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INVESTIGATING INFORMATION SYSTEMS WITH ETHNOGRAPHIC RESEARCH

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TUTORIAL

INVESTIGATING INFORMATION SYSTEMS WITH ETHNOGRAPHIC RESEARCH

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ABSTRACT

Ethnographic research is one of the most in-depth research methods possible. Because the researcher is at a research site for a long time - and sees what people are doing as well as what they say they are doing – an ethnographer obtains a deep understanding of the people, the organization, and the broader context within which they work. Ethnographic research is thus well suited to providing information systems researchers with rich insights into the human, social, and organizational aspects of information systems. This article discusses the potential of ethnographic research for IS researchers, and outlines the most important issues that need to be considered in selecting this method.

KEYWORDS: Ethnography, research methods, qualitative research, interpretive research, intensive research, information systems

I. INTRODUCTION

In Information Systems we have reached the stage where many different research methods and approaches (e.g., quantitative or qualitative, positivist or interpretive) are accepted as appropriate for our field. As Markus [1997]

commented, the “war” between the qualitative and quantitative is over. Today, IS journal editors are happy to accept articles using any research method or approach, as long as the research itself is of sufficient quality and makes a worthwhile contribution.

This new environment means that IS researchers now have a wide selection of research methods from which to choose. This choice is particularly daunting for doctoral students (and the faculty members who have to supervise them). Clearly, it is important for anyone considering employing a certain research method to be aware of the potential benefits and risks beforehand, and to know in which set of circumstances it might – or might not – be appropriate.

The purpose of this article, therefore, is to help IS researchers to evaluate the potential of one particular research method for IS research, that of ethnography. This paper is a tutorial in ethnographic research in information systems. It attempts to outline the most important issues that should be considered before using ethnography to study information systems phenomena. It also gives some practical guidance. This article should be especially useful to IS doctoral students and to faculty who supervise such students. I hope that some will become enthused about ethnographic research and will start to use it, while others will become sufficiently interested so as to want to investigate this method further.

This paper is organized into eight sections. Following this introduction, Section 2 defines ethnography. Section 3 discusses the benefits and limitations of ethnography. Section 4 outlines the various types of ethnography. Section 5 offers some practical guidance for those considering doing ethnography, while Section 6 includes suggestions on writing up ethnographic studies. Section 7 discusses how manuscripts based on the use of ethnographic fieldwork can be evaluated. The final section is the conclusion.

II. DEFINING ETHNOGRAPHY

Ethnographic research comes from the discipline of social and cultural anthropology where an ethnographer is required to spend a significant amount of

time in the field. Ethnographers immerse themselves in the life of people they study [Lewis, 1985] and seek to place the phenomena studied in their social and cultural context. Given that much recent IS research focused on the social and organizational contexts of information systems [Avison et al., 1993, Lee et al., 1997, Ngwenyama et al., 1999, Nissen et al., 1991], ethnographic research emerged as one important means of studying these contexts [Harvey and Myers, 1995, Myers, 1997a, Prasad, 1997].

The main difference between case study research and ethnographic research is the extent to which the researcher immerses himself or herself in the life of the social group under study. In a case study, the primary source of data is interviews, supplemented by documentary evidence such as annual reports, minutes of meetings and so forth. In an ethnography, these data sources are supplemented by data collected through participant observation. Ethnographies usually require the researcher to spend a long period of time in the “field” and emphasize detailed, observational evidence [Yin, 1994].

The difference between a case study and an ethnography can be illustrated from the IS research literature. The case study method was used by Walsham and Waema [1994], who studied a building society in the United Kingdom. The principal method of data collection was in-depth interviews with a range of organizational participants. The researchers did not use participant observation. The ethnographic research method was used by Orlikowski [1991] who studied a large, multinational software consulting firm over eight months. Data was collected via participant observation, interviews, documents, and informal social contact with the participants.

In recent years a growing number of information systems researchers recognized the value of the ethnographic method for information systems research [Harvey, 1997, Harvey and Myers, 1995, Lee, 1991, Myers, 1997a, Myers, 1997b, Pettigrew, 1985, Wynn, 1991]. Some of the early ground-breaking work was done by Wynn [1979] in her study of office conversations, Suchman [1987] in her study of the problem of human-machine communications, and

Zuboff [1988] in her study of the automating and 'informating' potential of information technology.

