1991

A WORKSHOP ON TWO TECHNIOUES FOR OUALITATIVE DATA ANALYSIS: ANALYTIC INDUCTION AND RERMENEUTICS

Wanda J. Orlikowski
Massachusetts Institute of Technology, USA

Follow this and additional works at: http://aisel.aisnet.org/icis1991

PANEL 3

A WORKSHOP ON TWO TECHNIQUES FOR QUALITATIVE DATA ANALYSIS: ANALYTIC INDUCTION AND HERMENEUTICS

Panel Chair: **Wanda J. Orlikowski**, Massachusetts Institute of Technology, USA

Panelists: **M. Lynne Markus**, University of California, Los Angeles, and The Claremont Graduate School, USA
Allen S. Lee, University of Cincinnati, USA

Numerous innovative techniques for qualitative data analysis have been emerging and receiving serious consideration in IS research. Among them are analytic induction, hermeneutics, ethnography, participant observation, content analysis, grounded theory, case studies, and action research.

Often labeled "qualitative," "interpretive," "nontraditional," or "intensive," the emerging techniques cover the range of both traditional and interpretive science. In this session, "traditional science" refers to "theoretical" knowledge, that is, formal statements about independent variables, dependent variables, and the relationships among them. "Interpretive science" refers to mutual understanding, namely, the understanding that a person (such as a researcher) forms of the understanding held by another person (such as a research subject), the intersubjective understanding held by a group, or any other understanding that is present in a socially constructed reality. The qualitative data analysis technique that we select for examination from the realm of traditional science is analytic induction; and from the realm of interpretive science, hermeneutics.

The long range purpose of this session is to help participants acquire some "how to" skills that they can try out at home on their own research projects. The session will be conducted as a workshop, giving descriptions of each technique and providing a "walk through" of each technique in one or two examples (using actual research studies as illustrations). The examples will be selected to illustrate different facets of the technique, to identify special issues in using the technique with IS subject matter, and to elucidate the technique's contributions to IS research.

Wanda J. Orlikowski will begin the session by briefly describing the underlying motivation for the emergence of the two research techniques. She will then introduce the two workshop presenters.

M. Lynne Markus will examine analytic induction as a technique for categorizing and coding qualitative data (e.g. interview notes, open-ended responses to questionnaire items, notes from observations in natural settings, archival documents, and other forms of textual data). Categorizing and coding such data play an important role in the "traditional science" end of the qualitative research spectrum. Markus' discussion of categorizing and coding data through analytic induction will cover the following concepts: assumed or deduced categories (which come from a priori theoretical frameworks); grounded or induced categories (which emerge from the textual materials themselves); open coding (where the researcher develops categories as she codes); closed coding (where the researcher applies a set of categories fully articulated at the outset); unit of analysis (which could be concrete or conceptual); and procedures for ensuring or assessing validity and reliability (which depend on the research goal: hypothesis verification, hypothesis generation, or grounded theory generation).

Markus will provide citations to exemplary studies and the "how to" literature on categorizing and coding qualitative data. She will also draw on her own research experience to illustrate analytic induction. One example involves the use of open-ended questionnaire items in an effort to test for differences between two organizations in people's use of alternative communication technologies. If time permits, she will discuss another example, involving transcribed interview notes from seven focus groups on people's use of electronic mail.

Allen S. Lee will examine hermeneutics, a technique from the "interpretive science" end of the qualitative research spectrum. Interpretation is essential to information systems. It is routine for an information system developer to form an understanding of information system users, including their information requirements. It is also routine for an information-system researcher to form an understanding of information system users and developers. Both instances

involve, among other things, the interpretive activity in which a person forms an understanding of another person's understanding. Lee will present a qualitative technique, derived from hermeneutics, for guiding interpretation. The technique, in building upon a natural interpretive procedure already practiced by a wide audience (i.e., the activity of reading a text), will be presented as non-esoteric and readily accessible.

Lee's examination will cover the following concepts: authorial intention; text and text analogues; context; appropriation; the hermeneutical circle; and the double hermeneutic. He will conduct a "walk through" of how to employ the technique, using one or two examples selected from the following: Michael Newman's "Designing a Centralized Admissions System in a Loosely-Coupled Organization: An Episode in Screen Design" in *Office, Technology & People*, Volume 4, Number 1, 1989, 53-73; Richard Boland's "Information Systems Use as a Hermeneutic Process" in *The Information Systems Research Arena for the 90's* (North Holland, edited by Rudy Hirschheim, Hans-Erik Nissen, and Heinz Klein, 1991); and "A Framework for Diagnosis of an Information System Failure: A Framework and Interpretive Process" by Gordon B. Davis, Allen S. Lee, Kathryn R. Nickles, Sanjay Chatterjee, Robert Hartung, and Youlan Wu (MISRC Working Paper 91-06, University of Minnesota, November 1990).

Participants should leave the workshop with sufficient knowledge and confidence to begin exploration of the two techniques on their own. To encourage the dissemination and practice of the techniques, we will provide handouts for participants, including summaries of key concepts, transparencies, bibliographies, and feedback forms. Based on participants' reactions on the feedback forms, we will plan to organize workshops on other innovative techniques (for example, ethnography and action research) at future ICIS conferences.

Orlikowski's introduction to the research context of the two techniques will take ten minutes; Markus' examination of analytic induction, thirty minutes; Lee's examination of hermeneutics, thirty minutes; and questions from the audience, twenty minutes.

PANEL 4

DOES INFORMATION TECHNOLOGY MAKE THE STOCK EXCHANGE TRADING FLOOR OBSOLETE?

Panel Chair: Henry C. Lucas, Jr., New York University, USA

Panelists: R. Steven Wunsch, Wunsch Auction Systems, Inc., USA
James L. Cochrane, New York Stock Exchange, Inc., USA
Raymond Killian, Jefferies and Company, USA

R. Steven Wunsch, President and CEO, Wunsch Auction Systems, Inc.

Trading floors are likely to disappear because they centralize trading too well for dealers and not well enough for investors. Traditional continuous dealing will go upstairs because the dealers who benefit from fragmentation and control the structure of continuous dealing prefer the reduced efficiency of OTC structures to the central floor. Call markets, which bypass dealers, can achieve the full temporal and spatial centralization investors prefer only through automation. Thus, automation takes investors two steps forward with the call market and only one step backward with the OTC market.

James L. Cochrane, Senior Vice President, New York Stock Exchange, Inc.

All equity markets can be placed into one of three categories. The first type is a physically convened auction. There are many variations: The Tokyo and Toronto floors do not operate exactly the same as the New York Stock Exchange floor; but, when you start sifting through what is really happening in each, there are no fundamental differences. Secondly, many equity markets are dealer markets, linked by screens and telephones: NASDAQ is the variant in the US; SEAQ is Britain's. Finally, there are computerized matching systems — the first was the Toronto CATS system — and these types of systems have proliferated to many parts of the world.

What is the role of technology in each of these three systems? In each of these three approaches current and anticipated technology is accompanied by certain advantages and disadvantages. What are the advantages and disadvantages in each system and how should we think about them?

Raymond Killian, Senior Managing Director, Jefferies and Company

The role of technology and the need for a trading floor can be viewed through three questions.

1. Is the central market place a series of electronic links as opposed to a trading floor?
2. Is liquidity reduced by alternative trading systems or has it simply changed its address?
3. How can technology aid the investor in finding liquidity and reducing market impact and transaction costs?