

12-31-2003

Social Theory in IS Research: Some Recommendations for Informed Adaptation of Social Theories in IS Research

Jonny Holmstroem
Umeå University

Duane Truex
Florida International University, dtruex@gsu.edu

Follow this and additional works at: <http://aisel.aisnet.org/amcis2003>

Recommended Citation

Holmstroem, Jonny and Truex, Duane, "Social Theory in IS Research: Some Recommendations for Informed Adaptation of Social Theories in IS Research" (2003). *AMCIS 2003 Proceedings*. 373.
<http://aisel.aisnet.org/amcis2003/373>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2003 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

SOCIAL THEORY IN IS RESEARCH: SOME RECOMMENDATIONS FOR INFORMED ADAPTATION OF SOCIAL THEORIES IN IS RESEARCH

Jonny Holmström

Center for Digital Business
Umeå University

jonny.holmstrom@informatik.umu.se

Duane Truex

Florida International University
Duane.Truex@fiu.edu

Abstract

In this paper we consider what it means to be an informed IS researcher. In doing this, we have focused our attention to the selection and use of social theories in IS research, and we have asked ourselves “how should one choose the theory which will guide any given piece of research?” We see this as an important question to reflect upon, given the extensive use of and debate about the efficacy of various social theories in IS research during the last few decades. After discussing some of the problems and opportunities related to the use of social theories, we argue for an ‘informed eclecticism’ in the adaptation of social theories. With informed eclecticism we mean that while we welcome diversity in theories and recognize this as much needed in our field, we also argue for a certain awareness guiding theory selection and use. For this purpose, the paper ends with four recommendations for theory selection and use: (1) consider the selected theory’s historical context, (2) consider the selected theory’s sensitivity towards details of the phenomenon under study, (3) consider how the selected theory impacts the choice of research method, (4) consider the theorizing process’ contribution to cumulative theory.

Keywords: Social theory, information systems, theory use

Introduction

In this paper we consider what it means to be an informed IS researcher. Numerous characteristics of an informed researcher come to mind. But among those we consider most important is the manner in which the informed IS researchers are able to answer the question: why did you choose a certain theory versus another; what value is added by choosing this particular theory? In our own experience we have witnessed far too many instances wherein the researcher has been unable to formulate a reasonable reply to that question. So we have asked ourselves “how should one choose the theory which will guide any given piece of research?”

Like any difficult question it raises other questions. So before we attack our principal question directly we need to address some related points. The first of those must be the question of why does a choice of theory matter? And what is a theory anyway?

We turn to Karl Weick for insight on both points. For our purposes we will define theory as something that “explains, predicts and delights.” (Weick, 1995) Borrowing from Sutton and Straw theory “is the answer to queries of why. Theory is about the connections among phenomena, a story about why acts, events and thoughts occur. . . .it delves into underlying processes” helping us to understand why they happen. (Sutton & Straw, 1995) Thus theory is a set of expectations, assumptions and values.

What is the point of having or using a theory? Simply stated theory guides the process of making sense of complicated and often-contradictory real world phenomena. So theory acts as both a lens through which we focus and magnify certain things while filtering out others things presumed to be “noise“. Theory frames the things we seek, the way we explore and it may also filter that which we see in the process. When used in an explicit, reflexive and conscious manner a properly chosen theory does make a significant difference in observation. In our view a researcher always approaches a topic from some theoretical point of view,

however this may or may not be explicit. If it remains an implicit and unstated set of assumptions it may actually inhibit the study of the phenomena at hand. Turning again to Karl Weick for insight on this point:

“...implicit theories impede understanding; they act as blind spots... Because believing is often seeing, implicit theories become undeliberated assumptions, which are imposed and appear to be self-confirming. People see what they expect to see.” (Weick, 1984, p. 113).

Jones reports that, in IS research, while theories come and go some theories are more persistent than others. His work also suggests and that IS research is not immune from the forces of ‘theoretical fashion’. (Jones, 2000) Each change in theory, while conceivably offering benefits in terms of improved insights about phenomenon under study, also poses challenges to a researcher and to a research community. In the field of management Barley and Kunda illustrate how there is a cyclical ebb and flow of theoretical use. (Barley & Kunda, 1993) The contents of a new wave of theories may very well involve some old and well-established elements. A key point of their work is that as the field incorporates each theoretical ‘surge’ into the mainstream it does so bringing many of the assumptions of all previous theories into the theoretical *doxa* of the discipline. Thus one the one hand, one challenge a new theory presents to a research community involves assessing its contribution to cumulative tradition and then folding it into that historical context. On the other hand, another challenge a new theory presents to a researcher lies largely in investing time and effort to understand the theory in its native environment, to learn the vocabulary and underlying assumptions of the theory, to understand its weaknesses as well as its strengths, and to acknowledge its previous use, applicability and challenges to its voracity. Hence it becomes rather impractical for a researcher to conduct work in multiple theoretical traditions.

