Dialogue in the degenerate case?

Patrick G. T. Healey

Department of Computer Science, Interaction, Media, and Communication Research Group, Queen Mary, University of London, London E7 0QY, United Kingdom. **ph@dcs.qmul.ac.uk** **http://www.dcs.qmul.ac.uk/~ph**

Abstract: The interactive alignment model treats within- and between-individual co-ordination as essentially equivalent. It is argued that this leads to a conservative account of alignment that presupposes high levels of linguistic and conceptual co-ordination. Data from the maze task are used to argue that this approach is not sufficient to account for important co-ordination phenomena.

Pickering & Garrod (P&G) bring together a large body of empirical evidence that highlights an important phenomenon. Participants in dialogue display higher levels of phonological, lexical, syntactic, semantic, and situational co-ordination than is expected from considering processes of production and comprehension in isolation. The authors propose that the central mechanism driving this level of communicative alignment is priming. This is envisaged as an automatic, bidirectional process operating in parallel on several different levels of representation. Importantly, they suggest that this process operates in essentially the same way both within and between speakers.

The treatment of dialogue participants as effectively interchangeable embodies a strong claim. It presupposes a high degree of equivalence between the representational systems underpinning communicative co-ordination. In places this is qualified as equivalent "in all essential respects" or "basically the same." However, in cases where priming is the mechanism of alignment, the residual differences between individual's representations are irrelevant.

What could underwrite the requisite similarity in mental representation? Priming is itself a conservative mechanism that alters the accessibility but not the form or content of the associated mental representations. For example, the account of co-ordination in the maze game distinguishes a basic repertoire of situational models of the maze (figure scheme, path scheme, line scheme, and matrix scheme) and a variety of referring expressions built up from the lexicon, syntax, and semantics of a fragment of English (Garrod & Anderson 1987). By hypothesis, the same basic repertoire of mental models and fragment of English are available to both participants prior to co-ordination. Priming does not change the repertoire; rather, it promotes alignment by favouring one particular model and its associated referring expressions.

Interactive alignment predicts that when maze game participants co-ordinate on a particular description and situational model, it should become more strongly primed, and they should stick with it. However, several aspects of the experimental data do not fit this prediction. Evolution and development of description schemes are common. As P&G observe, maze game pairs often develop their own idiosyncratic description schemes. Pairs switch description schemes frequently; for example, the isolated pairs in Garrod and Anderson (1987) and the non-community group in Garrod and Doherty (1994). Moreover, pairs do not reliably co-ordinate on the scheme that is most highly primed initially. For example, in Garrod and Doherty's (1994) community group, the line scheme is most frequent initially, but they subsequently co-ordinate on a matrix scheme.

In order to account for phenomena of this kind and to provide for co-ordination where participants are not effectively interchangeable, P&G propose iterative interactive repair as a key additional co-ordination mechanism. If a participant cannot find an interpretation for an utterance, he or she either shifts perspectives until an interpretation can be found or reformulates. This suggestion is not developed in detail, but it appears P&G envisage this basic form of repair as a shift between different co-ordination equilibria in the sense of Lewis (1969).

Data from the maze task suggest that this is inadequate. The results reported by Garrod and Anderson (1987), Garrod and Doherty (1994), and Healey (1997; in preparation) indicate underlying patterns of migration from figure and path schemes to more abstract line and matrix schemes. In addition, when maze game pairs have trouble co-ordinating, there is evidence that they show a reliable preference for shifting to a more basic (figure or path) scheme. The direction of these shifts is not predicted by frequency of prior exposure (Healey 1997; in preparation).

These observations show that the choice between different situational models is not neutral in the way that a co-ordination game or priming mechanism presumes. It is sensitive to the particular properties of the different situational models and, presumably, this relates to their implications for co-ordination. The pattern of preferences for shifts in description scheme and/or reformulations needs to be accounted for by the co-ordination mechanisms.

P&G aim to provide a model of dialogue co-ordination that avoids implausible assumptions about interlocutors constructing elaborate models of each other's context and mental states. This is surely right. Explicit negotiation and repair are relatively rare and do not provide a general account of co-ordination. However, the mechanisms of the interactive alignment model do not seem to do the work required.

Ironically, the idealisation of speaker and hearer as interchangeable reproduces one of the problems with treating dialogue as a form of monologue: the implication that participants are linguistically and conceptually transparent to one another. Interactive alignment focuses on dialogue in the degenerate case: interactions in which people are, in a sense, already co-ordinated. As P&G note, dialogue is important partly because it is the primary context for exposure to and acquisition of language. But this is also the situation in which the assumptions embodied in the interactive alignment model are least likely to be satisfied.

Interactive alignment: Priming or memory retrieval?

Michael Kaschak[a] and Arthur Glenberg[b]

[a]*Department of Psychology, Florida State University, Tallahassee, FL 32310;* [b]*Department of Psychology, University of Wisconsin, Madison, WI 53706.*
kaschak@psy.fsu.edu **glenberg@facstaff.wisc.edu**

Abstract: Pickering & Garrod's (P&G's) interactive alignment model explains the existence of alignment between speakers via an automatic priming mechanism. We propose that it may be preferable to explain alignment through processes of memory retrieval. Our discussion highlights how memory retrieval can produce the same results as the priming mechanism and presents data that favor the memory-based view.

Pickering & Garrod (P&G) claim that dialogue is marked by a great degree of alignment between interlocutors. The alignment is taken to arise from the operation of a largely automatic priming mechanism. We suggest that much of what P&G ascribe to the operation of a priming mechanism can be captured by a memory-based view of language processing.

The memory-based view is rooted in the assumption that language processing is performed against the background of one's experience. The comprehension of an incoming utterance is guided by experience of utterances with similar structures and meanings, just as experience communicating via speech shapes the production of utterances. This assumption forms the basis of many extant psycholinguistic theories: constraint-based approaches to sentence processing (e.g., MacDonald et al. 1994), memory-based models of text processing (Myers & O'Brien 1998), and theories of lexical access (Goldinger 1998). The memory retrieval mechanism is what has been called a "global matching" process (e.g., Hintzman 1986). That is, the memory retrieval process involves a global, parallel search of memory that is influenced by both contextual and temporal factors (e.g., the retrieval process shows a recency effect when recently processed language is treated as a separate context from previously processed language).

https://doi.org/10.1017/S0140525X04330050 Published online by Cambridge University Press