Since then ethnography has become more widely used in the study of information systems in organizations, including the development of information systems [Myers and Young, 1997, Orlikowski, 1991, Preston, 1991, Suchman, 1995], the management of information systems [Davies, 1991, Davies and Nielsen, 1992] and their impact [Randall et al., 1999]. Ethnography is also discussed as a method whereby multiple perspectives can be incorporated in systems design [Holzblatt and Beyer, 1993].

In the design and evaluation of information systems, some very interesting collaborative work involves ethnographers, designers, IS professionals, computer scientists and engineers [Star, 1995]. For example, one of the projects of the group at Lancaster University used the ethnographic method to understand human cooperation in air traffic control [Bentley et al., 1992, Hughes et al., 1992].

III. THE BENEFITS AND LIMITATIONS OF ETHNOGRAPHY

Like any other research method, ethnography has its benefits and limitations. The main benefits and limitations of ethnography are discussed in this section.

BENEFITS

One of the most valuable aspects of ethnographic research is its depth. Because the researcher is "there" for an extended period of time, the ethnographer sees what people are doing as well as what they say they are doing. Over time the researcher is able to gain an in-depth understanding of the people, the organization, and the broader context within which they work. As Grills [1998b] points out, by going to "where the action is," the field researcher develops an intimate familiarity with the dilemmas, frustrations, routines, relationships, and risks that are part of everyday life. The profound strength of

ethnography is that it is the most “in-depth” or “intensive” research method possible.

Furthermore, knowledge of what happens in the field can provide vital information to challenge our assumptions. Ethnography often leads the researcher to question what we “take for granted.” For example, Hughes et al. [1992] showed how their ethnographic studies led them to question some widely-held assumptions about systems design. They found that the information provided by the ethnography provided a deeper understanding of the problem domain and that conventional principles normally thought of as ‘good design’ could be inappropriate for cooperative systems. Likewise, Orlikowski’s [1991] ethnographic research showed how the use of new information technology led to the existing forms of control in one professional services organization being intensified and fused. These findings went against much of the IS research literature at that time which assumed that information technology would transform existing bureaucratic organizational forms and social relations.

LIMITATIONS

One of the main disadvantages of ethnographic research is that it takes a lot longer than most other kinds of research. Not only does it take a long time to do the fieldwork, but it also takes a long time to analyze the material and write it up. For most people, this extra time means that probably the best time to do ethnographic research is during one’s doctoral studies (although I am aware of at least two people in IS who started their ethnographic research afterwards). Although ethnographic research is very time consuming, it is nevertheless a very ‘productive’ research method considering the amount and likely substance of the research findings. As an example, Zuboff’s book [1988] on the *Age of the Smart Machine* is regarded by many as one of the most insightful books ever written about the relationship between information technology and organizations.

Another disadvantage of ethnographic research is that it does not have much breadth. Unlike a survey, an ethnographer usually studies just the one organization or the one culture. In fact this limitation is a common criticism of

ethnographic research - that it leads to in-depth knowledge only of particular contexts and situations. Some go further and argue that it is impossible to develop more general models from just one ethnographic study.

Whilst I agree with the first criticism, I take issue with the second. This latter criticism can be answered in one of two ways. First, the lack of generalizability is more of a limitation due to the novelty of the approach in the field of information systems research than it is a limitation per se. Over time, as more ethnographies are completed, it might be possible to develop more general models of the meaningful contexts of various aspects of information systems development and application. Second, just as it is possible to generalize from one case study to theory [Walsham, 1995, Yin, 1994], so it is possible to generalize from one ethnography to theory. The arguments made in favor of generalization from case studies apply equally well to ethnographies [see also Klein and Myers, 1999].

IV. TYPES OF ETHNOGRAPHY

Although all ethnographic research is similar in the sense that the ethnographer is required to spend a significant amount of time in the field, many different schools or types of ethnography exist [see Clifford and Marcus, 1986, Van Maanen, 1988]. Sanday [1979] divides ethnography into the holistic, semiotic, and behavioristic schools of thought, and she further divides the semiotic school into thick description and ethnoscience. Each school of thought approaches ethnography differently.

For example, most ethnographers of the holistic school say that empathy and identification with the social grouping being observed is needed; they insist that an anthropologist should 'go native' and live just like the local people [e.g. Evans-Pritchard, 1950]. The assumption is that the anthropologist has to become like a blank slate in order fully understand local social and cultural practices. The

anthropologist acts like a sponge, soaking up the language and culture of the people under study [Harvey and Myers, 1995].