Does this potential to stumble into the pitfalls of other disciplines argue against borrowing theories? We think not. An informed use of theories helps our field grow. As Banville and Landry (1989) point out our field is a kind of ‘fragmented adhocracy’ in which theoretical diversity has been a good thing, and pluralism is the order of the day (Hirschheim, Klein and Lyytinen, 1996). IS research is characterized by diverse but well-defined paradigms. For instance, interpretive IS research is becoming more and more well defined, and there is an ongoing discussion on what the character of interpretive IS research is (see Klein & Myers, 1999). Each are in varying stages of development but seem to co-exist reasonably well. We think of this as a type of ‘informed eclecticism.’

We acknowledge that there have been many instances where the translation of a theory developed in one discipline has been made successfully ported to IS research. Theories borrowed from other disciplines have favourably impacted IS research. In one sense this paper is inspired by such successful examples. But this paper is also motivated by our concern over the negative impact that uninformed eclecticism in the shape of ‘quick and dirty’ use of social theories has on our field. (c.f., Truex and Baskerville, 1998). This paper proceeds as follows: In the following section, we discuss the role of social theories in IS research. We discuss previous experiences of adapting social theories to the practicalities of IS research, and we discuss some of the problems and opportunities involved in such an effort. In section three we propose four recommendations for theory adaptation, and we end up in the fourth and final section with some conclusions.

Social Theories in IS Research

Understanding the relationship between technology and society is at the heart of much IS research. An applied research discipline, IS research is concerned with the understanding of IT in organizations and society. In this endeavor, IS researchers have long been aware of and drawn from social theories. It has been argued that theories developed in other disciplines are of limited value for IS researchers unless they are adapted to the specific conditions for IS (Ngwenyama, 1991). Never the less, social theories have been widely applied to IS research. The debate surrounding this issue has been focused on the relative qualities of various theories, social theory or the subset organizational theory, rather than on whether or not these theories should be applied.

As noted by Mason: “In addition to needing a better understanding of the thing doing the impacting, we must also be clearer about the thing that is impacted.” (Mason, 1984) Also one must understand the role each has at any given time. At one point it might be the impactee, at another the impactor. The status of our field today is one where this blurred boundary between these roles is acknowledged. As an example of a theory that explicitly attempts to deal with such ephemeral boundaries is Giddens’ Structuration Theory (Giddens, 1979, 1984). While the application of structuration theory to IS research continues to be a debatable issue, most would agree that the theory is well suited for exploring the ephemeral boundaries between IT and organization. It is also easy to assume that the way in which theories like Structuration Theory or Actor Network Theory explicitly addresses the middle ground is, atleast in part, a reason for why these theories are embraced by IS researchers.

The structurational model of technology is a way of taking into account the material aspects of technology, but also how technology is socially constructed. Thus, technology is socially transformative as well as socially transformed. Orlikowski, recalling ‘interpretive flexibility’ emphasizes that “there is flexibility in how people design, interpret, and use technology, but that this flexibility is a function of the material components comprising the artifact, the institutional context in which a technology is developed and used, and the power, knowledge, and interests of human actors...” as well as time (Orlikowski, 1992: 421). A problematic issue in Orlikowski’s model is that she puts technology between human agency and structure, and thus re-establishes a dualism that Giddens’ structuration theory achieves to overcome (Rose and Truex, 2000; Jones 1998). However, her adaptation is a development of Giddens’ original ideas to the practicalities of IS. In a similar ambition, Jones (1998) has argued that there are some problems involved with applying structuration theory when trying to be specific about how IS are used in organizations. In an attempt to modify structuration theory, Jones tries “to move beyond the pure subjectivism of Giddens structuration and to incorporate a form of material agency” (Jones, 1998: 299). Jones continues,

“... the realist critiques of structuration theory suggest that a relatively objective notion of structure is not incompatible with human agency. Technology may, therefore, be recognized as having an objective character, capable of exerting agency in its own right, rather than simply being ‘traces in the mind’ of social actors.” (Jones, 1998: 298-299).

