

Interactive Discourse: Influence of Problem Context
Panel Chair's Introduction

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The purpose of the special parasession on "Interactive Man/Machine Discourse" is to discuss some critical issues in the design of (computer-based) interactive natural language processing systems. This panel will be addressing the question of how the purpose of the interaction, or "problem context" affects what is said and how it is interpreted. Each of the panel members brings a different orientation toward the study of language to this question. My hope is that looking at the question from these different perspectives will expose issues critical to the study of language in general, and to the construction of computer systems that can communicate with people in particular. Of course, the issue of the influence of "problem context" is separable from the issue of how one might get a computer system to take into account the effects of this context (and, yes, even whether that is possible). My hope is that those on the panel who are concerned with the construction of computer-based natural language processing systems will address some of the issues of "how" and that all of the panelists will consider the prior questions of what effects there are and what general principles underlie how the "problem context" influences a dialogue.

There are two separate aspects to the "problem context" that influence the participants' expectations and hence their utterances: (1) the function of the discourse, and, (2) the domain of discourse.

Function: This aspect of the problem context concerns why the speaker and hearer are communicating and their relative roles in the communication. Casual conversations, classroom discussions, task-oriented dialogues, and stories have very different functions. Although it is most reasonable to consider computer systems as participating in a restricted kind of dialogue (namely, a dialogue which arises from aiding a person in the solution of some problem), it is still clear that such systems may assume different roles, e.g., that of an expert (user is an apprentice), tutor (student), or supplier of information (e.g., from a large data base). Each of the different functions results in different kinds of goals (e.g., teaching requires a different kind of informing than simple question answering) and each of the different roles will create different expectations on the part of the user and different needs in terms of the kinds of information the system has about the user.

Domain: This aspect concerns what a speaker is talking about, the subject matter of the discourse. The structure of the information being discussed has an effect on the language (cf. Chafe's "The Flow of Language and the Flow of Thought", Linde's work on apartment descriptions and planning, my work on focusing in task-oriented dialogues).

Both of these aspects of "problem context" have global effects on what gets discussed and in what "units", and local effects on how speakers express the information they convey. Clearly the two aspects interact. For example, what a speaker chooses to discuss next depends both on why he is telling the hearer and on the information itself and what it is related to.

Some questions to consider:

In what ways are the effects of problem context manifest in individual utterances and larger discourse units?
How do people's "conversational styles" differ?

The above discussion of "function" gave several exam-

ples. There is no taxonomy of function (as I've used the word). How might such a taxonomy be constructed and used?

What kinds of expectations are set up by different kinds of functions?

What assumptions about the knowledge, beliefs, and goals that are shared by the participants are made by the different functions?

How do the constraints from function interact with those of domain?

What kinds of "tools" are useful for examining such issues? (e.g., what kinds of analysis of data can be done)?

What happens when expectations generated by problem context (either function or domain) are violated?

