Panel
Six Readings of a Single Text: A Videoanalytic Session

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The purpose of this special session will be to illuminate some of the possible ways in which we, as observers and researchers, can come to understand collaboration and how it is achieved within the context of joint activity. Historically, collaboration has been studied in a variety of ways, both quantitative and qualitative, drawing on the research traditions of both the psychological and the social (i.e., Anthropology, Sociology, Linguistics, Communications) sciences. Our goal here is to highlight some of these methodological differences while at the same time demonstrating how different approaches can each contribute to a richer and more fully elaborated view of the collaborative process. In preparation for this session six researchers with extensive experience in studying collaboration were asked to analyze a common piece of data – a pre-selected segment of videotaped interaction, involving three architects engaged in the design of a building. Each will summarize their findings followed by a discussion intended to highlight the complementarities and incommensurabilities among the six analyses.

A transcript of the video segment will be distributed to the audience and the video segment will be played. Each of the panelists will then be given 10 minutes to describe how they would go about analyzing this segment. The remainder of the session will be devoted to an open discussion exploring differences and commonalities among the analyses presented.

Questions to be discussed include: How does the analytic approach applied constrain the types of claims that might made about what is observed? What are the limits of what can be learned by micro-analytic studies of single settings? What guidance for the design of artifacts can be obtained from studies of this kind?

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Psychologists working in the field of CSCW have traditionally conducted laboratory studies of the impact of various CSCW technologies such as video conferencing on shared problem solving tasks. My own research in CSCW followed this tradition where with colleagues I investigated the nature of collaboration, communication and task performance where pairs of participants either worked in a co-located face-to-face setting or supported by various communication technologies. The analytical techniques which we applied involved detailed analysis of the structure and content of the resulting task dialogues.

The dialogue analysis involved exploring the amount of speech required to complete the tasks in each communicative context and the nature of the turn taking among speakers such as the frequency of interruptions. Studies using these kinds of analyses, combined with user satisfaction questionnaires have shown characteristic differences in the way people commnicate and collaborate when engaged in face-to-face interaction, when supported by off-the-shelf videophones, and when using various qualities of videoconferencing tools (see Anderson et al, 1996,1997).

We have also combined such measures with very detailed analysis of the content of the dialogues. The nature of this content analysis was based on a technique called Conversational Games Analysis (Kowtko, Isard & Doherty-Sneddon, 1991) which involves assigning a communicative function to each utterance based on its position in the sequence of the dialogue, its verbal content, and its prosody, combined with the analyst's knowledge of the stage of the problem solving task which has been reached at the time of the utterance. The categories of Conversational Games include such functions as instructing, questioning, eliciting and providing feedback. The dialogue is divided into a sequence of these Conversational Games which can contain several constituent utterances and even can contain embedded conversational games. This system of analysis can be used reliably by different judges and can be applied to a range of problem solving tasks, such as shared route finding tasks and lab simulations of a range of service encounters such as travel booking and financial services. The system has illuminated how the differences in the lengths of dialogues which we observed in earlier studies of video-supported and face-to-face collaboration. Visual signals in face-to-face interactions seem to be used to substitute

for a considerable amount of verbal feedback between participants but even high quality conferencing systems do not seem to support such visual interchanges between participants in a the same way as face-to-face interactions (Doherty-Sneddon, Anderson et al, 1997).

More recently we have moved from laboratory simulations of shared work, to work place studies of cross- company virtual teams of engineers collaborating supported by videoconfernceing and various shared graphical tools. In analyzing these work place meetings we have had to devise news forms of communication analysis. Although this analytical work is still in development, early studies of how the interaction is distributed across co-present and remote participants, how the content of the discussion can be assigned to problem-solving talk, social talk, technology talk, are already revealing interesting aspect about the impacts of technology and virtual team working (Carletta, Anderson & McEwan, 1998).

References

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How to Follow Learning in the Coordinated Assembly of Representational States?

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A central feature of collaborative learning is participating in the coordinated assembly of representational states (C. Goodwin, 1995; Hall, 1996; Hutchins, 1995a, 1995b; Ochs, Jacoby, and Gonzales, 1994; Saxe, 1991). Much of my recent research focuses on this type of activity in ongoing, multi-party interaction around shared tasks, drawn from middle school mathematics classrooms and adult workplaces where people design things (Hall, in press, 1995; Hall and Stevens, 1995, 1996). From an empirical perspective, assembling representations is a densely present, emergent, and mundane activity in school and professional settings where people work together. But giving an adequate account of this activity poses several theoretical problems:

- How do people bring talk, embodied activity, and various forms of inscription into coordination as they work (i.e., how do they assemble representational states)?
- How should we distinguish between making and using representational forms, including differences in the prevalence of these activities and their developmental trajectories?
- How is access to participation in these activities organized in different settings, both as a problem for adequate description and as an issue in instructional design?
- How can different perspectives on "competence" be aligned in studying, designing, or participating in these activities?

My contribution to the proposed panel would be to foreground the work of representational assembly and then to return to the theoretical/methodological issues raised above.

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My approach to analyzing videotaped data is best described as micro-ethnographic, which in my case involves a convergence of two competencies:
1. Methods that focus on talk, especially Conversation Analysis ;
2. Methods that focus on embodied action, such as Context Analysis.

Conversation Analysis and Context Analysis are easily combined because both are detailed, descriptive, structural, and naturalistic approaches. Both methods help account for the relationship between form and meaning, which is basic to structuralism. Behavior is not regarded as an external display of internal meaning, but as a form out of which people create meanings. Most forms (whether linguistic or embodied) are under-specified but become meaningful for participants as they constitute their context.

Conversation Analysts describe the role of spoken utterances within strips of interaction. Utterances are treated as social actions. Special attention is given to the ongoing orderliness of talk, because the sequential placement of an utterance helps to determine its social action. Utterances are shaped by their particular context (utterances have no meaning outside context); utterances register their context (participants display situational relevances to one another); and utterances constitute a context of subsequent social interaction (cotext). In sum, people make sense of their world, ascribe meaning to their world, and create structure for their world—through talk. Conversation Analysis is unabashedly microscopic, because, as Oliver Sacks has written, a "detailed study of small phenomena may give an enormous understanding of the way humans do things".

Context Analysts study how people move their bodies and occupy space in orderly ways. Pioneered by Ray Birdwhistell and Erving Goffman, this approach regards face-to-face interaction as a spatial process. Participants move so as to see and hear each other, arranging themselves in ways that show their mutual involvement and their understanding of the current activity. Behaviors such as head movements or postural shifts have no intrinsic meaning; rather, they are social actions to be understood through their relationship with other embodied behaviors, occurring within a context that participants construct.

Altogether, the present method involves four sets of related activities:
- Recording natural talk and embodied action.
- Repeated observing.
- Transcribing and digitizing.
- Composing descriptions and reporting findings.

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