

Analyzing Collaborative Activity
Representing field research for understanding collaboration

First Workshop - CSCW 2002

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Workshop Report

A CSCW workshop for researchers in technology-supported collaborative practice explored the analysis and representation of collaboration. Participants shared multi-method and multi-theory approaches in field research, ethnography, and contextual studies. The workshop focused on translating field data to meaningful representations, for both understanding and design. Both theoretical and practice models were shared as current knowledge and issues in analysis of collaborative practice. Contributions ranged from empirical questions of field research to theoretical integration. We promoted exploration of a “middle ground” of inquiry, with field researchers inquiring into design issues, and theoretical investigators looking at applications. See papers and information: www.redesignresearch.com/cscw/ .

A second workshop is planned with the CSAPC 2003 conference - Cognition and Collaboration - Distributed Cognition in Complex Processes (www.cs.vu.nl/~csapc03/), in Amsterdam, September 2003.

Themes of the Workshop

Several broad perspectives or themes underscored the workshop discussions, and were recorded as part of the interactive discussion. While these were not the focus of the workshop, they emerged from our research questions and describe its discursive character.

- **CSCW?** As we continue to explore this domain of inquiry, some find it artificially limiting to articulate research problems specifically about cooperative *work*. A trend toward broadening interest in intellectual cooperative activity extends the to Learning (CSCL), Play (CSCP?), and more generally, “practice.” Although the roots of CSCW draw from the original interest in group technologies and enhancing cooperation in organizational settings, many researchers have pushed beyond these bounds. Since this topic has been circulating across other discussions, this topic should gain momentum in future workshops. As cooperative technology extends beyond the conventional descriptions of computing, we might also call for an extension of the field into *cooperative technology for collaborative practices*.
- **CSCW for** : Design, Products, Organization, Community, Work Practice. Participants disclosed various target domains for the application of collaborative technology. Opening up the space for cooperative activity and opening up the technology also opens up the possible applications space. Some articulated this “designing for” as *intervention*. Any design activity oriented toward collaboration support might be understood as an intervention in the social space, and treated as such by researchers and managers.
- **Adoption of interpretive frameworks.** Many of us reported from experience with interpreting field research through theory or integrating theories to generate broader understanding or applicability from findings. Our common ground was the theoretical orientation of distributed cognition, with several reporting findings interpreted from the lens of distributed cognition or activity theory. We further articulated the use of theoretical frameworks as such as “Lens,” a way of viewing the domain that focuses on some aspects clearly, while necessarily relegating other aspects to the periphery. This choice of lens specifies explanatory power; disclosing this feature of theorizing allows us to work across theories by choice, agnostically.

- **Beyond Contextual Design.** Over half of the projects reported on work integrating at least some CD representations, with several utilizing much of the complete Contextual Design (CD) toolkit. To some extent, the use and effectiveness of the models were taken for granted, as though CD now afforded a canonical approach. One distinction of the workshop was to not take representations for granted, but to explore their uptake in our research and design projects. While this was an intention of the workshop, due to our focus on issues and not specific models per se, little discourse emerged on the CD toolkit.

An interesting sidebar should be noted that it seems CD models are now widely used across both ethnographically informed research and design-oriented research. Perhaps researchers may find little to share on the specifics of its use due to its acceptance; we found little sharing on any downsides of reliance on this popular toolkit. Due to the wide uptake of CD, as responsible researchers we might further explore, critique, and evolve its representations.

- **Multidisciplinary researchers and practitioners.** An obvious and pervasive theme was the disciplinary variance among workshop participants. Ranging from anthropologists to social scientists to design researchers, and using methods ranging from ethnography through organizational modeling to prototyping, we found differences in method and interpretation. Although all participants might be considered interdisciplinary to some extent, we still found need to smooth out variations of understanding, which takes time. We might attempt to build more bridges of background in advance of future workshops.

Workshop Issues Sessions

The workshop was organized into four issues sessions, with the intention of grouping papers and presenters into two morning and two afternoon discussion sessions around similar issues raised in the position papers. The four issues sessions were composed as follows:

1. **Integrating theory and analysis frameworks** - Andriessen, Chisalita, Brush
2. **Ethnography and system design** - Normark, King, Boncek
3. **Representing knowledge in practice** - Bossen, Stahl, Jones
4. **Artifacts analysis** - Dix, Spinelli, Fields

The full workshop report (available on the website) reports on the individual presentations. The workshop website also provides the full position papers for each discussant, and some of the presentations are also available.

Emergent Issues and Observations

In most workshops, significant emphasis is placed on the emergent issues arising from the discursive space. Although some of these issues were explicit in the position papers, they were not developed as full topics of inquiry. We found these inquiries disclosed more of the current issues than the four defined sessions may have suggested.

Ethnography and Design Research

How do we integrate ethnography into design and research contexts? With the emphasis on analysis of field data, most of the participants presented projects and issues around use of ethnographic methodology. Ethnographic methods are often used as part of a multi-method research approach, with more or less applicability and validity based on the experience and articulation of the individual researcher. Rather than invalidating the strength of ethnography, the multiple methods keep teams honest by providing multiple interpretations of the field data.