The debate concerning the adaptation of Giddens’ original ideas to IS research is a good example of the complexities involved in adapting a social theory to the IS discipline. There are two positions at the heart of this debate. There are, on the one hand, arguments advocating the need to remain faithful to the main thrust of Giddens’ original ideas. On the other hand, there are arguments advocating the necessity to adopt Giddens’ original ideas to the particulars of IS research. While the debate surrounding this issue indicates that there are some genuine interest to be found in the IS community, it also indicates a certain degree of confusion and thus also a need of guidance. As a contribution for guidance, we will propose four recommendations for theory selection: (1) consider the selected theory’s historical context, (2) consider the selected theory’s sensitivity towards details of the phenomenon under study, (3), consider how the selected theory impacts the choice of research method, (4) consider the theorizing process’ contribution to cumulative theory. These recommendations will be discussed in detail in the next section. The challenge of converting Giddens’ structuration theory to a research program whose scope is smaller than society, is but one example of a generic problem in adapting sociological theories to IS research programs. These issues have been faced by researchers using Habermas’ Critical Social Theory, Bourdieu’s theories of capital and practice, and the theories of Marx, Weber, Parsons, Berger and so on. So even though we do not predict what new social theories may appear on the horizon, we do predict that these issues will remain on the agenda to the adaptation of any social theory to IS research.

Steps Towards an Informed Eclecticism: Some Recommendations for Theory Adaptation

The ultimate test for any theory lies in its relation to real world problems. As noted by Robey and Zmud (1992):

“Theory should be a tool, and the only requirement for its successful use is the ability to see the parallels between theoretical constructs and real problems.” (Robey & Zmud, 1992: 25).

Such development depends on the generalization that Yin labels as an “analytical generalization”, where the researcher “is striving to generalize a particular set of results to some broader theory” (Yin, 1994: 36). Thus, theories are not “tools” that are used without being changed; in fact, the development of these theories is an important result of the research conducted. This should be done in a reflexive manner however because it impact so much of the research from inception, to conduct (method) and outcome.

In this section, we propose four recommendations for theory adaptation. Again, we are not arguing against diversity in theories in IS research. On the contrary, diversity in theories is welcome and needed in our field. Rather, we argue for a certain awareness guiding theory selection.

Consider the Selected Theory’s Historical Context

It is important to consider the selected theory’s historical context. Ignoring debates and controversies raised concerning the use of a specific theory would probably lead to repeating the same mistakes in our own discipline. Clearly, we argue for a certain degree of theory development in our field. However theory use is not like playing improvisatory jazz; the researcher should not

be engaging in “free improvisation.” Rather theory must be employed while considering its historical contexts and remaining faithful to its ‘main thrust.’ Every theory has a starting point, evolution and an intellectual trajectory and develop out of an intellectual dialectical process. While some ideas are introduced, debated and discarded or discredited, other intellectual threads are agreed upon in an intellectual community. These ideas survive and are built upon in subsequent use and debate. In Actor network terms these theoretical ‘facts’ are prototypical black box and the result of growing actor networks. However as these networks grow and develop they also change directions. Accordingly, in using a theory in an informed way one must not only stand upon commonly agreed upon ‘facts’ but one must also be aware of historical developments. That is an informed researcher must understand how facts came to be accepted as a ‘fact’, how they were once merely one of many possible paths of development. One should be aware of the reasons this particular path was selected, how these ideas were challenged, and how they resisted this challenge.

One should also be aware that on a superficial level some concepts are seemingly shared by multiple theories. They use the same terms and vocabulary for similar phenomena. But to assume that they are indeed the same is potentially dangerous. For instance, while an explicit notion of agency can be found in most social theories it should be noted that there are fundamental differences between the notion of agency as described in structuration theory, and the way in which it is described in actor-network theory. Thus, while we agree with Orlikowski and Baroudi (1991) that the employment of a variety of approaches is important and crucial to the development of profitable IS research, we also agree with Deetz (1996) who argues for researchers to be careful to adopt more than one discourse, in terms of underlying assumptions, in a given research endeavor. Thus, any potential benefit in combining ANT and Structuration Theory would not measure up to the problems one takes on board while trying to combining what may well be conflicting epistemologies. (Rose & Truex, 2000).

