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The Interpretive Research Paradigm: A Critical Review Of Is Research Methodologies

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Abstract: ***Interpretive research is also sometimes referred to as interpretivism, qualitative research or phenomenological research. It does not rely on numerical or statistical analysis of data or evidence. Interpretivists acknowledge that their research problems exist in a social context that exists as a human construction with many attributes that cannot be quantitatively observed or measured, thus it is a reality that can only be accessed through social constructions using language, consciousness and shared meanings. Interpretive research does not predetermine dependent and independent variables but rather focuses on the involvedness of human sense-making as the circumstances emerge and thus this methodology endeavours to understand phenomena through the meanings that people assign to them through social contextualization.***

Keywords: IS, interpretivism, positivism, paradigm, methodology, Research, Interpretive

I. INTRODUCTION

Remenyi & Pather (2004) posited that interpretive approach to research is referred to as interpretivism, qualitative research or phenomenological research. They also argued that interpretivism does not rely on numerical or statistical analysis of data or evidence and also portended that this approach does not involve perfect objectives. It is believed that by carefully implementing procedures such as triangulation a large part of the bias inherent in individual researchers can be controlled. Interpretivists acknowledge that their research problems exists in a social context and that the social world is accepted to be a human construction with many attributes that cannot be quantitatively observed and measured, therefore, access to reality is only through social constructions such as language, consciousness and shared meanings (Remenyi & Pather, 2004; Boland, 2004).

II. PRINCIPLES FOR INTERPRETIVE RESEARCH

Klein & Myers (1999) presented the following as the summary of principles for interpretive field research; these are: first, the fundamental principle of the hermeneutic circle; second, 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, third, the principle of contextualization; 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, fourth, the principle of interaction between the researchers and the subjects; requires critical reflection on how the research data were socially constructed through the interaction between the researchers and participants.

Fifth, the principle of abstraction and generalization; that requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical general concepts that describe the nature of human understanding and social action, six, the principle of dialogical reasoning, requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings with subsequent cycles of revision, seven, the principle of multiple interpretations; requiring 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, and lastly, the principle of suspicion; that requires sensitivity to possible biasedness and systematic distortions in the narratives collected from the participants.

III. INTERPRETIVE METHODOLOGY IN IS RESEARCHES

Interpretive methods of research in IS are meant to produce an understanding of the *context and* the *processes* of the information systems whereby the information system influences and are influenced by the context (Walsham 1993). Pather & Remenyi (2004) argues that phenomenological research does not rely on numerical or statistical analysis of data or evidence and do not suggest that research can be perfectly objective, albeit through carefully implementing procedures such as triangulation a large part of the bias inherent in individual researchers can be controlled.

Rowland (1995), from an interpretive perspective, usefully argues that any research study reflects a particular worldview composed of at least three philosophical layers—ontological beliefs, epistemological assumptions and methodological choices: Ontological beliefs; are our beliefs regarding reality - or what it is, epistemological assumptions; are our assumptions regarding how we come to know about our world, i.e. our sources of knowledge, or how we make sense of reality, and methodological choices; which are the means we choose in attempting to achieve desired ends. Particular ontological beliefs lead us to make particular epistemological assumptions, that is, our explanations of how people come to know about the world depend on what we believe the world to be. Likewise, particular epistemological assumptions lead us to choose certain methodologies over others. We choose to carry out activities that fit within how we assume humans come to know (Rowland, 1995)

Rowland's (1995) explanation of the research process is similar to that for the realist except for the fact that it emphasises epistemology in preference to ontology. For the realist ontological beliefs are of more immediate concern than epistemological assumptions. In order to develop the research process the first and foremost target is to define what reality is seen to be as this then directs us towards how we look at it (methodological choices) and impacts on models for how we make sense of it (epistemological assumptions). According to Pather & Remenyi (2004), there is increasing interest in interpretivism among the information systems research community as it attempts to address complex issues related to management, organisation and individual behaviour.

IV. COMPARING AND CONTRASTING: INTERPRETIVISM AND OTHER METHODOLOGIES

Different researchers did some comparison and also contrasted interpretivism with the other methodologies, such as positivism; they put across the following observations; Firstly, Pather & Remenyi (2004) aver that whereas positivism emphasizes the similarities between the object of the natural and social sciences the interpretivist tradition emphasises the differences between them. Interpretivists acknowledge that their research problems exists in a social context and that the most appropriate way of understanding actions of social actors may not necessarily be through numbers and rigorous statistical tests.

