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Martin J. Pickering and Simon Garrod: UNDERSTANDING DIALOGUE: LANGUAGE USE AND SOCIAL INTERACTION, Cambridge University Press, 2021.

In an earlier report on their project, the authors asked: 'Why is conversation so easy' (Garrod and Pickering 2004)? In this comprehensive update they show how the study of dialogue in social interaction uncovers problems that are really hard. It turns out that the interacting components of dialogue ability form a highly intricate cognitive network that research to date has only partially described. This book is about the extensive constellation of systems that underlie what to the naked ear sounds like simple conversation.

Compared to a monologue, understanding of a lecture or text comprehension, controlling for the same related factors, informal face-to-face dialogue is 'easy' in the sense that the requisite abilities do not involve extensive preparation or school-related learning. Conversational ability is acquired naturally by exposure to experience in society alone, by observing and listening. The authors mention this contrast in passing and then proceed to describe the component skills and knowledge structures that all normally developing children acquire, without any kind of instruction or focused learning. In fact, research might show that the required experience (positive evidence without the need of corrective feedback) that triggers the underlying processing mechanisms and competencies turns out to be minimal. But as readers will readily appreciate, there is nothing simple, cognitively, about this ability set. The analogy would be to the underlying processes that implement the knowledge of one's first language (L1), phonology, and syntax at age six, 'easy' as in acquiring the use of echolocation for navigating the crowded night forest for juvenile micro bats. An important implication is presented: that dialogue is evolutionarily more basic, suggesting that language emerged in our ancestors for interactive use. Among the abovementioned language abilities, dialogue also emerges developmentally during the first years of childhood. In this sense it is 'basic' (pp. 68, 117, 211). The distinction that appears then is between what researchers in acquisition and learning describe as:

- System 1 (primary—evolutionarily early, acquired implicitly, universally accessible and automatic) and
- System 2 (secondary).

The chapters do not dwell on this theoretical problem, but it is hard not to suspect that this is where things are heading in the fascinating and important line of investigation summarized by the authors.

Part I begins with the concept of shared workspace, object of shared attention linked to a system in which interlocutors construct similar representations. A seemingly fundamental aspect of human cognition impels us to structure common attention and joint activity by inferring parallel thinking

processes. According to this section, we are designed for dialogue, for practical cooperative tasks. Thus, the first model of distributed control—for analyzing each individual's internal processing—begins with cooperative joint activities in general, to be subsequently applied to (verbal) dialogue. The external shared workspace is the observable that we perceive and manipulate. The internal mental representations consist of joint action planner and joint action implementer. Crucially, the model for the cognitive structures for dialogue—*planner* and *implementer*—elegantly maps onto Levelt's (1999) framework of *message generation/conceptualizer* and *formulator* (see the explanation in pp. 91–93, 119–123). In turn, it neatly corresponds to Jackendoff's (2002) Parallel Structure proposal that maintains a separation between the interacting domains of *conceptual structure* and the *linguistic structures*, of phonology and syntax. The concurrence among the three models appears all the more compelling given the point of departure (from Part I) in the processing of non-linguistic joint cooperation.

Part II sets out the details of the concept of alignment of mental representations, central mechanism that the research on dialogue turns on—alignment of:

- (1) the situation model/game model and (2) language patterns. These correspond, respectively, to
- (1) planner, or conceptualizer and (2) implementer, or formulator, following the three concurring models above.

All of the components are massively intercommunicated. For example, aligning on a pattern of (2) supports aligning on an aspect of (1).

We are now squarely in the realm of face-to-face linguistic interaction. The focus of the analysis is not so much on the observable behavior (in the workspace), but on the mental representations. For the dialogue to prosper, the representations must align well enough, along the dimensions of (1) and (2), and across time. The step-by-step alignment is *focal*, and across the dialogue as a whole, *global*. Here, Chapter 6 reminds us that the commitment on the part of each dialogue partner to maintain alignment is not the same as agreement on assertions or even about a central overall claim of an argument that is the topic of their exchange. One difference is that alignment is largely automatic, not readily accessible to deliberate reflection; in contrast, agreement is all about awareness and reflection. Readers can consider a number of good examples regarding the distinction, despite the obvious interaction between alignment and agreement. The research on dialogue takes the content of each interlocutor's thoughts into account but mainly to understand the relationship between the two. The relationship is constructed, cooperatively, as each partner interprets the information that is placed in the shared workspace. They can then reflect upon the degree of alignment itself.

Part III is about synchronization. Because of the severe limitations of working memory and the fleeting passage of information in the shared workspace, joint efficiency and the marking of time have to be maintained by the aligned

dialogue partners. They make use of simulation, prediction, and monitoring, in synchrony. The unconscious rules of efficiency, optimizing the use of the workspace, are:

- 'say just enough but no more' (p. 187) and
- '[dance] at the same rate and in phase' (p. 192).

Well-timed cycles successfully manage focal misalignment collaboratively and rapidly, to get back in step, and to then stay in coordination globally. In this domain of dialogue (about order and timing) an interesting cross-cultural aspect of joint monitoring is the problem of turn-taking, where the underlying rules may be the same but where the exact setting for expectations differs between interlocutors.

Chapter 10 (in Part IV) presents a challenge: how, or what aspects of, the dyadic conversation framework might apply to monologue and other noninterpersonal discourse abilities? The interesting question that comes up is the role of awareness—metacognition and Theory of Mind (ToM), because developmentally advancing metalinguistic awareness and metacognitive operations are the hallmark of System 2 capabilities. To this question, an important component of successful dialogue is meta-representation of alignment by joint actors—when the interlocutors become aware of alignment or misalignment. Recall that alignment, per se, is largely kept on track by processes *below awareness*, for example, by priming effects (pp. 129, 176). Thus, automatic alignment is 'first order', whereas the role of commentary is to indicate (higher order) metarepresentation of alignment (p. 188). The rapid computation of the latter makes efficient repair of error or subtle discrepancy possible. Developing ability in the domain of alignment metarepresentation by young conversationalists is surely acquired early, in line with the evidence of emerging ToM among three- and four-year olds. An interesting question for further research will be to gauge the variation, with development, of the ability to metarepresent alignment in conversation. Here, we are considering the tentative idea that ultimate attainment is not distributed uniformly among all adults. Related to the question of individual differences will be one of origins: that the precursor stages of metalinguistic awareness might begin to emerge from experience with the demands of cooperative joint action and incipient awareness of alignment in dialogue. The managing of more and more difficult kinds of dialogue will conceivably reveal variation, related to more complex metarepresentation of alignment. Then, in a possible application of the conversation framework to monologue and text comprehension ability, full-blown strategies of higher order metacognition and metalinguistic awareness present themselves. One example, familiar to metacognitively aware readers, is the need to accurately assess the alignment between the conceptual framework of the textbook author and their own, that can then call upon available context support and *relevant* background knowledge.

The broader problems that the conclusion ends with bring us back to the question that was asked at the beginning. The findings of their project will

have important implications for understanding the cognitive architecture that subserves:

- typical face-to-face conversational ability, particularly in how it differs from
- what is termed secondary discourse ability (SDA).

Arguably, SDA is a System 2 ability. Research on the first network of competences and processing mechanisms (for conversation) reveals a vast complexity. The complexity of the second, in important ways (not in all ways), appears to be of a different kind.

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