

GROUNDING THEORY: CASE STUDIES AND METHODOLOGICAL ISSUES

Dr. Anne Adams

University College London Interaction Center
United Kingdom

Introduction

During my research I have come to realize that effective system design and implementation requires more than understanding what the user is doing (tasks etc.) or even what their cognitive processes might be. There is a need for a holistic approach to the users' perceptual context and the social and organizational context for the design, development and implementation of systems. The holistic definition I refer to here is that of 'emphasizing the importance of the whole and the interdependence of its parts'. This means identifying the users' emotional and social drives and perspectives; their motivations, expectations, trust, identity, social norms etc. It also means relating these concepts to work practices, communities and organizational social structures as well as organizational, economic and political drivers. This holistic approach has led me towards social theory with grounded theory as a methodology. However, issues of bias and validity are interesting points raised by naturalistic approaches as is the role of literature in the research process.

Grounded Theory Background

Grounded Theory (Glaser and Strauss 1967) is a social-science approach to theory building that can incorporate both qualitative (e.g. interviews, focus groups, observations, ethnographic studies) and quantitative (e.g. questionnaires, logs, experimental) data sets. The methodology combines systematic levels of abstraction into a framework about a phenomenon, which is iteratively verified and expanded throughout the study. The use of grounded theory methodology has diversified into two approaches; the classic version supported by Glaser (1976) and the Strauss & Corbin (1998) version. These variations are argued by Terence McCann and Eileen Clark (2003) as a sign that the method is maturing and developing as the domains of application widen. Nowhere is this more evident than in the field of information technology where the need for valid yet flexible research is essential.

A key strand of grounded theory is an understanding, as a researcher, of our own *theoretical sensitivity*¹ (Glaser, 1978). This term relates to the researcher's personal degree of sensitivity or bias depending upon previous

readings and experience, relevant to the area of study. The different approaches to grounded theory take different opinions on the role that this previous literature plays in the research process, which highlights some interesting points for further discussion during this workshop. Strauss & Corbin (1990, 1998) argue for a flexible approach to the use of literature in the identification of the research problem & support for emerging theory. Glaser argues that this can bias the researcher and that the literature review should only be conducted in association with the emerging theory (Glaser, 1992).

Grounded Theory Research Conducted & Methodological Issues Highlighted

My research has employed a very inter-disciplinary approach (e.g. social science, computer science, information science) and methodology (e.g. in-depth interviews, focus groups, observations, questionnaires, content analysis) over the past 8 years. Grounded theory is used as a foundation for generating valid theories through triangulating data from different sources.

Former research into the usability of authentication mechanisms for digital resources would initially appeared to relate to simple cognitive issues e.g. password memorability, secure password construction. However, questionnaire data led onto in-depth interview studies that a grounded theory analysis identified as a complex web of concepts at different levels of abstraction. An analysis of security literature and philosophical writings, such as Foucault, highlighted a security culture that is reliant on social pressures, withholding information under a 'need-to-know' principle that dramatically clashes with usability design principles. The research findings identified that poor communication between users and security departments (and visa versa) resulted in poorly designed systems and inappropriate user behaviours. In the worst scenarios a mutual distrust ensued between the user and security cultures. Without a review of the whole context including competing cultures and requirements appropriate design was found to be impossible to achieve.

Further research into users' perceptions of privacy in multimedia communications identified that previous technology research in the field was often application specific and individually centric. My research reviewed users' perceptions of privacy within its social context

¹ It is suggested that when publishing a useful tool for communicating our perspective is to present a short *reflexive account* of this.

thus highlighting the different competing needs of the individual and the community which are often traded off against one another. An analysis of the relevant literature interwoven with the studies produced a privacy model to guide designers of multimedia communications. Ultimately although privacy is conceived of as an individual's right to privacy, without a social context to be private from we cannot fully understand privacy.

Digital library research within the clinical and academic domains again highlighted the importance of social context. A grounded theory analysis of the clinical domain literature identified how social structures and work practices can be disrupted by technology implementation. Interlacing of this analysis with grounded theory research highlighted that DL technology can be perceived as a threat to senior staff members' roles due to their poor training and support. Traditional organisational norms and roles were reversed by DLs allowing junior clinicians easier access to information than senior clinicians. Further research highlighted the importance of interactions between implementation procedures, communities of practice and high level organisational and economic directives. Whilst previous literature has highlighted some of these issues our research has started to integrate these concepts that relate to both evolutionary and revolutionary design approaches.

Recent research – including a current full paper presented at JCDL'05 – has started to uncover not only complex contextual issues as various levels of abstraction but also how those concepts change over time. An analysis of the current literature and digital library design has highlighted missed opportunities to design for the temporal elements of users' information

requirements. Our identification of a users' 'information journey' has identified further opportunities for digital libraries to supporting users changing needs.

Grounded Theory allows for a complex interleaving of various data types and literature when developing theories through incorporating various levels of abstraction. Although, it is clear that previous literature and research can be biased in its approach to specific problems. However, to assume that as researchers we cannot ourselves remain unbiased by this research is under-estimating our research capabilities. Ultimately it is important to understand and not be governed by previous research but to be informed and judgemental of it. This reveals that although a reductionistic approach can provide pieces of the whole jigsaw puzzle we need to see the 'whole picture' to work out where they fit in. This is often complicated by the fact that this picture is, like a movie, a continually moving target.

References

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