6
COMING OF AGE
Interpretive research in information systems

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Introduction
Over the past 10 to 15 years interpretive research has come of age. In fact, one might say that it has almost become normal science, or an accepted way of doing research in Information Systems (IS). Various surveys of the IS research literature paint a reasonably consistent picture, showing that approximately 25% of all articles published in our top journals are interpretive (Liu and Myers, 2011). This proportion of interpretive to positivist research has not changed much for over a decade (Chen and Hirschheim, 2004). Although some argue that there is a lack of diversity in IS research (Mingers, 2003) and criticize the ‘methodological monism’ and narrowness of IS research (Davison and Martinsons, 2011), at least a reasonable amount of interpretive research is being conducted and published on a regular basis.

This was not always the case. Back in the late 1980s and early 1990s many IS scholars complained about the fact that almost all IS research was of a similar nature, that is, it was almost all quantitative and positivist. For example, Galliers and Land (1987) lamented the lack of diversity in IS research and called for a wider interpretation of what should be considered acceptable IS research. Orlikowski and Baroudi (1991) said that any one perspective is always only a partial view, and unnecessarily restrictive. They argued that there was much that could be gained if a plurality of research perspectives was effectively employed to investigate information systems phenomena. Landry and Banville (1992), likewise, suggested that no single method could ever capture all the richness and complexity of organizational reality, and that a diversity of methods, theories, and philosophies was required (Landry and Banville, 1992, p. 78). There were many other similar calls at around the same time for IS researchers to value a diversity of methods and paradigms (Lee, 1991).

By the early 2000s, however, interpretive research had taken its place as one valuable paradigm or research philosophy alongside positivist research. From the early 2000s onwards a steady stream of interpretive research articles began to be published in all of our best journals. One obvious question to ask is this: What happened in the mid- to late 1990s that paved the way for more diversity in the IS field? What changed the minds of the senior scholars (the gatekeepers) within the discipline to allow a reasonable number of interpretive articles to be published? Although a small number of journals had welcomed interpretive research before 2000 (mostly the European-based journals such as European Journal of Information
Systems, Information Systems Journal, and Journal of Strategic Information Systems), from
approximately 2000 onwards almost all IS major journals began to welcome such work. The
senior scholars of these journals started to appoint a few interpretive researchers as associate
and senior editors, and they in turn appointed ‘qualified reviewers,’ that is, those with some
expertise in interpretive research – to evaluate interpretive manuscripts. These appointments
to virtually all of our best journals enabled and facilitated the publishing of a greater number
of interpretive research articles.
I suggest the main thing that happened was the publication of a few articles that defined and
explained the interpretive research paradigm, along with articles that proposed or established
principles or criteria for the evaluation of interpretive research manuscripts. Of course, all the
various calls for diversity helped to set the scene, so to speak, but I believe it was the publication
of various evaluative criteria that made all the difference. These articles helped to legitimi
tize interpretive research as valid way of conducting research on IS phenomena, and they
provided a justification as to why interpretive research was valuable and needed. Of course,
the ones that needed convincing were not interpretive researchers themselves, but rather the
gatekeepers, that is, the majority of senior IS scholars and editors of journals, who even today
adopt mostly positivist approaches to research.
Two early articles that helped to pave the way were published by Geoff Walsham. In the
first article he discussed the emergence of interpretive and suggested that his paper could be
used as “a reference point” for further work (Walsham, 1995a). In the second article he explicit
ly provided some guidance for those wanting to conduct interpretive case studies (Walsham,
1995b). He suggested how interpretive researchers could contribute to theory and make gener
alizations from interpretive case studies. Subsequently, Markus and Lee edited a special issue
of MIS Quarterly that had as its explicit purpose the establishment of appropriate criteria for
evaluating various qualitative and interpretive methods. They said they were concerned that
some IS scholars were inappropriately using “positivist criteria to judge interpretivist inten
sive research” (Markus and Lee, 1999, p. 36). Hence the special issue was explicitly designed
to provide some exemplars of how such research could be evaluated. I believe the goals of the
special issue were certainly achieved: the first two articles that were published as part of the
special issue have since been widely cited, with the first one (Walsham and Sahay, 1999) being
cited more than 650 times and the second (Klein and Myers, 1999) more than 4,500 times. The
latter suggested a set of principles for the evaluation of interpretive field studies, drawing on
hermeneutics and phenomenology as its philosophical base.
Having said this, however, I think many interpretive IS scholars seem to have misinter
preted the main purpose of these articles. I have received a few comments from IS colleagues
saying that their paper was rejected because it did not meet all of the principles outlined in our
1999 paper (Klein and Myers, 1999). In other words, the Klein and Myers (1999) paper was
being used as some kind of stick with which to discipline their work. The Klein and Myers
(1999) principles were being seen as some kind of orthodoxy which all interpretive papers
must follow.
But this use (or rather, misuse) of our article suggests to me that some scholars have been
using our paper inappropriately. A careful reading of our paper will show that we explicitly
stated that our proposed principles should not be used like a checklist and that their use was
not mandatory. In fact, to guard against our paper being used in this way, we made this same
point twice, in both the introduction and conclusion. We said, and I quote, “We caution, how
ever, that our proposed set of principles cannot be applied mechanistically. It is incumbent
upon interpretive scholars to appropriate them and use their own judgement as to their specific
application” (Klein and Myers, 1999, p. 88). We also said that our proposed set of principles
was just one set, and additional sets of principles would be welcome. The idea that our principles are the one and only way to evaluate interpretive research is a complete misinterpretation of our paper.

