

# Beyond Metaphysics and Theory Consumerism

## A comment to Rose, Jones, and Truex “Socio-Theoretic Accounts of IS: The Problem of Agency”

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### 1 Introduction

Rose, Jones, and Truex (RJT) start out by making the statement that a “long-standing debate in the IS literature concerns the relationships between technology and organization.” I think they could make a stronger statement. This relationship is indeed the very core issue of IS. At the same time—and in spite of the long-standing debate—the understanding of this issue within the field is very poor. This sad fact was perfectly demonstrated by Orlikowski and Iacono (2001) in their survey of ten volumes of ISR searching for theoretical conceptions of IT—without finding it! What they argue should be the core of the IS discipline—a theoretical understanding of the key object (if not the constituting object) of our field is virtually nonexistent. Based on this finding they conclude that research aiming at developing such theories is “desperately” needed. The concept of agency, and the degree or kind of agency attributed to humans, organizations, and technologies has to be central to such an understanding of the IT artifact. Accordingly, I very much welcome the contribution of RJT and the fact that the SJIS organizes a broader debate around this

paper. And I share most of the arguments put forward in the article. But I slightly disagree on a few towards which I now turn.

## 2 On Structuration Theory

RJT claim that “the more convincing explanations [of the relationships between technology and organization] have been based on Giddens’ Structuration Theory (ST) and, more recently, on actor network theory.” I’m a bit less positive regarding the contribution of ST.

The ST approach has been picked up by a vast number of scholars and a wide range of studies have been carried out. These studies have given us many valuable insights into the social processes related to the adoption and use of IS – in particular why and how the same technology is adopted and used very differently in different organizations. The problem with ST is, as noted by RJT, the role of technology in the theory. It simply doesn’t exist. The implications of this fact are crucial. Not only does ST not help us address the key issue in the field—*it* makes us blind for it! This fact is also demonstrated by Orlikowski (2000) in her most recent writings on the issue. She tries to overcome this problem by means of a dual concept of technology: ‘Technological artifact’ and ‘technology-in-practice.’ The first “appears in our lives as a specific machine, technique, appliance, device, or gadget. At the same time, use of the technology involves a repeatedly experienced, personally ordered and edited version of the technological artifact, being experienced differently by different individuals and differently by the same individual depending on the time or circumstance. In this aspect it might be termed a *technology-in-practice*, to refer to the specific structure routinely enacted as we use the specific machine, technique, device, or gadget in recurrent ways in our everyday activities” (Orlikowski 2000, p. 408). Orlikowski says that this distinction is analytical, not ontological. She says that she believes this distinction between technologies as artifacts and the use of such artifacts is “an especially useful one in both empirical research and everyday usage” (Orlikowski 2000, note 4, p. 425). She expresses this belief without any further argument supporting it and at the same time as she accepts Grint’s and Woolgar’s (1995, p. 289) claim that “technology exists only in and through our descriptions and practices, and hence it is never available in a raw, untainted state.”

If we want to understand technology in a social context, it is exactly the relationship between what Orlikowski calls the technological artifact and the technology-in-practice we need to understand. By staying close to Giddens’ original presentation of structuration theory, she addresses only the technol-

ogy-in-practice, and can say nothing about the relationship between the two – for instance how the technology-in-practice is actually shaped by the technological artifact (and vice versa). It is this relationship that should be at the center of the field according to Orlikowski and Iacono’s call for the ‘desperate’ need for theorizing the IT artifact.

This problem is not unique to ST. In fact, most (social) theories imported into the IS field are blind when it comes to technology, a point I will return to in a later section. But first a comment on ANT.

### 3 On ANT

I see ANT as substantially different from ST and other social theories as a tool to help the IS field come to grips with its core issue simply because ANT is developed exactly to help us understand the relationships between organization and technology. To understand this relationship ANT offers us a rather rich set of concepts. I find RJT’s presentation of ANT slightly misleading. At the center of their presentation is the notion of symmetry—the idea that all kinds of elements (humans and non-humans) should be treated (analytically) in the same way. This idea (of symmetry) was central in the presentation of and discussions around ANT in the 80-ies. In challenge 3 (to those influenced by ANT), for instance, RJT say that we should “take symmetry seriously.” I would rather propose that we should forget it. (It all too easily triggers unfruitful discussions about whether humans and technologies (in the traditional sense) really are equal—which they of course are not!)

In the last 10-15 years a much richer notion of and vocabulary concerning technology and its relationships to its context has been developed. The key one is, I think, the notion of *collective*, or more precisely *hybrid collectif*.<sup>1</sup> Related terms include hybrid objects, configurations, associations, technological systems, megamachine, technoscience, etc.

