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Introduction

The conversation analyzed in this paper, is an excerpt from a brief instructional session wherein a highly computer-literate person is demonstrating the function of accessing the Internet using special software tools. The demonstration is being performed for two individuals who are unfamiliar with the software and are considerably less computer-literate. The goal of this analysis is to investigate how ëgroundingí occurs between the participants in an instructional conversation where software tools are being demonstrated. ëGroundingí is a term that has been used by psycholinguists to refer to the updating and accumulation of common ground between the participants in a conversation [Clark & Brennan, 1991]. The method used for this analysis will be an assessment of the micro-structural features of a short opening segment of the discourse.

The Overall Organization of the Conversation: Action Projection, Pre-Expansion and Action Sequence

The conversation that took place, ìWorld Wide Webî, is a demonstration of hypermedia access to the Internet. The opening segment (roughly 5-7 minutes) that will be analyzed contains the beginning of the demonstration of the World-Wide Web. The demonstration is preceded by a discussion between the participants about the technical prerequisites (computer equipment and telecommunications capacity) for establishment of access to the Internet to read multimedia information: text, video and graphics.

This segment of the discourse is composed of (a) an action projection, followed by (b) a pre-expansion that precedes the (c) action sequence of demonstration. An ëaction projecttraní would be an announcement by the speaker that he will soon engage in an action or request within the conversation. In this instance the action projection is the announcement of the intention to begin demonstrating multimedia access to the World Wide Web. A ëpre-expansioní is a sequence of conversational turns inserted by the participants prior to the announced substantive action of the conversation. In this instance the pre-expansion is a two-part sequence of conversational turns during which the participants discuss the technical prerequisites for access to the World Wide Web. The ëaction sequenceí is the sequence of conversational turns that accomplish the substantive action of the dialogue, in this instance being the demonstration of the World Wide Web. The identification of conversational components used in this analysis is in accordance with Schegloffís [1990] lexicon of conversational coherence structures.

Grounding: How Mutually Accepted Identification of Referents is Established in Conversation

Each of the sections of this discourse excerpt (the two parts of the pre-expansion and the subsequent action sequence) is either a demonstration of the World Wide Web or part of a transition into the demonstration. It is reasonable to expect that the means by which the conversational participants ëgroundí (establish co-

reference for) their remarks within each of the sections ought to reflect the communication work that the particular section is performing. Before this expectation can be confirmed or disconfirmed it is necessary to define what ëgroundingí means in the context of conversation analysis.

Clark and Brennan [1991] have defined grounding as: ìthe collective process by whichî the contributor to a discourse and the other partners in the discourse ìmutually believe that the partners have understood what the contributor meant to a criterion sufficient for current purposesî. They enumerated several methods that discourse partners can use to affirm to a speaker that they comprehend his contribution to the discourse. One method is, quite obviously, an overt verbal acknowledgment that they understand the speakerís statement, whether it be a simple grunt or even a full-fledged response stating ìI understandî. Another method is simply for the listener to make a statement that is the relevant next turn in the conversation in response to the speakerís statement, such as an agreement or disagreement in response to a statement of assessment by the speaker. A third method to affirm comprehension of the speakerís statement is for the partner to simply continue listening without breaking in.

Nevertheless, these are general, all-purpose methods for establishing grounding in conversation. For communication about real-world objects that have material significance to discourse participants, Clark and Brennan identify several techniques that participants can use to ensure that the references that they make to objects are clearly understood:

Alternative Descriptions: After a speaker identifies an object, the discourse partner responds by providing an additional identification of the object through an alternative description of it.

Indicative Gestures: After a speaker identifies an object, the discourse partner responds by either pointing to or looking at the object

Referential Installments: As a speaker identifies an object through incremental steps of description, the discourse partner responds by confirming, after each step, that he has understood the description so far.

Trial References: A speaker attempts a tentative description of an object by way of inquiry to the discourse partner, and the partner either affirms or denies the validity of the proposed reference.

Clark and Brennan identify one further technique for conversational grounding that is used by discourse participants in situations requiring a high degree of accuracy. This technique is verbatim repetition: after the speaker has made a statement, the discourse partner repeats that statement exactly as it was heard to confirm that it was understood.

Grounding as Reflected Within Each Section of the Conversation

As asserted earlier, each section of the conversational excerpt ought to contain the grounding methods and techniques that are appropriate to the communication work being done within that section. If the action sequence is performing the work of demonstration of the World Wide Web and the discussion within the action sequence is primarily focused upon the contents of the computer screen in front of the discourse participants, then this section of the discourse ought to primarily exhibit the use of grounding techniques for object references. Likewise, if the first section of the pre-expansion primarily contains a chain of conceptual explanation about the connection to the Internet using software (Trumpet Winsock) that is being run in the background of the conversation, then this section ought to primarily exhibit some of the general methods for conversational grounding rather than more specific grounding techniques for object references. Finally, if the second section of the pre-expansion contains unsuccessful attempts by the demonstrator to shift the conversation over from explanation to demonstration, then this too ought to be evident in the grounding methods used (perhaps unsuccessfully) by the discourse participants within the dialogue of this section.

Extended analysis of the grounding methods used by the discourse participants does indeed support these hypotheses. Examination of the action sequence reveals several instances of more precise object-specific grounding techniques being used. Examination of the first part of the pre-expansion also finds a tendency towards the use of more general grounding methods that are appropriate to the abstract concepts being discussed by the discourse participants. The grounding in this part of the dialogue is primarily manifest as the all-purpose method in which a speakerís statement is succeeded by another participantís turn that is the relevant next statement to be made. The second part of the pre-expansion has within it two instances of object references by the demonstrator that appear to aggravate comprehension problems of the participants within the conversation. Indeed, these unsuccessful attempts to use an object-based grounding technique seem to correspond with the demonstrator's lack of success in moving the conversation over to the activity of demonstration.

Conclusion

In the conversation analyzed in this paper, the demonstration of software tools required a preliminary transitional segment of discourse that was partly explanatory and partly an unsuccessful initial attempt at demonstration. Furthermore, the context of the discourse was not about objects per se but was rather about representations of objects that were appearing on a computer screen in front of the discourse participants. Although the use of object-based grounding methods was manifest to a greater degree in the concluding section of demonstration, it is possible that the transitional and introductory sections were needed prior to the demonstration precisely because conversational grounding about representations of objects is more difficult to achieve than grounding about actual physical objects. Further research is needed to better understand the dynamics of task-based conversation about work objects that are not corporeal but are rather representations of corporeal objects. While this kind of communication is typically found in expert-novice dialogue for the purpose of demonstrating or instructing about computers, it is also (in some sense) fairly typical of white collar task interaction where the conversational referent is not physical but is often a representational artifact resident on a computer screen.

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[Final Note: The full paper, containing the transcriptual data and the detailed micro-analysis of that data, is available on request.]