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Ontological Problems of Pluralist Research Methodologies

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Introduction

An examination of the information systems (IS) and social philosophy literature reveals that much has been written on the relevance of different research methodologies. Within the information systems research community several authors have called for the combining of interpretive and positivist research methodologies. This is an issue which is central to research design. This paper reviews three such calls by IS researchers and argues that cross-paradigmatic research is ill-founded. An alternative, inclusive understanding of the relationships between different forms of IS research will be offered. This alternative view is based on an acceptance of different research methodologies as philosophical equals.

Philosophical Approach

This paper is founded on the four sets of assumptions related to ontology, epistemology, human nature and methodology used by Burrell and Morgan (1979) to develop their four-paradigm model of social theory. They suggest that the four paradigms are mutually exclusive in that they are based on alternative views of social reality. Burrell and Morgan's discrete paradigms have given rise to much debate on the issue of paradigm incommensurability. (DeCock et al., 1995; Deetz, 1996; Hassard, 1991; Parker and McHugh, 1991; Weaver and Gioia, 1994; Willmott et al., 1993). Deetz (1996) argues that the incommensurability debate is a non-issue. Non-positivist methodologies have been effectively marginalised when viewed by positivists from a positivist perspective. A neutral viewpoint allows interpretivist and positivist methodologies to assume status as equals. Once they are accorded equal status as different tools for different purposes, incommensurability is no longer an issue. Cross-paradigmatic research designs can then be seen in terms of failure to recognize the intrinsic worth and nature of alternative methodologies. The four sets of underlying assumptions can be used to examine research activities for consistency of approach: that is, that the epistemology, theory of human nature and methodology are consistent with the underlying ontological assumptions of the social world. "The issue of ontology lies prior to and governs subsequent epistemological and methodological assumptions" (Chua, 1986 p. 604).

Methodological pluralism has long been advocated by social science researchers. (Denzin, 1970; Webb et al., 1966) However, methodological pluralism based on different ontologies is argued by many researchers to be without sound foundation. (Cavaye, 1996; Deetz, 1996;

Hassard, 1993; Silverman, 1993, 1998) Positivist researchers "... often reduce the difference in qualitative and quantitative research to different ways to collect data and, thereby, retain the dream of triangulation as if different research programs simply provide additive insights into the same phenomenon." (Deetz 1996, p194) Different modes of research allow us to understand different phenomena and for different reasons. (Deetz 1996) The methodology chosen depends on what one is trying to do rather than a commitment to a particular paradigm. (Cavaye 1996)

Hirschheim et al. (1989, 1996) recognise intrinsic differences associated with alternative paradigms and consider them philosophical equals. They document significant practical differences in systems development methodologies that may arise from adopting each of Burrell and Morgan's four paradigms.

Calls for Methodological Pluralism in Information Systems Research

Kaplan and Duchon (1988), Lee (1991) and Gable (1994) have all called for the use of pluralist IS research methodologies incorporating both positivist and interpretive research methodologies. In the light of arguments against pluralism, their calls should be examined.

Kaplan and Duchon (1988) reported how they combined quantitative and qualitative methods in a longitudinal multidisciplinary study. They suggest that combining quantitative and qualitative methods introduces both testability and context into the research. (1988 p. 575) Knowledge gained from the qualitative collection of data was used to inform the quantitative survey. It would appear that this work was primarily focused on gaining insights that were possible using quantitative methods, and that interviews and observations were used to assist this purpose. At no time do Kaplan and Duchon (1988) appear to use or refer to paradigms or frameworks of enquiry. They are totally silent on underlying ontology. They do not consider the issue of concordance of epistemology, human nature and methodology with their ontological beliefs. They appear to adopt an epistemology if it seems right without considering the underlying ontological assumptions. Their paper does not appear to offer insights gained through qualitative research that were not later verifiable quantitatively. They also appear to equate the terms "quantitative" with "positivist" and "qualitative" with "interpretive". This is

not always necessarily so. (Denzin and Lincoln 1998) It is our contention that Kaplan and Duchon's argument for combining methods across paradigms is unsound. They have not demonstrated the effective combining of properly constituted qualitative research with traditional quantitative methodologies.