Humans and technologies (in the traditional sense) are not equal or symmetrical beyond the fact that they are, when they act, parts of a hybrid collectif which should be seen as the ‘real’ actor: “Boeing 747s do not fly, airlines fly” (Latour 1999, p. 193). Humans and technologies are different—just as different humans (the CEO and truck driver in a multinational organization) and different technologies (a pen and a nuclear plant) are different.

Bruno Latour (1999) presents in the chapter on technology in *Pandora’s Hope* a long list of concepts concerning the relationship between technology and organization from the level of individual artifacts to that of the technological society as a whole (which he calls technoscience). Other ANT research-

ers, like John Law and Annemarie Mol, have zoomed in even more closely on the relationship between the social and technical. They see the concept of network as not fine grained enough to describe the complexity and nuances of this relationship. They find that the relation is better seen as larger *regions* where the social and the technical are tightly woven together, often inseparable like when we mix together *fluids*.

I firmly believe that these more recent developments within ANT, which are largely unexplored within the IS discipline, have a lot to offer to help us understand the relationships between technology and organization. But at the same time I agree completely with RJT that we need to be much more critical in the way we import and apply theories from other fields. This brings me to my third point.

## 4 On Importing and Applying Social Theories

As RJT state, the IS community has a tendency to jump on the latest fashion. We tend to be ‘theory consumers.’ We import theories from other fields and then apply them. This ‘applying’ often focuses on just demonstrating how we by means of the theory can describe various IS related phenomena. And then we move on and pick another one while forgetting what we could have learned from applying the previous one—almost like we as TV consumers move from one reality show to the next. Among the theories ‘consumed’ over the years we find labour theory and other variants of Marxism, a range of communication theories (speech acts, Habermas’ theory of communicative action, Wittgenstein’s theory of language games, etc.), institutionalism, (Heidegger’s) phenomenology, etc. A telling illustration, I think, of the way we import and apply theories is the fact that when Heidegger’s philosophy has been applied, the focus has been exclusively on his ideas about being (-in-the-world), while his philosophy of technology has been (almost) totally neglected! (For a brilliant discussion of the problems with applying theories see Latour (2004)). Our focus should, then, NOT be on applying theories from other fields, but rather on how they can help us build our own! And our own theory should—as already mentioned several times—address the relationships between technology and organization (or its broader context).

But this does not imply that we should not import and apply theories from other fields. When studying organizational phenomena, we have to draw upon knowledge about organizations from other fields. But we need to be well aware of the limits of these theories—in particular when it comes to our own

core issues. Most theories—ST is a paradigm example—contribute more to making us blind for these issues than helping us highlight them. This problem has also been pointed to by Bruno Latour (1988) when he referred to the “deepest and grandest sociologist in Britain, Mrs Thatcher, when she said “There is no such thing as a Society”.” The meaning Latour is giving this phrase is that there is no such thing as society as this term is used in social theory as if there is a society without technology. “We live in collectives, not societies.” (Latour 1999, p. 193).

When we are searching for theories outside our own field, we should look more for theories that are dealing with issues closer to our own. This includes in particular theories addressing technology. And there are many of them. And hardly any is ever mentioned in the IS literature. With the growing complexity and penetration of IT artifacts I firmly believe that Charles Perrow’s (1984) studies of various complex technological systems conceptualized in his ‘Normal Accidents Theory,’ and Langdon Winner’s (1977) analysis of ‘autonomous technology’ are highly relevant. And even more so Thomas P. Hughes’ (1983, 1987) theory of ‘Large Technological Systems.’

In his *Network of Power*, Thomas P. Hughes analyzed the development and use of electricity from 1880 to 1930 (Hughes 1983). There he describes this process as the evolution of a technological system (which is indeed socio-technical) and develops a set of more aggregated concepts, like reverse salients, technological momentum, technological style, battle of systems, etc. I firmly believe all these to be of highest relevance for IS now as information systems have evolved into large scale, complex, integrated, global structures.

Hughes developed his concept mostly in parallel with the development of the core concepts of ANT. For this reason they were for quite some time seen as rather different. The concept of momentum, for instance, was interpreted as of rather deterministic flavor—something, which ANT was developed to prove wrong. Over time, however, his concepts have been interpreted differently, and much more in line with ANT (Hughes 1987; Callon 1991). Latour (1999, p. 204), for instance, describes the technological system of electricity networks as “a ‘seamless web’ of social and technical factors so beautifully traced by Hughes.”

## **5 From Importing and Applying to Developing and Exporting**

When the term theory is used by members of the IS community, it always refers to theories within other disciplines, usually the social sciences. The term

is never used to talk about IS theories. And this makes perfect sense, of course—there is no IS theory. But this sorry state of affairs should end.