Secondly, Roode (2003) asserts that the interpretivist researcher recognizes that many important problems related to the development, use and implementation of Information Systems intimately concern people and accepts that the social world presents a better stage to study these phenomena than the purely material world of technology. Moreover, this social world is accepted to be a human construction with many attributes that cannot be quantitatively observed and measured, and the interpretivist therefore, deliberately sets out subjectively to understand these constructs, often through active involvement, and never so-called objective, independent observation. Hence, understanding is the main role of the interpretivist and never prediction.

Thirdly, Miles and Huberman (1994) describe their critical realist approach as a qualitative analysis that incorporates an interpretive element. The authors concurred with the interpretivists view that knowledge is a social and historical product and that knowledge is adduced within certain established theories theory. They affirmed the existence and importance of the subjective, the phenomenological, and the meaning-making approaches as being at the centre of social life. Miles and Huberman aimed at transcending interpretive elements by building theories that are testable in diverse disciplines and thus can be used to account for the real world situations that are both bounded and perceptually laden. Fourthly, Pather & Remenyi (2004) protended that critical social scientists accept the truths of both positivism and interpretivism, that is, they accept the need for both causal theories based on objective observation and interpretive descriptions based on inter-subjective understanding, however, their approach to research vehemently refutes that a researcher can be objective.

Fifthly, according to Orlikowski and Baroudi (1991), epistemologically positivist studies are premised on the existence of a priori fixed relationships within phenomena capable of being identified and tested via hypothetic-deductive logic and analysis, and therefore, the causal relationships that are the basis for generalized knowledge can predict patterns of behaviour across situations. Furthermore, positivist researchers are believed to be impartial observers who can evaluate and predict actions or processes objectively. The criteria for judging the quality of such positivist studies as opposed to the interpretive and critical case studies, involve the traditional validity and reliability tests used in the natural sciences (Yin, 2003). Sixthly, Archer (1995) argued that social ontology plays a powerful regulatory role vis-`a-vis the explanatory methodology for the basic reason that it conceptualises social reality in certain terms, such that it helps identifying what there is to be explained and also ruling out explanations in terms of entities or properties which are deemed non-existent. Such consistency between the social ontology and explanatory methodology is a general requirement usually requiring two-way adjustment. This two-

way adjustment requires a contingent ontology or philosophy in order to work.

Seventhly, Pather & Remenyi (2004) says critical realism draws on concepts and tools from positivism, interpretivism and critical theory that assist the researcher to answer his or her research question. Mingers (2002) posits that *realist* understanding of science takes the view that certain types of entities - be they objects, forces, social structures, or idea - exist in the world, largely independent of human beings, and that through research we can gain reliable knowledge of them. Lastly, according to Pather & Remenyi (2004) critical realism is a relatively new philosophy that antedates critical theory and post-modernist theory and together with them provides a response to the "crisis of positivism" (Bhaskar, 1991). Hence, critical realism offers a way of bridging the gap which sometimes exists between positivistic and interpretivist researchers and this is especially valuable in IS research where both these groups are strongly represented.

V. DETAILED ANALYSIS OF THE DIFFERENT CHARACTERISTICS OF RESEARCH METHODOLOGIES

The task is complicated by the many different distinctions that can be applied to research methods. In particular: *Underlying paradigm*: research methods develop within a particular paradigm, though the relationship between the two has not been clearly established. There exists several varying ways of delineating current paradigms and research methods and thus a research method is not fixedly linked to a single paradigm. However, for the purpose of understanding the general orientation of a research method and its basic assumptions it is useful to classify them under a particular paradigm, either positivist, interpretive, or intervention oriented. The latter is characterized by research methods that intrinsically bring about change to the research situation (Mingers, 2001a).

