Coordination of Talk & Action

Richard Alterman (alterman@cs.brandeis.edu), Alex Feinman, Seth Landsman, Josh Introne
Computer Science Department, Center for Complex Systems, Brandeis University
415 South Street, Waltham, 02454 USA

The participants in a joint activity must work hard to maintain coordination. For complicated and/or novel activities, even more talk is needed to proceed. Over time, for recurrent cooperative behaviors, the participants will organize their talk as a means of organizing their actions. For recurrent activities, a sign may be introduced at the scene to fix a recurrent problem of coordination by providing some organizational structure (e.g., a stoplight). We will refer to permanent structure designed and implemented prior to a cooperative activity by a non-participant that mediates and organizes the activity as a *coordinating representation.* The main work of this talk is to explore the ramifications of, and methodology for, introducing coordinating representations into same-time / different-place computer-mediated cooperative activities.

Groupware systems are computer-based systems that support groups of people engaged in a common task (or goal) and that provide an interface to shared environments (Ellis et al, 1991). Groupware facilitates communication, coordination, and collaboration of group effort. Building a groupware system requires a detailed analysis of the work environment in which it will be deployed and extensive work on designing both the interface as it presents itself to the individual user and the mediated interaction among the users.

Within the literature on CSCW, the development of technology that supports online communication has been a core research issue. For synchronous communication, the canonical example is to convert an everyday task of several actors engaged in planning out some kind of activity in front of a whiteboard into a task that could be computer-mediated. Given the shared workspace, two issues of interest are how the participants in such an activity organize their talk, and how they organize their task.

Where a shared virtual whiteboard is an external media that can be used to support all kinds of social interaction, a coordinating representation is one kind of content realized in an external media. It is specifically designed for a particular context and it addresses a problem of coordination that emerges in the performance of a recurring cooperative activity across sessions of cooperation. For some applications, general-purpose tools that support communication and coordination, like the whiteboard, will suffice. But for tasks that occur over extended periods of time, the introduction of a coordinating representation will potentially improve the interaction among the participants during the recurrent problematic areas of joint behavior. This scheme leverages the user s participation to help make the system tailor-made.

Figure 1 shows the basic methodology we propose for tailor-making a groupware system. A groupware system is developed providing general-purpose coordination tools to support the users activity. In some cases there are difficult problems in coordination that confront the users during the normal course of their mediated behaviors and these problem areas are not easily or efficiently resolved using general tools. In these cases a pilot study is performed, and a discourse analysis is made to identify secondary structure developed by the participants to organize their talk so as to organize behavior. Based on this analysis, a second version of the system is constructed that includes coordinating representations to support user activity.

In the first part of the talk I will lay out the cognitive foundation for this approach to building tailor-made groupware systems. In the second part of the talk, I will present a methodology, focusing on issues and methods of discourse analysis. Data and evidence for this talk are drawn from both prior and existing work (and studies) at Brandeis. The examples we draw on come from the data we have collected from experiments we have performed using the VesselWorld system, demonstrated at CSCW 2000.

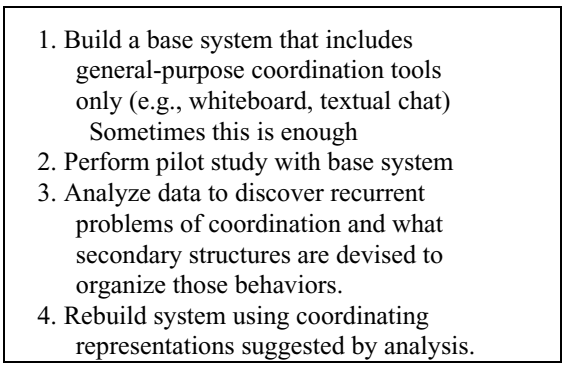

Figure 1: Basic Methodology

Acknowledgments

This work was supported by ONR Contracts N00014-96-1-0440 and N66001-00-1-8965. Additional funding came from NSF grant EIA-0082393.

References

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