Consider the Selected Theory’s Sensitivity Towards Details of the Phenomenon under Study

Theories of society does not easily translate to the particularities of IS. Thus, a researcher has to consider the selected theory’s sensitivity towards the details of the phenomenon under study. Raising this point, Monteiro and Hanseth (1995) note that it has become widely accepted in IS research that IT both enables and inhibits organizational action. However, they strongly recommend researchers to push this issue further:

“The problem, however, is that this belief does not carry us very far; it is close to becoming a cliché. To be instructive in an inquiry concerning current organisational transformations, one has to supplement it with a grasp of the interplay between IT and organisations in more detail. We need to know more about how IT shapes, enables and constrains organisational changes. Obviously, we neither want to argue against more suitable theoretical constructs nor empirical evidence *per se*. But we do suggest that what is lacking most is a satisfactory account of the interwoven relationship between IT and organisational transformations. More specifically, we argue that we need to learn more about *how* this interplay works, not only *that* it exists. This implies that it is vital to be more concrete with respect to the specifics of the technology.” (Monteiro and Hanseth, 1995, p. 326).

We agree with Monteiro and Hanseth on this, and interestingly conceptualizations like (Orlikowski, 1992; Orlikowski & Robey, 1991; Walsham, 1993) have been criticized for not being detailed enough with respect to the technology to form an appropriate basis for understanding the role and meaning of IS in organizational activities (Monteiro & Hanseth, 1995). It is necessary to push further and to describe in some detail how and where IS restricts and enables action. A ‘lack of precision’ from the researcher’s side on these issues has been characterized as a convenient fiction which deletes nuances of technical differences (Kling, 1991; Monteiro & Hanseth, 1995).

Consider How the Selected Theory Impacts the Choice of Research Method

The lack of theories in our field (e.g., Keen 1980) and the related issue of methodological weakness (e.g. Orlikowski and Baroudi 1991) has been pointed out as key issues afflicting IS research. Clearly, since theory and methodology are fundamentally related issues, we cannot consider the selection of theories without also considering what implications this may have on research methodology. The lack of ‘a theory of our own’ and our need to borrow theories from neighboring disciplines has led some to suggest that we do not have the ‘established’ theories necessary to perform confirmatory research, and we should thus concentrate our efforts on the exploratory phase instead (Klein and Lyytinen, 1985). In contrast, others have called for increased methodological rigor in confirmatory research by improving survey instrument validity and reliability (Boudreau *et al.* 2001). We will not take sides on this issue, we think it sufficient to note that methodological issues should be considered too when considering the choice of theory. It should be noted though that the choice of a research method is not made in a vacuum. It is

driven by several factors including: the question to be investigated; the object of the study; the training and methodological predilections of the researcher, and; the theory governing the research. Some questions are more amenable to certain theoretical frameworks than are others. And theories resonate best with certain methodological approaches. For instance, it would be difficult to imagine conducting research under the umbrella of Actor Network Theory without the ability to access and analyse interactions between key actants. The analysis can be of various types of texts or personal observations. Data gathering might be ethnographic or document research. But the underlying research method is essentially interpretive. So a choice of theory also has implications to the manner and way in which a study is going to be conducted.

Consider the Contribution of the Theorizing Process to Cumulative Theory

When using a specific theory as a resource in the theorizing process, the researcher should be able to answer: What is the added value? What is the added value to the theorizing process when using theory x that is not added when using theory y? The answer to this question should be given considering the tradition of the field – what we know and what we don't know. To contribute to cumulative tradition, a piece of research has to step beyond that which we already know. In different sub-areas in IS we can find pioneering work, such as the insight provided to us by Orlikowski & Robey (1991) that technology has enabling and inhibiting effects on organizing. There have been much work done on this particular issue in IS, and the rise in popularity of both structuration theory and actor-network theory in IS can largely be explained by the way in which IS researchers use these theories to explore how and why technology enables and inhibits organizing. To be able to write a good paper and to consider and build upon accumulative tradition, a researcher has to take into account pioneering work in the field.