One of the attractions of toolkits such as CD is their support for filling in the gaps of researcher method – ethnographers unfamiliar with design process may use CD and its models as a communicative bridge to create value for the intended designers, even though they may lack in design experience. Likewise, design professionals with limited field research experience may bridge

their own way into deeper understanding of user practice through the scaffold of models, as part of a multidisciplinary design team.

A continuum of issues (similar to that of disciplinary focus) ranged from ethnography as a social research process to using ethnography as a method for understanding users in design projects. These extreme ends of the spectrum may require different representations, levels of skill, and degrees of engagement.

We also noted how **ethnographic studies often represent a “situational slice,”** leaving us with the issues of authentic representation of practice when our studies necessarily encompass a specific time slice. One issue that warrants much further discussion is the notion of studying activity and collaboration *over time*. Temporality remains a major factor not effectively addressed by CD or other models; observations of any unstructured (non workflow) activity show patterns of activity that are only partially revealed through the situational slice of the current study. While longer studies (as advocated by experienced ethnomethodologists) may reveal much more of the structure or relationship in activity over time, we find a paucity of representations for interpreting the temporal dimensions of collaboration. (More on this in the Jones paper/presentation).

The workshop discussed the **evaluation of research method effectiveness**. How do researchers assess the effectiveness of specific methods and multi-method hybrid approaches? How do we know which approaches offer the sensitivity to specific research questions? How do we improve skill and practice to better validate our own field research? While experimental and quantitative research methodologies enjoy well-established standards of effectiveness, field research remains a researcher-centric skill, developed by practice, feedback, and self-reflection. While experiments are designed to be replicable, each field study remains its own unique case, and is subject to influences of the researcher, the organizational unit of analysis, the type of intervention, the specific time chosen, and many other factors. Traditional controls include analysis and disclosure of possible effects, multiple brief studies, using different researchers and informants, and so on. However, when ethnography becomes widely used for design research, and Contextual Design becomes used as part of a team design process, some types of simple and practiced research controls might be considered valuable to share and document.

Ethnography was discussed **as a “method” and also as a way of approaching research**. Relating this to the uses of ethnography discussed above, we find ethnography integrated into larger research projects as one of several methods for engaging the field. This does not in and of itself “reduce” ethnography to a method – effective use of ethnography requires a mindset and understanding of ethnomethodology. As a way of approaching a research effort, the ethnographer starts with good tools for ethnography and expands the toolkit from there to include various interpretive approaches, models (such as CD), and process-specific representations.

Theoretical Issues, and Uses of Theory

A distinct difference was found between theoretical approaches to field research in collaborative work and empirical studies focusing on findings in a defined field setting. Although these approaches can also be described as deductive (top-down) and inductive (bottom-up) in contrast to each other, theoretical frameworks are by design deductive approaches. In one issue session, theoretical papers raised questions of appropriate theories and frameworks. We acknowledge a field where one set of theories may be useful for understanding social systems, another set may be appropriate for relating practices to design, and yet another for selecting and implementing interventions in organizational practices.

Theories are not being left to themselves – many of us are integrating theory to build a better framework for explanation and interpretation. One paper (Andriessen) brings together four major theoretical frameworks to propose a Dynamic Group Interaction Model. Chisalita adds organizational culture theory to the well-documented DUTCH model (from van de Veer). Jones extends Activity Theory with temporal lifecycle models to describe collaborative information behavior. Brush brings values analysis into an urban planning simulation environment. And so we find bricolage of theory taking place in deliberate attempts to improve the explanatory power of an adopted framework, or to extend that which has already been used in prior work.

In the final analysis, design goals and research goals differ, theories are not necessary for successful field research of collaboration. In many cases, the object may be to evaluate the effectiveness of a design intervention, through introducing and evaluating prototypes or early product designs. In these cases, the designer can be theory agnostic and effective. In other cases, we might find a successful design or social system having reached a peak or stasis. We turn to theory to explain the situation and to articulate innovations that offer possible breakthroughs to the community of use. We see we should “try on” theory, that theory should serve the research or design problem, not the other way around.

Finally, we found a trend toward developing means of understanding values in the domains of study. Chisalita and Brush raised specific research questions for studying values in the context of field research for design. Values of interest can be defined across a range of individual and social contexts – values of the users and designers, universal and particular human values, organizational and cultural values. Discourse revealed the requirement for developing models for values in different research settings. While values studies may be more typical in sociological studies, product design, and even business research, they are still an emerging issue in CSCW and field research in collaborative work. It remains to be tried whether traditional values measures and models (e.g., Rokeach, Quinn, Maslow) may even be applicable to the complex social and work domains of the research projects covered within the workshop. What frameworks afford sensitivity to both individual and group values? At this point we remain aware of the trend and open to sharing from experience and effective approaches used across the wider community of researchers.