

The Triggers and Time-Course of Gricean Implicature

How can the flexibility of pragmatic inferences be reconciled with their speed? A possibility suggested by Neo-Griceans is that certain implicatures are conventionalized so that only a limited amount of potentially relevant information enters into their computation.ⁱ In contrast, Relevance theorists propose that all implicatures are particularized to their circumstances and there are no principled limits on the types of information used.ⁱⁱ The present paper examines what types of information affect contrastive inferences (CIs). CIs can occur when a prenominaly-modified DP is used to refer (e.g., "the striped cup"). In this case, comprehenders accommodate a target set corresponding to the literal denotation of the expression (e.g., a striped cup), and typically infer the presence of a contrast set matching the noun, but differing by virtue of the property expressed by the adjective (e.g., a non-striped cup). Evidence for this inference comes from monitoring perceivers' eye-movements as they listen to spoken instructions. 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 striped hat). These effects are observed rapidly, within 200 ms of the onset of the head noun.ⁱⁱⁱ

Evidence suggests that contrastive inferences arise from the application of Grice's second maxim of quantity^{iv}. A simple DP (e.g., "the cup") would suffice to pick out the intended referent in a context with only a single entity. When the 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 the Gricean basis of CIs, they are non-detachable,^v they are defeasible,^{vi} and they are not tied to the lexico-semantic properties of any particular modifier. They occur whenever speakers elaborate on the default description that would be used to label an object in isolation.^{vii}

Because default descriptions are statically linked with individual referents, CIs might not appeal to idiosyncrasies of the immediate discourse, but could be triggered by any deviation from a stored default form. This is the account of conventionalized implicature offered by Levinson (2000). In contradiction of this view, the present work demonstrates that CIs are indeed sensitive to an aspect of the immediate discourse: speaker reliability. Eye movements were monitored while participants responded to spoken instructions. In critical instructions a modified DP referred to a target (e.g., "Move the tall cup.") in the presence or absence of a contrast (e.g., short cup). Participants were divided into reliable- and unreliable-speaker conditions. The impression of unreliability was conveyed in three ways:

- (1) Participants were told the speaker had "language and social problems"
- (2) The speaker mislabeled objects and locations in filler trials
- (3) The speaker consistently used overly informative object labels.

For the reliable speaker, looks to the target object were faster in the presence of a contrast, and there were fewer spurious looks to the competitor (e.g., tall pitcher). For the unreliable speaker condition, eye movements were as closely time-locked to the literal meaning of the modifier as those for the reliable speaker. However, there was no effect of contextual contrast, indicating that no CI was generated for unreliable speakers.

The results indicate that situation-specific information can influence early inferencing, *pace* Levinson. However, block analyses suggest that the attenuation of the CI for unreliable speakers arises not from the high-level identification of the speaker as unreliable (factors (1) and (2)), but from the accumulation of evidence that the modifier is not reliably correlated with a contextual contrast (factor (3)). It is possible that the types of information consulted in early inferencing may still be limited. Results from a second experiment directly addressing this issue will also be presented.

ⁱ Gazdar, G. (1979). *Pragmatics*. New York: Academic Press.; Horn, L. (1989). *A Natural History of Negation*. Chicago: University of Chicago Press.; Levinson, S. (2000). *Presumptive meanings: The theory of generalized conversational implicature*. MIT Press.

ⁱⁱ Carston, Robyn (1998). *Pragmatics and the Explicit-Implicit Distinction*. Blackwell, Oxford; Sperber, D. & Wilson, D. (1995). *Relevance: Communication and Cognition*. Blackwell Publishers.

ⁱⁱⁱ Sedivy, J., Tanenhaus, M., Chambers, C., & Carlson, G. (1999). Achieving incremental semantic interpretation through contextual representation. *Cognition*, 71, 109-147.

^{iv} Roughly: Don't make your contribution more informative than is necessary for the purposes of the present exchange (Grice, P. (1975) *Logic and Conversation*. In P.Cole & J. Morgan (Eds.), *Syntax & Semantics*. New York: Academic Press.)

^v For instance, use of the expression, "The cup with stripes" implicates the same contrast.

^{vi} As in, "Use the striped cup because there are no other cups."

^{vii} Sedivy, J. (2003) Form-based vs. pragmatic accounts of referential contrast. *Journal of Psycholinguistic Research*.