To my knowledge there is one—sort of—exception to this. The term theory has, in fact, been used in the case of what has been named ‘Coordination Theory’ (Crowston and Malone 1992). In addition, Walls et al. (1992) developed the concept of ‘design theory.’ This is a specific kind of theory aiming in particular at informing design. Walls et al. (1992) applied the concept to what they called ‘vigilant EIS.’ More recently a design theory for ‘systems that support emergent knowledge processes’ has been proposed (Markus et al. 2003). An early—and may be the most important—effort aiming at the development of a kind of IS theory is Rob Kling and Walt Scacchi’s (1982) web models of computer systems.

I think these scattered efforts aiming at theory development give us good ideas about which directions we should try moving. Kling and Scacchi’s web model is a nice proposal that should have been further developed. In fact, this model has a lot in common with ANT, so most of this model would be covered if IS theories are built on ANT as a (mere metaphysical) foundation. And ANT is indeed a superb candidate for such a foundation.

But now I will return to Hughes’ theory of ‘Large Technical Systems’ again. This theory is not only relevant for us because it informs us about relevant issues. I also believe that it is a nice model for what kind of theory we should develop. This is a theory for a specific class of phenomena, which it can explain. This is opposite to ANT. As Latour always reminds us—ANT is not a theory. It is rather an ‘actant-rhizome ontology’ (proposed by Michael Lynch, quoted in (Latour 1998, p. 19)). But as such ANT can be seen as the ontological foundation of Hughes’ theory. Further, IS is a design, or change, oriented discipline. Accordingly, IS theories should (mostly) be design theories. The main elements of such theories (as defined by Walls et al. (1992)) are a core theory and a set of design guidelines derived from this. The core theory corresponds roughly to the ordinary definition of a theory.

However, even if the IS community becomes more focused on developing its own theories, it should maintain its close contacts with other fields. But the ambitions should be raised. We should not only import theories. We should just as much aim at exporting our own. If we accept Latour’s criticism of social theories (as I do), there is a huge need for theories about societies which include technology—a theory of ‘collectives.’ And with a focus on the IT artifact the IS community should be in the very best position to contribute to the development of broader social theories of this ‘hybrid collectif.’

## Notes

1. The French term is here used also in English (Callon and Law 1995).

## References

- Callon, M., and Law, J. "Agency and the Hybrid Collectif," *South Atlantic Quarterly* (94), 1995, pp. 481–507 .
- Grint, K., and Woolgar, S. "On Some Failures of Nerve in Constructivist and Feminist Analyses of Technology," *Science, Technology and Human Values*, (20:3), 1995, pp. 286-310.
- Hughes, T. P. *Networks of Power. Electrification in western society, 1880-1930*. John Hopkins University Press, Baltimore, 1983.
- Hughes, T. P. "The Evolution of Large Technical Systems," in W. E. Bijker, T. P. Hughes, and T. Pinch (eds.), *The social construction of technological systems*, MIT Press, Cambridge, MA, 1987.
- Latour, B. "Technology is Society Made Durable," in J. Law, (ed.), *A Sociology of Monsters? Essays on Power, Technology and Domination*, Routledge, London, 1991.
- Latour, B. "Thought Experiments in Social Science: from the Social Contract to Virtual Society," 1st Virtual Society? Annual Public Lecture, 1st April 1998, Brunel University. <http://dessewffytibor.szoc.elte.hu/InfoTars/TextofBrunoLatours1stAnnualVirtualSocietyPublicLecture.htm>.
- Latour, B. "On Recalling ANT," in J. Law and J. Hassard (eds.), *Actor Network Theory and After*, Blackwell, 1998.
- Latour, B. *Pandora's Hope. Essays on the Reality of Science Studies*, Harvard University Press, Cambridge, MA, 1999.
- Law, J., and Mol, A. (eds.) *Complexities. Social Studies of Knowledge Practices*. Duke University Press, 2002.
- Markus, M. L., Majchrzak, A., and Gasser, L. "A Design Theory for Systems That Support Emergent Knowledge Processes," *MIS Quarterly*, (26:3), 2003.
- Orlikowski, W. "Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations," *Organization Science*, (11:4), 2000, pp. 404-428.
- Orlikowski, W., and Iacono, S. "Research Commentary: Desperately Seeking the 'IT' in IT Research – A Call for Theorizing the IT Artifact," *Information Systems Research*, (10:2), 2001, pp. 121-134.
- Walls, J. G., Widmeyer, G. R., and El Sawy, O. A. "Building an Information System Design Theory for Vigilant EIS," *Information Systems Research* (3:1), 1992, pp. 36-59.