Given this misinterpretation, which unfortunately seems to be rather common (Jones, 2004), I think I need to restate what was the main purpose of our 1999 paper: the main purpose of our Klein and Myers (1999) paper was to help establish interpretive research as a legitimate paradigm for IS research. The main audience was positivist IS researchers: we wanted to convince them that interpretive research was a valid paradigm for IS and such research should be welcomed in our journals. Heinz and I had no intention of forcing interpretive IS researchers to slavishly follow the principles, even though that may have been the unintended result in a few instances.

Overall, however, I think it is fair to say that the main purpose of our paper was achieved. It is now relatively easy to justify the use of interpretive research in IS research and even positivist IS researchers, while they may not conduct interpretive research themselves, at least recognize its value. They realize that the interpretive research should not be judged by inappropriate positivist criteria, although I would add that not all interpretive research should be judged by the Klein and Myers (1999) criteria, either. Interpretive research has taken its place as one valuable research paradigm among others. Most interpretive IS scholars seem to use our principles appropriately.

I will now discuss the nature of interpretive research and how it differs from positivist research. Both positivist and interpretivist research aim at improving the understanding of phenomena, but differ in how this can be achieved.

**The nature of interpretive research**

All research is based on some underlying philosophical assumptions. These philosophical assumptions are concerned with our beliefs about reality, how knowledge can be obtained about this reality, and how this knowledge can be justified (Myers, 1997). I will discuss just two paradigms or research philosophies in this chapter: positivism and interpretivism. Although there are other paradigms, such as the critical research paradigm (Brooke, 2002; Kvasny and Richardson, 2006; Myers and Klein, 2011; Richardson and Robinson, 2007; Stahl and Brooke, 2008), the positivist and interpretivist paradigms are the most common in IS research.

Positivism is the most commonly used paradigm in information systems, as it is in most other social science and business disciplines, although most positivist IS researchers would probably classify themselves as post-positivist researchers today (Burton-Jones, 2005; Straub et al., 2004). One of the most basic assumptions of positivism (or post-positivism) is that reality is objectively given and can be described by measurable properties which are independent of the observer (researcher) and his or her instruments (Bernstein, 1983). In practice this means that a positivist IS researcher will seek to test one of more hypotheses against a particular data set. The data set is assumed to be a reasonably accurate representation of the real world “out there.” While post-positivist researchers accept the idea that their models and theories are social constructions, they still believe that the reality they are studying exists independently of the observer. Hence it is important for positivist researchers to be objective and not let their own biases or values affect (or ‘taint’) the results. One of the worst accusations that can be made against a positivist researcher is that they were biased either in their analysis of the data or in the writing up of their results.