QUALITATIVE VS. QUANTITATIVE: this is a commonly used distinction and there has been a tendency to link quantitative methods with a natural science or positivist approach, and qualitative methods with a social science or interpretive approach. There are two problems with this crude dichotomy. First, the distinction properly applies to the nature of data rather than the research method (Yin, 1989), whereby quantitative data conform to interval or ordinal scales and result from processes of measurement or counting, whereas qualitative data are essentially linguistic or pictorial representing *meanings*. Particular research methods, for example, case studies, questionnaires, or interviews, may well generate both types of data. Second, there tends to be a belief that the two cannot be mixed because of their underlying paradigms and yet the current view within social research is that the two are mutually informing (Bryman, 2001). *Nomothetic vs. ideographic:* this distinction relates to the form of knowledge generated from the research. Nomothetic is concerned with the discovery of general laws and implies that the particular research examples are selected to be representative of a wider population (Morrow & Brown, 1994). This is generally associated with positivism and with research methods that produce statistically generalizable data. Ideographic research on the other hand is concerned with understanding the particular situation or process being researched in depth (Tsoukas, 1989). It is associated with interpretivism and some forms of case study research. The results may be generalizable to the extent that the situation is similar to others.

INTENSIVE VS. EXTENSIVE: this distinction is related to those just described, but is to be preferred to the qualitative/quantitative one (Sayer, 1992). Extensive research involves gathering relatively superficial or thin information about a large number of cases. The aim is to be able to make empirical generalizations about a relatively small number of variables. In contrast, intensive research is the in depth study of a small number of cases. The aim is to generate understanding of the particular causal structures and meaning systems at play. Moreover, the two should be seen as complementary rather than antagonistic. *Data driven vs. theory driven:* a final distinction is between researches that are data driven, where the data are approached without specific theories or hypotheses, and that which is theory driven, the data being seen as a way of confirming or even challenging the existing theories. The data concerned could be quantitative or qualitative in both cases. For example, data mining and grounded theories are, respectively, quantitative and qualitative data driven methods (Miles & Huberman, 1994).

A. METHODS TYPIFYING POSITIVIST RESEARCH

Ontologically, positivist research assumes *"an objective physical and social world that exists independent of humans, and whose nature can be relatively unproblematically apprehended, characterized, and measured"*, this statement is in congruence with the generally acceptable believe that IT units in organizations do have a structure and reality beyond the actions of their operators. The focus of positivist research entails discovering objectively the dimensions of reality that interest them by developing measures and models capable of detect those dimensions (Orlikowski & Baroudi, 1991). Therefore, epistemologically, positivism is based upon capability to identify and test the existence of priori fixed causal relationships and patterns of behaviour within phenomena and across situations, through analysis of hypothetically deductive logics. The criteria for judging the quality of positivist studies as compared to interpretive or critical case studies relate to the traditional validity and reliability tests used in the natural sciences [Yin, 2003]. In positivist social science prejudice or prejudgement can be a source of bias and thus a hindrance to true knowledge. Objectivity therefore can be best attained if a social scientist adopts a value-free and unbiased position. By contrast, hermeneutics recognizes that prejudice is the necessary starting point of our understanding, however, the critical hermeneutics helps distinguishing true prejudices through which we gain valuable understand from the misguided and falsified prejudices which may lead to misunderstanding of phenomena (Gadamer, 1976b, p. 124).

OBSERVATION, MEASUREMENT AND STATISTICAL ANALYSIS; It includes internally or externally published data and direct observation, recording or measurement. It also

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includes the analysis of such data whether they are simple summary statistics or complex forms of multivariate analysis. The data are generally quantitative. *Survey, questionnaire, or instrument;* includes all forms of data production involving the circulation of a pre-structured set of questions no matter how administered. The recipients are generally viewed as a sample of a wider population. Surveys shade into observation and measurement when the questions largely result in numerical answers and into structured interviews when they are administered face-to-face and allow open-ended responses. The category includes any statistical analysis of the results. *Experiments;* this category includes both laboratory and field experiments. An experiment is defined to be an artificially generated situation involving the deliberate manipulation of certain conditions potentially relevant to the outcome. The classification includes any statistical analysis of the results.

SIMULATION; this category involves the artificial production of data in such a way that it is representative of some aspects of a relevant real situation. It is related to experiments in that experimental design can be used in the generation and analysis of results. *Case study;* Yin (1993) distinguishes a case study from other intensive methods such as ethnography and grounded theory and argues that it is really just a specific data-collection method within positivism. Case study research often encompasses other methods such as interviews and questionnaires.

