Chapter 7.13
IT Artefacts as Socio-Pragmatic Instruments:
Reconciling the Pragmatic, Semiotic and Technical

Göran Goldkuhl
Linköping University and Jönköping International Business School, Sweden

Pär J. Ågerfalk
University of Limerick, Ireland and Örebro University, Sweden

ABSTRACT

There are many attempts to explain success and failure in information systems. Many of these refer to a purported sociotechnical gap. In this article we develop an alternative approach that does not impose such a strong dichotomy, but regards social and technical rather as dimensions along which to study workpractices. The developed theory involves not only the "social" and "technical" constructs, but also other generic ones, namely "instrumental," "semiotic," and "pragmatic." We call this theory socio-instrumental pragmatism. To illustrate the theoretical concepts introduced, we use an example brought from an extensive action research study including the development of an information system in eldercare, developed through a participatory design approach.

INTRODUCTION

Development and implementation of an information system (IS) is a very demanding task, and many times the expectations from such endeavours are not met. Unexpected negative effects often arise, while anticipated positive effects fail to appear. There are many attempts to explain IS failure (and, indeed, success) in general terms. Some of them refer to a sociotechnical gap — a gap between what is socially required and what is technically feasible (e.g., Ackerman, 2000). Such explanations tend to make a sharp differentiation

between the social and the technical. For example in the sociotechnical tradition represented by Mumford and Weir (1979), there are discussions about balancing the technical system and the social system. This is built upon a view that computerised information systems are technical systems with social and organisational effects — a view that seems almost entirely to permeate mainstream IS research (e.g., DeLone & McLean, 1992, 2003; Benbasat & Zmud, 2003). This is also in line with the soft systems view that there is a "serving system" to support a "system to be served" (Champion & Stowell, 2002). There are criticisms toward such a conceptualisation. For example Nurminen (1988, p. 82) writes: "By removing the social dimension from the systems entity, we imply that the technical system is basically non-social." In the same spirit, Goldkuhl and Lyytinen (1982) suggest that the traditional view of information systems as "technical systems with social implications" should be inverted to "social systems, only technically implemented." As pointed out by Mead (1934):

"Language does not simply symbolise a situation or object which is already there in advance — it makes possible the existence or appearance of that situation or object, for it is part of the mechanism whereby that situation or object is created."

Since every IS uses language for purposes of communication and understanding (Goldkuhl & Lyytinen, 1982), what Mead claims about language also counts for information systems.

Instead of a separation into a social realm (humans acting in the IS environment) and technical realm (the IS), another approach is proposed here: using "social" and "technical" as dimensions along which to study workpractices. The theoretical way to proceed is to articulate a common theory for both the IS and its organisational context. The concepts of social and technical are however not found to be sufficient. The purpose of this article is to outline a theory appropriate for interpreta-

tion, description, explanation, and evaluation of the interaction between information systems and their organisational context. The developed theory involves not only the "social" and "technical" constructs, but also other generic ones, namely "instrumental," "semiotic," and "pragmatic." As we shall see below, these constructs are "generic" in the sense that they are not specific to any particular empirical setting, but are high-level categories useful in describing and discussing social action in relation to information systems in general. We call this theory *socio-instrumental pragmatism,* aligning with the work of Goldkuhl and Ågerfalk (2002) and Goldkuhl and Röstlinger (2003).

The article proceeds as follows. In the next section we briefly introduce some concepts of socio-instrumental pragmatism. To illustrate the use of socio-instrumental pragmatism as a theory of information systems, we use a simple example of an IS in the subsequent section. The example is brought from an extensive empirical study. This study involves an action research endeavour, including development of an IS in an eldercare setting. The IS and its supported workpractice were developed through a participatory design approach. We do not describe this case study in any detail, but use part of the developed system and the workpractice to illustrate our theoretical endeavour.

We then condense our conceptualisation of the IS and its organisational context in the following section, where important concepts are clarified and related to each other. Our contribution should be understood as a way to conceptualise the information technology (IT) artefact and its context. Hence, this article can partly be seen as a response to the requests for theorising the IT artefact as espoused by Orlikowski and Iacono (2001) and Benbasat and Zmud (2003). Those papers have given rise to quite a debate (e.g., Alter, 2003; Galliers, 2003). It is beyond the scope of our article to directly engage in this debate, although near the end, we comment on our contribution as a response to these requests for theorising the IT

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