On the other hand, Clifford Geertz, the foremost exponent of the 'thick description' (semiotic) school, says that anthropologists do not need to have empathy with their subjects [Geertz, 1973, Geertz, 1988]. Rather, the ethnographer has to search out and analyze symbolic forms - words, images, institutions, behaviors - with respect to one another and to the whole that they comprise. Geertz argues that it is possible for an anthropologist to describe and analyze another culture without having to empathize with the people. He says that anthropologists need to understand the 'webs of significance' which people weave within the cultural context, and these webs of significance can only be communicated to others by thickly describing the situation and its context [Harvey and Myers, 1995].

Yet another approach is called "critical ethnography." Critical ethnography sees ethnographic research as emergent process, involving a dialogue between the ethnographer and the people in the research setting. Critical ethnographers also tend to "open to scrutiny otherwise hidden agendas, power centers, and assumptions that inhibit, repress, and constrain. Critical scholarship requires that commonsense assumptions be questioned" [Thomas, 1993, pp. 2-3].

V. DOING ETHNOGRAPHY

As we have just seen, there are various approaches to doing ethnographic research. At the one extreme are the more positivistic researchers who see ethnography as a way of describing the real world. An example of this kind of approach is Ellen [1984], who discusses various approaches to doing ethnographic research, preparation for fieldwork, the fieldwork experience, ethical issues, and writing up. At the other extreme are post-modern ethnographers, who treat the writing up of ethnography as akin to writing a novel

[Harvey, 1997]. Somewhere in between lie the majority of anthropologists, who see ethnography as both a method and a genre [Atkinson, 1990].

Given the many excellent books which give practical guidance with regard to the doing of ethnography [e.g. Atkinson, 1990, Ellen, 1984, Fetterman, 1998, Grills, 1998a, Hammersley and Atkinson, 1983, Thomas, 1993], I will focus on just a few practical issues here.

First, as a general rule ethnographers should write up their field notes on a regular basis. These notes can include observations, impressions, feelings, hunches, and questions which emerge. Hammersley and Atkinson [1983] say “It is difficult to overemphasize the importance of meticulous note taking. The memory should never be relied upon, and a good maxim is ‘If in doubt, *write it down.*’ It is absolutely essential that one keep up to date in processing notes” (p. 150). I heartily agree with this advice. In fact I have always found it extremely valuable to be able to go back over my field notes later to see what I was thinking at the start. I have often found that what I considered "strange" or unusual at the start was no longer so at the end. It is good practice to keep a careful record of one's field notes, otherwise it is easy to forget what it was that was so interesting to start with.

Another general rule is that an ethnographer should write up an interview as soon as possible. I agree with Patton [1990], who suggests the same day as the interview itself. Speed is perhaps not quite so important if the interview were taped, but even so writing a brief summary of the interview is a good idea. If you leave it any longer than one day, then the mind quickly forgets all the details.

Third, I believe it is important for ethnographers to regularly review and develop their ideas as the research progresses. Hammersley and Atkinson [1983] suggest the use of analytic memos. They describe these memos as “periodic written notes whereby progress is assessed, emergent ideas identified, research strategy is sketched out, and so on. It is all too easy to let one's field notes, and other types of data, pile up day by day and week by week . . . it is a grave error to let this work pile up without regular reflection and review” (p. 164).

Lastly, since an ethnographer ends up with a huge amount of data, the researcher must develop strategies to deal with this right from the start. At every step of the way the ethnographer should be summarizing, indexing and classifying the data as appropriate. One way is to use one of the many software tools available for the analysis of qualitative data.

VI. WRITING UP ETHNOGRAPHY

Just as there are many different approaches to doing ethnography, so there are many different writing styles, from realist through to impressionist and confessional styles [Van Maanen, 1988]. Within anthropology and sociology, there is probably as much emphasis on the writing up of ethnography as there is on fieldwork [Atkinson, 1990, Clifford, 1988, Clifford and Marcus, 1986, Van Maanen, 1988].

One reason for this emphasis on writing is that an ethnographer, by definition, is someone who “writes about people.” An ethnographer has to make many decisions about how the story will be told [Grills, 1998a].

For writing up qualitative research in general, Wolcott's [1990] book offers many practical suggestions. In the discussion which follows, I will focus on just one main issue, viz. the difficulty that IS ethnographic researchers experience in publishing their work in journal articles.