We are not suggesting that the question of what is the added value to the theorizing process when using a certain theory is an easy question to answer. Quite the contrary, it is a very difficult question but a fundamental one that we should not avoid. The IS discipline has shown a great diversity in its use of social theories, but its relation to cumulative tradition in IS is far from straightforward. For while the continuing borrowing from other disciplines adds to the richness of our field, some researchers have expressed their concern for the absence of original theories in the IS discipline and the lack of a cumulative tradition (Alavi *et al.* 1989; Keen 1980). Clearly, this issue presents us with a potential challenge when we borrow theories from other discipline. However, while theoretical paradigms from other discipline are continually being borrowed (Benbasat and Weber 1996), a study of the emergence of MIS as a scholarly field in terms of its relationship to the foundation fields found that it was emerging as an independent discipline with its own cumulative tradition (Cheon *et al.* 1991). If anything, this ongoing debate underlines how important the notion of contribution to cumulative tradition is, and that this needs to be considered when adapting a social theory to the field of IS.

Conclusions

This paper set out to shed light on the question: “how should one choose the theory which will guide any given piece of research?” Given the extensive use of social theories in IS, and the overall importance of theories in the research process, the importance of this question cannot be over-emphasized. The importance of theory can be illustrated in various ways. For instance, while Straub *et al.* (1994) found that theory was considered the most important criteria to judge the quality of IS articles by the IS community, Rao and Jarvenpaa (1991) noted that theory provides the ‘channel’ for genuine understanding between researchers. Having said this, it should be noted that the discussion on what theoretical approach to make use of can only be taken to a certain point. Clearly, there is no thing such as “a best theory”, and instead of focusing on theories as such we should focus on theorizing, a process in which theories are a part (Weick, 1995). Weick (1989) understands theorizing as “disciplined imagination”, and theories as something that disciplines the research when it comes to focal points in his/her research. This is a pragmatic point, and one that we find valuable.

We have focused this discussion on a specific domain of this theorizing process, namely that of properly adapting social theories to inform one's research. There are several good reasons why an IS researcher should be cautious when adapting a social theory to better make sense of a phenomena at hand. The best reason is perhaps the very practical observation that any paper that does not adapt a social theory in a reflexive manner will be routinely rejected when submitted to journals (Sutton & Straw, 1995). Thus, there is a very practical reason to reflect further on proper procedures for adapting social theories to the IS discipline. In this paper, we have put forward four recommendations for theory adaptation: (1) consider the selected theory's historical context, (2) consider the selected theory's sensitivity towards details of the phenomenon under study, (3), consider how the selected theory impacts the choice of research method, (4) consider the theorizing process' contribution to cumulative theory. Of course, these recommendations should be understood as a starting point of a debate rather than as final answers.