B. METHODS TYPIFYING INTERPRETIVE RESEARCH

Interviews; the essence of an interview is a real-time conversation between researcher and respondent to discover the respondent's personal views. They range from structured interviews with a fixed set of questions through to unstructured, open-ended discussions. They can also involve several people as in focus groups. *Qualitative content analysis;* content analysis concerns the analysis of texts for the occurrence of specific categories or terms, whilst quantitative content analysis is a positivistically oriented approach that uses predefined categories and assumes the independence of the researcher from the analysis. In contrast, qualitative content analysis derives its categories from the material itself in a more interpretive manner, recognizing the role of the analyst in doing this (Bryman, 2001). This category can fall under grounded theory and ethnography.

Ethnography/hermeneutics; Harvey & Myers (1995) argue that Ethnography is the description of a particular culture in its own terms. It involves the researcher immersing themselves in the language, practices, and values of a particular organization. The aim is to be able to understand what happens through the eyes of the people involved. A variant is hermeneutics (Myers, 1994) which is particularly concerned with interpreting textual material. This category can overlap with participant observation and with critical theory when it adopts a critical rather than purely descriptive perspective. *Grounded theory;* this is the name for a general approach, originally developed by Glaser & Strauss (1967), for developing theory from, or grounded in, empirical social research (Strauss & Corbin, 1994). The approach uses data from a range of sources - including quantitative - in order to generate theories that plausibly explain relationships among the concepts within the data. It is distinguished from a positivistic approach to data analysis in that it does not accept an independent, pre-existing reality about which truth can be discovered. Rather social theories are always interpretations and truth is enacted. *Participant observation;* this is a development of ethnography where the researcher actually becomes an active participant in the situation, usually, but not always, without the knowledge of the other people involved. It is common to distinguish degrees of involvement (Gold, 1958): complete participant, participant-as-observer, observer-as-participant, complete observer, the latter essentially being pure ethnography.

C. METHODS INVOLVING INTERVENTIONS

ACTION RESEARCH; in action research the researcher explicitly becomes involved in intervening in the situation and attempting to bring about change. It is distinguished from consultancy in that the researcher enters the situation with particular theoretical or methodological tools and then uses the process and results of the intervention to evaluate the theory or method (Checkland & Holwell, 1998b). *Critical theory;* this is a broad theoretical orientation that has particular implications for research methods. General themes are a strong belief in linking theory and practice, with research being grounded in practice and an acceptance of different, complementary, and theoretical domains and hence research methods (Morrow & Brown, 1994). This category also includes a philosophical position known as critical realism (Bhaskar, 1978; Archer *et al.*, 1998) that also licenses a pluralist position on research methods (Sayer, 1992).

	Background Paradigm	Qualitative (QL)/ quantitative (QN)	Nomothetic (N)/ ideographic (I)	Intensive (I)/ extensive (E)	Theory (T)/ data driven (D)
Observation	Positivism	QN	N	E	D or T
Survey	Positivism	QN and QL	N	E	D or T
Experiment	Positivism	QN	N	E	T
Simulation	Positivism	QN	N	E	T
Case study	Positivism/ Interpretivism/ Intervention	QN and QL	I	E or I	T or D
Interviews	Positivism/ interpretivism/ intervention	QL	I	I	T or D
Qualitative content analysis	Interpretivism	QL	I	E or I	D
Ethnography/hermeneutics	Interpretivism	QL	I	I	D
Grounded theory	Interpretivism	QL	I	I	D
Participant observation	Interpretivism	QL	I	I	D
Action research	Positivism/ interpretivism/ intervention	QN and QL	I	I	T
Critical theory	Intervention	QN and QL	N and I	E and I	T
Consultancy	Positivism	QN and QL	I	E and I	T and D

Source: Klein & Myers (1999): Information Systems Journal
Figure 1: Summary of the Characteristics of research methodologies

VI. CONCLUSION

IS research can be classified as interpretive if it is assumed that our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools, and other artefacts. Interpretive research does not predefine dependent and independent

variables, but focuses on the complexity of human sense making as the situation emerges (Kaplan and Maxwell 1994); it attempts to understand phenomena through the meanings that people assign to them (Boland 1985)

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