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The Effect of Speaker-Specific Information in On-Line Pragmatic Inferencing

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Contrastive Inferences

Sentences frequently convey more information than they explicitly contain. For instance, suppose a speaker uses a noun phrase (NP) modified by an adjective, as in “the tall cup.” In this situation, perceivers infer the existence of two sets of entities in the discourse: (1) a target set corresponding to the literal denotation of the expression (e.g., a tall cup), and (2) a contrast set containing an object matching the noun, but differing by virtue of the property expressed by the adjective (e.g., a short cup). Evidence for the latter inference comes from monitoring perceiver eye-movements as they listen to spoken instructions. In particular, in the presence of a contrasting object, individuals identify target objects faster and make fewer spurious looks to competitors that share the adjectival property (e.g., a tall pitcher) (Sedivy, et al, 1999). These effects can be observed within two hundred ms of the onset of the head noun.

Existing evidence suggests that contrastive inferences arise from an understanding between conversational participants that speakers are only as informative as they need to be (Grice, 1975). A simple NP (e.g., “the cup”) would suffice to pick out the intended referent in a context with only a single entity. When a speaker uses a more elaborate form, the perceiver infers that a different state of affairs prevails. The adjective is most easily made informative by attributing to it a distinguishing function.

In support of this view, contrastive inferences only arise for adjective types that are not used to label objects in isolation. Scalar and material adjectives are rarely used to label objects in isolation, whereas color adjectives are frequently included in such descriptions. Correspondingly, scalar and material adjectives are interpreted contrastively, but color adjectives are not (Sedivy, 2001). This effect is driven by discourse-level expectations and not the semantic class of the adjective. When color is a highly predictable property of an object (e.g., a yellow banana), color modifiers are rarely used in default labels. In this case, the use of a modifier is seen as overly informative and the modifier is interpreted contrastively.. (Sedivy, in press).

Because default descriptions are statically linked with individual referents, the inferences explored in the above studies do not require that perceivers consider the circumstances of the immediate discourse. Perceivers might reflexively infer a contrast upon deviation from a stored default form. In theory, many different factors might be weighed in deciding whether a modified form should be interpreted contrastively. These include the intrinsic properties of a referent, the linguistic context, the reliability of the speaker, the intentions of the speaker, and so on. It is

unlikely that all of these are considered in the limited time frame that contextual contrast effects have been observed.

Manipulating Speaker Reliability

The present study demonstrates that contrastive inference is indeed responsive to an aspect of the immediate discourse, namely speaker reliability. Participant eye-movements were monitored while listening to instructions. Participants were divided into reliable and unreliable speaker conditions. The impression of unreliability was conveyed in three ways: (1) Participants were told that the speaker had “an impairment that caused language and social problems” (2) The speaker mislabeled objects and locations in filler trials, (3) The speaker consistently used overly informative labels for referents. Critical instructions used a modified NP to refer to a target object (e.g., “Pick up *the tall cup.*”) in the presence or absence of a contrasting object.

Combined looks to target and competitor objects reliably departed from looks to other objects in the display at the same latency for each speaker condition. Thus, all participants responded to the literal meaning of the adjective on an identical time course. In contrast, evidence for the non-literal inference associated with the adjective was only present with the reliable speaker. For the reliable speaker, there were faster looks to the target and fewer looks to the competitor in the presence of a contrasting object. For the unreliable speaker, no significant effect of contrast emerged. This indicates that contrastive inferences are sensitive to the particulars of the communicative situation and are not just an automatic reflex of a highly-general bias. Initial block analyses suggest that the attenuation of the effect of contrast is more dependent on the accumulation of evidence that informativeness expectations are violated rather than the explicit identification of the speaker as non-normal

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