References

- Alavi, M. Carlson, P., and Brooke, G. "The Ecology of MIS Research: A Twenty Year Status Review," the Proceedings of the Tenth International Conference on Information Systems, 1989, pp. 363-375.
- Banville, C., & Landry, M. (1989). Can the Field of MIS Be Disciplined? *Communications of the ACM*, 32(January), 48-60.
- Barley, S. R. (1986). Technology as an occasion for structuring: Evidence from observation of CT scanners and the social order of radiology departments. *Administrative Science Quarterly*, 31(1), 78-108.
- Barley, S., & Kunda, G. (1993). Design and Devotion: Surges of Rational and Normative Ideologies of Control and Managerial Discourse. *Administrative Science Quarterly*, 37, 363-399.
- Benbasat, I., and Weber, R. "Research Commentary: Rethinking "Diversity" in Information Systems Research," *Information Systems Research* (7:4), December 1996, pp. 389-399.
- Boudreau, M., Gefen, D., and Straub, D.W. "Validation in Information Systems Research: A State-of-the-Art Assessment," *MIS Quarterly* (25:1), March 2001, pp. 1-17.
- Cheon, M.J., Lee, C.C., and Grover, V. "Research in MIS-Points of Work and Reference: A Replication and Extension of the Culnan and Swanson Study," *Data Base for Advances in Information Systems Journal*, Spring 1991, pp. 21-29.
- Deetz, S. (1996). Describing differences in approaches to organization science: Rethinking Burrell and Morgan and their legacy. *Organization Science*, 7(2), 191-207.
- Giddens, A. (1979). *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis*. Berkeley, Calif.: University of California Press.
- Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity Press.
- Hirschheim, R., Klein, H. K., & Lyytinen, K. (1996). Exploring the intellectual structures of information systems development: A social action theoretic analysis. *Accounting, Management, and Information Technologies*, 6(1/2), 1-64.
- Jones, M. (1998). Information systems and the double mangle. In Larsen, T., & Levine, L. (Eds.). *Information systems: Current issues and future challenges*. (pp. 287-302). Proceedings of IFIP WG 8.2 & 8.6. Helsinki, Finland.
- Jones, M. (2000). The Moving Finger: The Use of Theory in WG 8.2 Conference Papers, 1975-1999. In R. Baskerville, J. Stage, & J. DeGross (Eds.), *Organizational And Social Perspectives on Information Technology* (pp. 15-32). Boston: Kluwer Academic Publishers.
- Keen, P.G.W. "MIS Research: Reference Disciplines and Cumulative Tradition", the Proceedings of the First International Conference on Information Systems, 1980, pp. 9-18.
- Klein, H. K., and Lyytinen, K. "The Poverty of Scientism in Information Systems," in Mumford, E., Hirschheim, R., Fitzgerald, G., and Wood-Harper A.T. (Eds.), *Research Methods in Information Systems*, North-Holland, Amsterdam, 1985.
- Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 23(1), 67-93.
- Kling, R. (1991). Computerization and social transformation. *Science, Technology, and Human Values*, 16, 3, 342-367.
- Mason, R. "Conclusions to Part II," *Proceedings of the The Information Systems Research Challenge*, Harvard University, 1984, pp. 183-188.
- Monteiro, E., & Hanseth, O. (1995). Social shaping of information infrastructure: On being specific about the technology. In Orlikowski, W. J., Walsham, G., Jones, M. R., & DeGross, J. I. (Eds.). *Information technology and changes in organisational work* (pp. 325-343). London: Chapman and Hall.
- Ngwenyama, O. "The Critical Social Theory Approach to Information systems: Problems and Challenges," In *Information Systems Research*, H. E. Nissen, H. Klein and R. Hirschheim (Ed.), Elsevier Science Publications (North Holland), Amsterdam, 1991, pp. 267-294.
- Orlikowski, W. J. (1992). The duality of technology. *Organizational Science*, 3(3), 398-427.
- Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organization: Research approaches and assumptions. *Information Systems Research*, 2(1), 1-28.
- Orlikowski, W. J., & Robey, D. (1991). Information technology and structuring of organisations. *Information Systems Research*, 2(1), 1-28.
- Rao, V. S., and Jarvenpaa, S.L. "Computer Support of Groups: Theory-Based Models For GDSS Research," *Management Science* (37:10), October 1991, pp. 1347-1362.
- Rose, J., & Truex, D. (2000). Machine agency as perceived autonomy: an action perspective. In R. Baskerville, J. Stage, & J. I. DeGross (Eds.), *IS 2000 The Social and Organizational Perspective on Research and Practice in Information Technology* (pp. 371-390). Aalborg, Denmark: Kluwer Academic Publishers.
- Robey, D., & Zmud, R. W. (1992). Research on the organization of end-user computing: Theoretical perspectives from organization science. *Information Technology & People*, 6 (1), 11-27.
- Straub, D.W., Ang, S., and Evaristo, R. "Normative Standards for MIS Research," *DATA BASE* (25:1), February 1994, pp. 21-34.

- Sutton, R. I., & Staw, B. M. (1995). What theory is not. *Administrative Science Quarterly*, 40(3 Sep), 371-.
- Truex, D., & Baskerville, R. (1998). Deep Structure or Emergence Theory: Contrasting Theoretical Foundations for Information Systems Development. *Information Systems Journal*, 8(2 April), 99-118.
- Truex, D., & Baskerville, R. (1997). *The Debate in Structural Linguistics: how it may impact the information systems field*. Paper presented at the Association for Information Systems 3rd Annual Conference of the Americas, Indianapolis, Indiana. August 14-17, 1997.
- Walsham, G. (1993). *Interpreting information systems in organizations*. Chichester: Wiley.
- Weick, K. E. (1984). Theoretical Assumptions and Research Methodology Selection, *IS Research Challenge* (pp. 111-134): Harvard University.
- Weick, K. E. (1989). Theory construction as disciplined imagination. *Academy of Management Review*, (14), 516-531.
- Weick, K. E. (1995). What theory is *not*, theorizing *is*. *Administrative Science Quarterly*, (40), 385-390.
- Yin, R. (1994). *Case study research: Design and methods (2nd ed.)*. Thousand Oaks, CA: Sage Publishing.