The interpretivist paradigm is not as commonly used in information systems as the positivist paradigm, but is used in approximately one-quarter of all articles published in top
IS journals (Liu and Myers, 2011). Unlike positivist researchers, who assume that a theory or hypothesis can be tested against a data set, interpretive researchers assume that data are not detachable from theory, because what counts as data is determined in the light of some theoretical interpretation (Bernstein, 1983). Interpretive researchers assume that access to reality (given or socially constructed) is only through social constructions such as language, consciousness, shared meanings, and instruments (Klein and Myers, 1999). Interpretive researchers also assume, given the hermeneutic concept of prejudice or prejudgement, that the researcher’s background, methods, and the interactions with the phenomena under study influence the findings. Hence it is impossible for an interpretive researcher to claim to be completely unbiased. However, this does mean that an interpretive researcher should only find what they are looking for – they should be open to new discoveries. It also does not mean that the findings from interpretive research are less valuable than those from positivist research. Rather, the validity of the generalizations derived from interpretive research depends more upon “the plausibility and cogency of the logical reasoning used in describing the results from the cases, and in drawing conclusions from them” (Walsham, 1993, p. 15). Interpretive studies generally attempt to understand phenomena through the meanings that people assign to them and interpretive methods of research in IS are “aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context” (Walsham, 1993, pp. 4–5). Interpretive research does not predefine dependent and independent variables, but focuses on the full complexity of human sense-making as the situation emerges (Kaplan and Maxwell, 1994). Hence interpretive researchers in IS tend not to test any hypotheses or suggest propositions.

The applicability of interpretive research

Information systems are used by people in a variety of social and organizational situations. By definition, IS scholars conducting research on IS phenomena look at both the technology and people and how the two interact. One challenge for IS researchers is that the technology is always changing, as are the people, and yet another challenge is that the social contexts within which people live, work, and play are changing as well. In other words, everything is changing at once. For example, new mobile technology models are introduced every year; and as for the people, the younger generation of digital natives interact with technology in a different way than digital immigrants (Vodanovich et al., 2010; Wang et al., 2013); and as for the social and organizational context within which people and technology interact, this is constantly changing as well – for example, the laws concerning e-business, data sharing, and/or privacy seem to be updated every few years. This means that an IS researcher needs to try to understand not just the technology and the people and how these two interact, but also the social and organizational context within which they interact. This real-life context is forever changing, with people having different ideas about what is happening and why. And this is where interpretive research comes into its own – interpretive research provides a paradigm and a way of exploring this context. Hence the goal of interpretive field research is to improve our understanding of human thought and action through the interpretation of human actions in their real-life context.

In short, interpretive research is applicable especially in real-life situations where that situation is messy and rather complicated. I have found that interpretive research is especially valuable when we are trying to understand a new phenomenon or re-think an old problem in a new way.

The two most common research methods that interpretivist researchers tend to use are case study research (Walsham, 1993, 1995b) and ethnographic research (Harvey and Myers, 1995;
Case study research and ethnographic research are similar in the sense that both involve talking to people in their real-life context, except that the latter relies more on fieldwork and participant observation. The ethnographer “immerses himself in the life of people he studies” (Lewis, 1985, p. 380) and seeks to place the phenomena studied in its social and cultural context. As Yin explains,

> Ethnographies usually require long periods of time in the “field” and emphasise detailed, observational evidence... In contrast, case studies are a form of enquiry that does not depend solely on ethnographic or participant observation data. One could even do a valid and high-quality case study without leaving the library and the telephone. (Yin, 1994, pp. 21–22)

As well as case study research and ethnographic research, the interpretive paradigm can inform action research studies. Action research is an interventionist research method where the researcher seeks to solve a practical problem as well as a research problem (Baskerville, 1999). Normally action research is carried out in collaboration with practitioners. The idea is that the researcher contributes to practice as well as to the scholarly community (Baskerville and Myers, 2004). Action research is usually seen as a cyclical process that involves diagnosing a problem situation, planning action steps, and implementing and evaluating outcomes. The evaluation may lead to starting another action research cycle based on the insights previously gained. The main idea is that action research uses a scientific approach to study important organizational or social problems together with the people who experience them (Elden and Chisholm, 1993). An example of an interpretive approach to action research is Peter Checkland’s work in developing soft systems methodology (SSM). SSM is a methodology for enquiry into ‘soft’ or ill-structured situations. SSM has been used in information systems to understand problem situations, and then to recommend taking action to improve them (Checkland and Holwell, 1993, 1998; Checkland and Scholes, 1990).