As a general rule, a book is regarded as the defining publication for an ethnographer within the discipline of anthropology. Realistically, a book is the only place where an author can convey the richness of the "data" [e.g. see Zuboff, 1988]. IS researchers, however, are expected to publish their work in journal articles. Generally speaking, journal articles are regarded much more highly than books in business schools. One problem for an ethnographer, therefore, is the small page length available in a journal article. A second problem is the expectation that singular findings will be presented in each paper i.e. each paper has just one main “point.”

My suggested solution is for ethnographers to treat each paper as a part of the whole. That is, an ethnographer has to devise a way to carve up the ethnography in such a way that parts of it can be published separately. Then the issue becomes which part of the story is going to be told in one particular paper. An ethnographer has to come to terms with the fact that it is impossible to tell the "whole story" in any one paper.

One advantage of such a strategy is that there is potential for an ethnographer to publish many papers from just the one period of fieldwork. Usually it is possible to tell the same story but from different angles. A good example of someone who adopted this strategy is Wanda Orlikowski. Orlikowski succeeded in having many papers published based on the one period of ethnographic fieldwork she did for her PhD at New York University.

VII. EVALUATING ETHNOGRAPHY

Klein and Myers [1999] suggest a set of principles for the conduct and evaluation of interpretive field studies in information systems (including case studies and ethnographies). While these principles might not apply to all kinds of ethnography, they at least give some idea of how ethnographic research, which takes an interpretive stance, can be evaluated. Of course, the only practical way for ethnographic research to be evaluated is by looking at the written report. (It is generally impractical for anyone other than the ethnographer to visit the original fieldwork site).

Rather than summarize the Klein and Myers [1999] article in detail, I will highlight just a few general aspects here.

IS THIS A CONTRIBUTION TO THE FIELD?

This is one of the most important aspects to be considered. The worth of an ethnography can be judged by the extent to which the author tells us something new. Of course, what is new for one person might not be new for another. The key thing is that the ethnographer must convince the reviewers and

editors who serve on the editorial boards of our journals that their findings are new. The ethnographer's main challenge is to convince this audience in particular of the worth of their research.

DOES THE AUTHOR OFFER RICH INSIGHTS?

Any paper purporting to be based on ethnographic research should offer rich insights into the subject matter. One way of doing so is to consider whether or not the manuscript contradicts conventional wisdom. A good example of one paper that does this is the article by Bentley et al. [1992]. As discussed in Section II, these researchers found that their ethnographic studies contradicted conventional thinking in systems design. They found that the conventional principles normally thought of as 'good design' could be inappropriate for cooperative systems.

HAS A SIGNIFICANT AMOUNT OF MATERIAL/ DATA BEEN COLLECTED?

One of the distinguishing features of ethnographic research is participant observation (Section II). The researcher needs to be there and live in the organization for a reasonable length of time. Therefore, a sufficient amount of material/data must have been collected during the period of fieldwork. There should be some evidence of this involvement in any article produced. We would expect to see the subject matter set in its social and historical context, and multiple viewpoints expressed [Klein and Myers, 1999]. Also, it is essential for an article to go beyond the "official line" promoted by the organization. We need to know if there were any "hidden agendas," disagreements, or other personal or organizational issues [see e.g. Myers and Young, 1997, Sayer, 1998], because an ethnography is about the dilemmas, frustrations, routines, relationships, and risks that are part of everyday life [Grills, 1998b].

IS THERE SUFFICIENT INFORMATION ABOUT THE RESEARCH METHOD?

This last aspect is discussed in more detail by Klein and Myers [1999]. In essence we need to know how the research instrument (the ethnographer) was calibrated. Anyone reading the published article should be able to evaluate for

themselves the “validity” of the findings. It is important that we know what the researcher did and how.

All of the above aspects help reviewers and editors to evaluate the quality of an ethnographic study. Over-all, the most important consideration is for ethnographers to write an account that is convincing and “plausible” [Prasad, 1997].

VIII. CONCLUSION

Thousands of organizations around the world are in the process of developing, implementing, or struggling with information technology in many new and varied ways. Ethnography provides a researcher with the opportunity to get close to “where the action is.” The potential topics are limited only by what organizations are doing and what the IS research community considers significant. Provided it is done well, ethnographic research makes a substantial contribution to the IS field.

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