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SYMPOSIUM

Cognitive Models in User-System Dialogue

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- Chair:** Bonnie Webber, Ph.D.
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- Participants:** Wendy Kellogg, Ph.D., IBM T.J. Watson Research Center
The case against cognitive modeling in user/system dialogue.
- David Novick, Ph.D., Oregon Graduate Institute
The case for cognitive modeling in user/system dialogue.
- Hans Brunner, Ph.D., U S WEST Advanced Technologies
Scars from the field: When cognitive modeling works, and when it don't.

Abstract

What role can cognitive models of dialogue play in supporting conversations between humans and machines? Our purpose in this symposium will be to enhance the community's understanding of user/system dialogue through debate. Three speakers will argue either against the importance of cognitive models for user/system dialogue, for the importance of cognitive modeling, or relating both positions to current applied work in dialogue management system building. The positions of the three speakers are:

Wendy Kellogg: Cognitive models aren't directly useful - unless we allow "cognitive modeling" to extend beyond the skin and incorporate the artifacts of user/system interaction. Robustness in dialogue management comes from task analyses, analysis of system usability issues, and a deep understanding of plans and situated actions (e.g., Suchman, 1987). Dr. Kellogg will use examples from user interface research and design practice to support this position.

David Novick: The only way to achieve dialogue management that is robust across tasks is with cognitive modeling. Only with a deep understanding of human memory and performance strategies and limitations can we generalize techniques across domains and tasks in ways that are computationally useful. Dr. Novick will present data and examples from his work to support this position.

Hans Brunner: The point of cognitive modeling is to understand fundamentally how humans use language and artifacts to interact. While such information is essential, the point of expressing cognitive models is to obtain methodological assistance, not theoretical tyranny over practice. Dr. Brunner will provide examples from current system building to support this position.

Each panelist will each briefly present their respective position. As session chair, **Bonnie Webber** will then moderate a discussion, probing and expanding on areas of disagreement and agreement. In the final 15 minutes, members of the panel will address comments, questions and challenges from the audience.