences when viewed from the angle of lost productivity.

The methodological and philosophical underpinnings provide a crucial resource to IS research. Myers, Klein and Weber, that the further development of the available methodological toolset and our understanding of what constitutes credible research can grow, only through the sort of work carry it out. It is certainly the case that a more methodologically rich environment will be beneficial to the IS discipline. Our call for action in this paper is aimed squarely at those eminent academics who hold the reins of the discipline, and without whose support there is little hope for change. These are the editors and reviewers of major journals and publications, as well as the program committees of the major conferences. Simply acknowledging the existence of the problems is not sufficient, there must be change. While this work was guided by the pragmatist philosophical paradigm, it also reflects the ideals of critical research in that it not only aims to expose the ‘truth’ about the situation, but to act as an emancipatory catalyst to free successive generations of research students from the shackles of confusion and uncertainty.

The current climate militates against change and growth. Without a definitive set of guidelines, researchers tend to stick to safe ground in order to maximize the possibility that their research will be published. As lamented by Weber (2004), while ever the debate is stuck
on stale topics, we consume the intellectual resources that could be focussed on more productive pursuits. This is certainly mirrored in the matters examined in this paper, since if they were addressed many more progressive topics could be tackled in more productive ways.

As with many other issues that fall under the broad heading of the IS crisis (Benbasat & Zmud 2003; Straub 2004), the discipline has shown a greater appetite for lamenting the problems than acting on them. Hopefully this will be an exception and we will witness some focussed efforts by those stakeholders empowered to effect the necessary change. We believe this situation requires decisive leadership from the discipline elders rather than a groundswell from the grass-roots members. We hope that Webster and Watson's (2002, p. xviii) claim that 'a review succeeds when it helps other scholars to make sense of the accumulated knowledge on a topic' has been somewhat realized in this paper.

References

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