The interpretive paradigm can also be used in conjunction with grounded theory studies. The basic idea of grounded theory is that the concepts and theory should emerge from the data. Rather than using preconceived ideas, the researcher uses a coding scheme and has to constantly compare and contrast qualitative data in the search for similarities and differences (Urquhart et al., 2010). An example of an interpretive approach to grounded theory is Cathy Urquhart’s work on analyst–client communications (Urquhart, 1997).

### Examples of interpretive research

I will now discuss a few empirical examples of interpretive IS research.

Boland was one of the first IS researchers to adopt an interpretive paradigm in his research work (Boland, 1979, 1985, 1987, 1991; Boland and Day, 1989). He suggested hermeneutics and phenomenology as a means of looking at the sense-making process in information systems development. Klein and Hirschheim (1983) provided a brief introduction to the hermeneutic approach to IS research.

Almost a decade later, Walsham became one of the leading advocates of interpretive research (Walsham, 1993, 1995a, b; Walsham and Sahay, 1999). In one of his articles with Waema, the IS strategy formation and implementation process in a medium-sized UK building society was analyzed. One of their conclusions was that the IS strategy formation and
implementation process is a dynamic one, involving time-varying relationships, multilevel contexts, and cultural and political aspects (Walsham and Waema, 1994).

Also in the 1990s, both Lee (1991, 1994) and Myers (1994, 1995) used hermeneutics in their studies of information systems. Lee (1994) looked at richness in email communications by exploring the wider social and political context within which the email communications took place, while Myers (1994, 1995) examined the implementation of an information system from a critical hermeneutic perspective.

Using ethnographic research, Orlikowski (1991) studied a large, multinational software consulting firm. She found that, contrary to the theoretical position of much of the IS research literature at that time, which assumed that information technology will transform existing bureaucratic organizational forms and social relations, the use of new information technology led to the existing forms of control being intensified and fused. Her research was informed by Giddens’s theory of structuration (Giddens, 1984). In a similar way, Hirschheim and Newman (1991) critiqued current IS development approaches by looking at the role of myth, metaphor, and magic.

Toward the end of the decade a few interpretive research articles discussed various aspects of using interpretive research as a research method (e.g., Butler, 1998; Nandhakumar and Jones, 1997). The Journal of Information Technology published a special issue on interpretive research in 1998 (Myers and Walsham, 1998).

In 2000 Trauth and Jessup (2000) analyzed the same IS phenomena (group support system use) from both positivist and interpretivist perspectives. They found that, while the positivist analysis provided useful information, the interpretive analysis provided a richer understanding of the same evidence. Their paper thus contributed to a better understanding of the added value of interpretive research in information systems.

From about 2000 onwards many interpretive research articles began to be published in almost all IS journals. In this chapter it is simply not possible to mention them all, so I will just mention a few excellent examples.

Iversen et al. (2004) used interpretive research to study the management of risk in software process improvement initiatives. As well as proposing an approach to understand and manage risks in SPI teams, the authors proposed how it might be possible to tailor risk management to specific contexts.

Madon (2005) adopted a “practical reflexive-interpretive” methodological approach to encourage the development and reshaping of theoretical ideas about governance. Madon studied the sustainability of a telecentre project in India.

Levina (2005) used an interpretive approach in her study of a Web-based application development project. She proposed that multiparty collaborative practice can be understood as constituting a “collective reflection-in-action” cycle through which an information systems design emerges as a result of agents producing, sharing, and reflecting on explicit objects.

Sarker et al. (2012) used interpretive case study research to explore value creation in relationships between an ERP vendor and its partners. Their research uncovered different mechanisms underlying value co-creation within B2B alliances, and also pointed to several categories of contingency factors that influence these mechanisms.

Echoing the earlier study by Trauth and Jessup (2000), Lee and Dennis (2012), in their study of a controlled laboratory experiment, showed how interpretive research, and specifically hermeneutics, can complement and reinforce positivist research.

Quite a few studies have used interpretive research to provide new insights into IT outsourcing (Levina and Ross, 2003) and IT offshoring. For example, Gregory et al. (2013) looked at
the control dynamics associated with IS development (ISD) offshoring projects, whereas Ravishankar et al. (2013) focused on IT offshoring within the context of postcolonialism.

