Do speaker-specific cues influence ambiguous word interpretation?

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Speaker identity has been shown to be an influential factor in language processing across multiple linguistic domains, e.g. phonetics, syntax, reference, and pragmatics. Addressees use information from speakers’ previous discourse to make predictions about incoming linguistic material and to restrict the choice of potential interpretations. For example, addressees disambiguate words during the earliest moments of processing based on whether a particular speaker had previously produced the same word (Creel et al., 2008). Addressees also disambiguate syntactic structures based on previously modelled attachment preferences by particular speakers (Kamide, 2012). In pragmatic processing, partner-specific stored information may be especially helpful in disambiguating intended meaning. For example, contrastive inferences are suspended if a particular speaker has been habitually over-informative (Grodner & Sedivy, 2011), and addressees adapt to speaker-specific biases in the intended meaning of scalar quantifiers (Yildirim et al., 2016).

Our study used polysemous words with metaphorical extensions, e.g. head; chair; fork, which can be interpreted to refer to a dominant, literal meaning, as well as to a lower-frequency, metaphorical meaning, to investigate the extent to which speaker-specific cues influence semantic interpretation. Using an exposure-test design, speaker identity was manipulated by training participants to associate a specific speaker with a highly literal or a highly metaphorical style. At test, participants responded to video instructions from each speaker to ‘click on the X’ while their eye movements were tracked using the visual world paradigm. We hypothesised that participants would ultimately resolve reference to the literal target (LT, e.g., dinner fork) rather than the metaphorical target (MT, e.g., fork in the road) in both speaker-style conditions due to its meaning dominance. However, if addressees use speaker-specific information to disambiguate referring expressions, we predicted that participants would experience interference from the MT in the metaphorical speaker condition, indexed in that condition by i) longer reaction times for resolution to the LT in the metaphorical style condition; and ii) a lower proportion of looks to the LT while processing the ambiguous noun.

As expected, across speaker conditions, 89% of referring expressions were resolved to the LT and 10% to the MT (the remaining 1% were unresolved before timing out). Contrary to our prediction, there was no effect of speaker style on reaction times. Given the dominance of LT responses, we examined gaze data from noun onset to trial end on trials resolving to the LT. GLMER was used to analyse LT preference (i.e., looks to the LT vs. looks to the MT) as a function of speaker style. As Figure 2 shows, a significant effect was found in two critical time windows. In the early window (400-850ms), participants’ preference for the LT was significantly reduced in response to the metaphorical speaker (estimate = -1.69, SE = 0.64, p < .01), as hypothesised. Conversely, in the late window (850-1300ms), participants’ preference for the LT was significantly greater in response to the metaphorical speaker (estimate = 1.62, SE = 0.57, p < .01). This suggests early anticipation and interference of the MT in response to the metaphorical speaker. The later preference for the LT in this condition is likely due to participants double-checking the initial
interpretation. These patterns reflect listeners’ assumptions that the metaphorical speaker may have intended the expressions to have a non-literal meaning.

Our results support accounts proposing that semantic comprehension involves rapid integration of multiple cues including those of a social nature (Rodd, 2017). We provide evidence that speaker style is a contextual determinant in semantic disambiguation using polysemous words. Our findings extend the literature on partner-specific effects to the domain of semantic processing.

References