In a later paper, Lee attempts to provide . . . "a refutation to the widely held notion that the positivist and interpretive approaches are opposed and irreconcilable." and seeks to demonstrate how these two approaches to organizational research can be mutually supportive, rather than mutually exclusive. (1991 p. 342) Lee (1991) integrates the two approaches into a single framework consisting of three levels of understanding. Lee's first level is the understanding of phenomena that belongs to the observed human subjects. Lee's second level of understanding is that of the observing researcher. This understanding is the researcher's reading or interpretation of the first level, common-sense understanding. This understanding is intended to be of an interpretive nature. Lee's third level of understanding also belongs to the observer. This is an understanding that is characterized by its ability to be able to be the subject of hypothesis development and empirical testing. Lee contends that this type of 'scientific' understanding is necessary to . . . posit the existence of unobservable entities (such as social structure)" (1991 p. 351). Lee refers to these levels as the *subjective understanding*, the *interpretive understanding*, and the *positivist understanding* (1991 p. 351). Lee asserts that this framework provides for an interpretive understanding that can form the basis of a positivist understanding so that interpretive findings can be subjected to traditional positivist testing. In a similar vein to Kaplan and Duchon, Lee considers interpretive research to be something that is a precursor to positivist research. It is not considered to be an activity that can or should stand alone as a valid method of enquiry, focusing on particular aspects of phenomena. Similarly, Lee ignores the issue of ontology and the relationship between underlying ontological assumptions and epistemology. We believe Lee has not made a valid case for combining cross-paradigmatic epistemologies. Rather, he appears to be calling for careful preparation prior to undertaking positivist research.

Gable (1994) takes another approach to the question of integrating qualitative and quantitative research methodologies. He begins by arguing the strengths and weaknesses of case study and survey research. He then calls for research methodologies that integrate case study and survey methodologies. Gable states that case study methodologies have had extensive application in information systems research. He cites Yin (1994) who suggests that case studies are appropriate where the objective is to study contemporary events, and where it is

not necessary to control behavioral events or variables. He cites Van Maanen (1983) who considers that the necessary contextual understanding is unlikely to be achieved without direct or intimate knowledge of a research setting. In contrast, Gable (1994 p. 114) claims " . . . the survey approach provides only a snapshot of the situation at a certain time, yielding little information on the underlying meaning of the data. Moreover, some variables of interest to a researcher may not be measurable by this method." He also claims that survey research is . . . "inflexible to discoveries . . . made during data collection" Thus, Gable claims, survey research usually serves as a methodology of verification rather than discovery. Gable commences his call for integrating case study and survey research by citing a number of authors who have labeled survey and fieldwork in information systems research as complementary and that it is always best to use several methods of data collection " . . . to address adequately the impacts of information technology" (Gable 1994 p. 114). Gable (1994 p. 115) refers to this research strategy as having several names: "multi-method,/multi-trait (Campbell & Fiske 1959), . . . convergent validation, or what has been called "triangulation" (Webb et al. 1966)". He cites Kaplan and Duchon who claim the use of multiple methods increase the robustness of the results Gable (1994 p. 115). Gable calls for " . . . tolerance of methodological pluralism and recognition of method and personal bias" (1994 p. 115). He then follows this with a specific proposal, that of combining case studies with surveys. His stated model for integrating case study and survey research is that case studies may be used to inform a researcher who then prepares testable hypotheses that may be subjected to positivist research methods. Like others before him, Gable appears to see case study research in terms of preparing oneself to undertake the "real" research. This approach does not recognize the domain of knowledge that interpretive research opens to a researcher and that this domain is not necessarily identical to that of positivist research. It does not recognize the stand-alone contributions to knowledge that interpretive research can make that do not need validation through follow-up empirical work. Or, for that matter, contributions that, by their nature, cannot be verified by empirical work.

Relevance of Alternative Methodologies

There is a slow, but growing acceptance of research based in alternative paradigms. (Walsham, 1995; Ridley and Keen, 1998). There has been a general shift in IS research away from technological issues to managerial and organizational issues. (Keane and Parent 1998) Both quantitative and qualitative researchers are concerned to identify and elucidate human issues affecting information systems activities, however, qualitative investigators believe they can get closer to the actor's perspective than can researchers using traditional positivist methodologies.

Qualitative researchers are more likely to confront the constraints of everyday life and believe their rich descriptions of the social world are valuable. Myers (1994) and Drummond (1996) are examples of notable critical or interpretive research.

Conclusion

The three papers evaluated all appear to fail to reconcile the different underlying ontological assumptions of the methods they argue should be combined. All three papers seem not to recognize the intrinsic differences and relevance of different research methodologies. Knowledge gained by interpretive methodologies is not something that can be verified by further positivist research. Nor does it need to be; it stands on its own merit. Interpretive research has often been viewed by positivist researchers from a positivist perspective. This tends to promote a view of interpretive work as a subordinate or supporting activity; something that might be done prior to or in support of positivist research. A neutral viewpoint allows researchers to see each type of research as philosophically and logically equal. The methodology employed must match the particular phenomenon of interest. Different phenomena may require the use of different methodologies. By focusing on the phenomenon under examination, rather than the methodology, researchers can select appropriate methodologies for their enquiries.

References available upon request.