Simulation semantics and the limits of language comprehension

Recent, embodied theories of meaning known as 'simulation semantics' posit that language comprehension is accomplished via mental simulation (Bergen et al, 2003; Kaschak & Glenberg, 2000). However the meaning of 'comprehension' varies according to the researcher's perspective on interpersonal communication. Influential models in social psychology have emphasized that in realistic communication, comprehension not only involves a process of decoding information, but also involves exchange of intentions and perspective-taking during collaborative interaction (Krauss & Fussel, 1996).

In this paper, we argue that the way comprehension is characterized in experimental simulation semantics is rather narrow, as it largely ignores these social aspects of communication. Despite being innovative in many ways, simulation-based theories of comprehension draw upon traditional encoding-decoding paradigms in the sense that they assume that people converse in full sentences (as opposed to intonation units; see, e.g., Chafe 1994), and that the meaning of a sentence is taken to be inherently carried by the sentence itself, i.e. meaning is separated from the communicator’s intentions. We propose how the scope of simulation semantics can be extended to account for comprehension in real face-to-face communicative scenarios, thus predicting the limits of language comprehension (i.e., comprehension failures).

First we consider the role of mental simulation in language production. Based on McNeill's (1992) and others' suggestion that mental representation underlying language production has a partly imagistic character, we argue that comprehension can be viewed in terms of the degree to which interlocutors’ simulations of some content are sufficiently matched for the current purpose. In this regard, the literature from simulation semantics helps make more explicit predictions as to what it means for interlocutors' mental representations to be homologous.

Second, we propose two conditions for integrating simulation semantics with a 'dialogic perspective' on communication, a paradigm in social psychology that takes comprehension to be the product of a collaborative process of establishing shared conceptualizations (Rommetveit, 1983). In order to define dialogical comprehension in terms of mental simulations, it must be supposed that (1) simulations are dynamically co-constructed during conversation, and (2) simulations are endowed with a 'confidence dimension': interlocutors retain a level of certainty of having synchronous simulations of the expressed information. These suppositions make it feasible that interactive alignment and feedback mechanisms help to establish mutual confidence of having coordinated simulations.

Third, we consider how simulation semantics relates to the 'intentionalist' view of comprehension, taking communication as the exchange of intentions (vid. Relevance Theory [Sperber & Wilson, 1986]). Although recent research (Gallese, 2007) suggests that pragmatic inference is an embodied activity and not completely independent of mental imagery, the precise relation between understanding information and understanding intention remains hard to specify. Accordingly, comprehension failure in the form of misreading the intentions behind an utterance might be on the periphery of what simulation semantics can predict.

By taking these three additions into account, simulation-based theories may more closely approach a complete account of language comprehension, predictive of when human language works to communicate something, and when it doesn’t.
References