Although most interpretive research articles in IS have tended to use case study research or ethnographic research, a good example of an interpretive action research study is provided by Braa et al. (2007). The authors helped to provide a strategy to standardize health information systems and information infrastructures that are appropriate for the context of developing countries. Another example of an interpretive action research study is Smith et al.’s (2010) analysis of power relationships during an information systems security standards adoption and accreditation process. The authors found that a strategy based on organization subunit size could be helpful in motivating and assisting organizations to attain government mandated accreditation of their security processes and procedures (Smith et al., 2010).

As can be seen, IS researchers have used interpretive research to provide insights into a variety of IS topics. Although interpretive research is often said to be most useful for “exploring” a new phenomenon, there are good examples of interpretive research being use to provide fresh insights into long-established areas such as IT outsourcing and offshoring.

Evaluating interpretive research manuscripts

The Klein and Myers (1999) principles for interpretive research are summarized in Table 6.1. The seven principles they were derived from hermeneutic philosophy and phenomenology and applied to an IS context.

Table 6.1  Klein and Myers’s (1999) principles for interpretive research

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<th>1. The Fundamental Principle of the Hermeneutic Circle</th>
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<td>This principle suggests that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form. This principle of human understanding is fundamental to all the other principles.</td>
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<th>2. The Principle of Contextualization</th>
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<td>Requires critical reflection of the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged.</td>
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<th>3. The Principle of Interaction between the Researchers and the Subjects</th>
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<tr>
<td>Requires critical reflection on how the research materials (or “data”) were socially constructed through the interaction between the researchers and participants.</td>
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<th>4. The Principle of Abstraction and Generalization</th>
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<tr>
<td>Requires relating the idiographic details revealed by the data interpretation through the application of Principles 1 and 2 to theoretical, general concepts that describe the nature of human understanding and social action.</td>
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<th>5. The Principle of Dialogical Reasoning</th>
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<td>Requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings (“the story which the data tell”) with subsequent cycles of revision.</td>
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<th>6. The Principle of Multiple Interpretations</th>
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<td>Requires sensitivity to possible differences in interpretations among the participants as are typically expressed in multiple narratives or stories of the same sequence of events under study. Similar to multiple witness accounts even if all tell it as they saw it.</td>
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<th>7. The Principle of Suspicion</th>
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<tr>
<td>Requires sensitivity to possible ‘biases’ and systematic “distortions” in the narratives collected from the participants.</td>
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Although the Klein and Myers (1999) principles are the most widely recognized criteria of judging interpretive research manuscripts (Jones, 2004), they are not the only ones that have been suggested. For example, Walsham suggested four criteria for the evaluation of interpretive case studies: interpretive case studies should develop new concepts, contribute to theory, draw specific implications, and contribute rich insight into IS phenomena (Walsham, 1995b). Schultze, drawing on Golden-Biddle and Locke (1993)’s work, suggested three criteria for ethnographic research in general, namely, authenticity, plausibility, and criticality (Schultze, 2000), with two additional criteria for ethnographic work of a confessional nature.

Jones (2004) says there is a danger of researchers unreflexively adopting criteria such as those mentioned as measures of quality. The fulfilment of these criteria could become the objective in itself, without reference to the wider aims of the research. While I agree with him that this is a danger, in actual fact I believe that most IS researchers have used these criteria appropriately. I have not read many papers that use these criteria unthinkingly – in fact, most IS scholars only to refer to the principles in passing without getting bogged down in the detail. Hence I believe the publication of these criteria was good for the IS field as a whole in that they helped to legitimize interpretive research among the wider community of IS scholars, especially among those IS researchers who adopt positivist research methods.

Conclusion

Interpretive research has come a long way over the past one or two decades, with approximately one-quarter of all IS research articles now adopting an interpretive perspective. Interpretive research is well suited to providing information systems researchers with rich insights into the human, social, and organizational aspects of information systems development and application. It is especially valuable in exploring the messy, confused, and often complicated social contexts within which IT phenomena are developed and used. However, with interpretive research in effect becoming normal science, there is a danger that only a certain way of doing interpretive research might become the norm. Hence my plea is that IS scholars continue to show some flexibility to ensure that interpretive researchers continue to come up with interesting and creative insights. Perhaps some IS scholars will also take up the challenge of suggesting different sets of principles for the evaluation of interpretive research? However, given that most IS scholars do not seem to be slavishly following the existing published criteria for conducting and evaluating interpretive research, that task might not be as urgent as it once was.

References

Coming of age: interpretive research in IS


