Symposium on Miscommunication

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Miscommunication

Communication is critical to social organisation. It is also a fragile process. People often differ in their interpretation of utterances, gestures and even entire conversations. For Fodor and Lepore it is a "patent truth that no two speakers of the same language ever speak exactly the same dialect of that language" (1992. p.10). If latent misunderstanding is a routine feature of interaction, then this raises fundamental conceptual and methodological issues for the cognitive sciences.

Concepts of communicative success are intimately interconnected with concepts of representation and meaning (Taylor, 1992). Frege argued from the fact that different individuals can grasp the same meaning to the conclusion that senses could not be private psychological states (Schweizer, 1991). For Locke, senses were private psychological states and communication was successful only if the words used "excite in the hearer exactly the same idea they stand for in the mind of the speaker" (Locke, 1690; III.ix.6). Proposals for an innate species-wide 'mentalese' are designed, in part, as a nativist response to the problem of how meaning could be shared (cf. Fodor, 1975).

Psycholinguistic research has primarily concentrated on intra-individual processes of production and comprehension where (non-pathological) cases of miscommunication do not arise (c.f., Clark, 1996). Partly as a consequence of this models of that do address inter-individual co-ordination have focussed on explaining successful communication and treated misunderstanding as a special case (Pickering and Garrod, 2004; Clark, 1996; Krauss and Fussell, 1996).

The empirical approach that pays closest attention to phenomena associated with miscommunication is Conversation Analysis. Drawing on the ethnomethodological tradition, conversation analysts discount questions of meaning and representation, arguing instead that communicative success is a practical, not conceptual, problem: people mean the same thing just in case they treat each other as meaning the same thing (Garfinkel, 1967; Schegloff, 1992).

This symposium will explore the theoretical and methodological implications of a focus on miscommunication for theories of representation and meaning. Drawing on computational modelling, conversation analysis, formal semantics, philosophy of language and psycholinguistics, it will explore: concepts of communication failure, identity conditions for representation and meaning, the detection and resolution of miscommunication, cross-linguistic and cross-modal miscommunication, the formal semantics of miscommunication and language coordination through negative feedback.

In addition to their foundational significance, these issues have important practical ramifications for any area in which conflicts in understanding are an issue. They impact, amongst other things, on the effectiveness of instructional dialogues, the evaluation of human-human interaction, the design of technologically mediated communication and the development of robust human-system dialogues.

Speakers

Dr. Jonathan Ginzburg
Kings College London:
"Clarification Requests in Conversation"

Abstract: Clarification requests (CRs) are utterances that occur when the preceding utterance is not fully understood, exemplified in the reactions (1b) to the utterance (1a):
[A:] Did Bo kowtow?
[B:] What do you mean kowtow?

CRs are a significant but understudied aspect of human interaction that is also of increasing practical interest (interaction that allows for partially successful communication is significantly enhanced over one that requires a complete restart of an attempted communicative act whenever it is not 100% successful.).

In this talk I will sketch a model of conversational interaction that allows us to characterize the potential for CRs. I will explain how this allows us to improve over existing notions of semantic compositionality, point out the evidence CRs shed on the semantic/pragmatic borderline, and mention some intriguing corpus results about asymmetries in the CR potential between nouns and verbs.

Dr. Patrick G.T. Healey
Queen Mary University of London:
"Communication as a Special Case of Misunderstanding"

Abstract: Theories of communication in the cognitive sciences have tended to assume that successful dialogue is underwritten by some basic level of shared meanings.

Often, this is taken to be definitive of what "speaking the same language" means. This paper explores the implications of abandoning this assumption of semantic transparency in favour of an account of communication in which the key mechanism of co-ordination is the detection and resolution of misunderstandings.

I will present experimental data which indicate that a) over the course of a number of interactions sub-groups converge on relatively well-specified, semantically 'fine-grained', *but* community specific 'sub-languages' b) a key response to misunderstanding is to shift from these relatively well-defined semantic ontologies back to the vaguer, more *ad hoc* models they began with.

I will use these findings to argue that communicative co-ordination is ultimately underwritten by the opportunities for joint manipulation of external representations (including speech, drawings, gestures etc.) available through direct interaction -not a prior repertoire of shared meanings or concepts for those representations.

Dr. Jan Peter de Ruiter
Max Planck Institute for Psycholinguistics
"Verbal and nonverbal signals of misunderstanding"

Abstract: Listeners have several means at their disposal to signal to a speaker that they have misunderstood something. One way is to use their next turn to request a clarification. Listeners also frequently express misunderstanding in facial expressions, most notably by raising the eyebrows. In contrast to verbal signals, the eyebrow raise can be produced without claiming a conversational turn. Listeners also raise their eyebrows when the speaker is not looking at the listener, e.g., in situations with infrequent eye-gaze or on the telephone. Eyebrow raise can thus be seen as a symptom of misunderstanding as well as a signal.

This raises some interesting questions. First, is eyebrow raise used to pre-signal to the listener that a verbal request for clarification is impending? If this is the case, detecting a human eyebrow raise in a multimodal interface could forewarn a HCI system that the understanding of the human listener is suboptimal. Second, do speakers detect the eyebrow raise of their interlocutor peripherally? And if so, do speakers respond immediately to this signal by initiating some kind of self-repair (cf. Clark, 1996)?

By studying a large multimodally annotated corpus of dyadic route negotiations, these questions are addressed by analysing the verbal and nonverbal behavior of the participants, using both quantitative (statistical), and qualitative methods similar to the ones used in Conversation Analysis.

Dr. David Traum
University of Southern California
"Miscommunication: the Good, the Bad, and the Ugly"

Abstract: Miscommunication is a frequent occurrence in human interaction and human-machine interaction. It is often seen as an impediment to successful interaction, and steps may be taken to avoid or ignore it. However, miscommunication can be beneficial as well. For example, in a collaborative learning situation, miscommunication can point out conceptual disagreements that can lead to a deeper understanding of issues. Likewise, realization of an other as having different beliefs or values can lead to openness and more ethical consideration of that other's point of view.

McRoy and Hirst distinguish three types of miscommunication: Misunderstanding, where one participant believes she has a complete and correct interpretation which is not what was intended by the other participant, Non-understanding, in which a participant fails to obtain an interpretation or obtains more than one interpretation, and misinterpretation, in which the best interpretation suggests that beliefs about the world are out of alignment. Each of these can be a source of clarification and repair in dialogue. Non-understanding is potentially 'ugly': communication seems impossible or disfluent. Misunderstanding is potentially 'bad': participants may end up with incompatible views while believing that they agree. Misinterpretation, however, is generally the source of positive work toward integration of various perspectives, and thus to be encouraged in collaborative learning situations.

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