

Dialogue in the Degenerate Case?

(Commentary on Pickering and Garrod "Toward a Mechanistic Psychology of Dialogue" Behavioral and Brain Sciences 2003.)

Patrick G.T. Healey
Interaction, Media, and Communication Research Group,
Department of Computer Science,
Queen Mary, University of London,
London E1 4NS.

+44(0)20 7882 5211
ph@dcs.qmul.ac.uk.
http://www.dcs.qmul.ac.uk/~ph

Abstract:

Pickering and Garrod bring together a large body of empirical evidence that highlight an important point. 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.

They 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 itself is 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 and 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 doesn't change the repertoire, rather it promotes alignment by favoring 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 is common. As P & G observe, maze game pairs often develop their own idiosyncratic description schemes. Pairs switch description schemes frequently e.g., 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's 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 they either shift perspectives until an interpretation can be found or reformulate. 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 prep) 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 prep).

These observations show that the choice between different situational models is not neutral in the way that a co-ordination game, or priming mechanism, assume. 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 particular directions to shifts 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.