

Redundant Scalar Implicatures

Abstract

In the long-standing debate around the mechanisms of scalar implicatures (SIs), experimental work has focused on whether SIs are 'default' or 'contextual'. Defaultism covers both the possibility that SIs are automatic enrichments of lexical meaning (Levinson 2000) and that they are achieved by the activation of a grammatical exhaustivity operator (Landman 2000 Chierchia 2004). In the experimental literature, contextualism has predominantly been identified with a Relevance Theoretic (RT) approach (Sperber and Wilson 1995) in which SIs arise only if they are germane to the needs of the current discourse context (Noveck 2001, Geurts 2009). Our work focuses on an understudied prediction which distinguishes default from RT accounts. As noted by Magri (2009), default accounts predict that SIs arise even when their content is informationally redundant. Using a priming paradigm, we explore whether scalar implicatures are calculated even when "*not all*" is shared knowledge. The study has implications for understanding the process of implicature computation and for understanding implicature sentences in thought. The relevance to thought lies in the proposed shared knowledge manipulation, given that the manipulation simulates a property of internal self-talk whereby a speaker already knows the status of potentially implicated meanings if such knowledge is in their own common ground. In thought, people are assumed to have common ground with themselves. The findings will contribute to open questions in semantics and pragmatics, specifically, the processing patterns and interpretive mechanisms of scalar implicatures.

Introduction

Gricean and RT accounts treat implicatures as context-dependent, inferred from speaker intention, assuming distinct speaker and hearer roles. In thought, however, the person himself serves as both. Thus, under contextualists accounts, implicatures in thought are impossible because: First, thought lacks true communication, making implicature redundant (Speaks 2006); Second, implicatures in thought may reflect pre-existing beliefs rather than contextually derived meanings (Alhuwayshil 2014). Thus, Speaks argues they do not occur in thought.

Background & Motivation:

While it is tempting to dismiss implicatures in thought as redundant beliefs, I argue that sentences in thought often mirror conversational sentences, including implicatures. For example, John, reflecting on Mary's illness, speculates about the possible presence of spoiled food and says to himself, "Wait! I ate some of that meat too"; such an utterance could imply he ate some but not all of the meat." A question arises as to whether implicature processing occurs even when the person themselves already knows the implicated meaning. This inquiry also extends to whether implicature computation persists when the stronger alternative is shared knowledge. Thus, understanding implicature in thought has repercussions for:

- (a) Implicature computation:** How implicatures are derived;
- (b) Decision-making:** How implicature influences subsequent cognitive processes.

SIs involve reasoning about alternatives on a scale (Horn 1972):

- (1) Bart: *Do you need to leave, John?* John: *"Some students are waiting for me." => Not all students are waiting for me.*

Hearers derive implicatures by considering the stronger alternative "all" that the speaker could have used but did not, inferring it to be *false*. However, consider:

- (2) *Some mammals lay eggs.* [this is a true statement because Monotremes lay eggs]

Here, "not all mammals lay eggs" is common knowledge. This raises the question: Does implicature computation still occur, or does shared knowledge render it unnecessary? Here the theoretical accounts differ: **RT** suggests scalar implicatures are context-dependent, ceasing when 'not-all' is known; **Defaultists** propose them as default semantic inferences (Chierchia 2004)

The experiment

In the paradigm used here, participants see prime-target pairs, with the prime trial varying across 1-3 below and the target trial always containing the same candidate implicature, whose interpretation decision and speed we analyse. In each trial, they view a visual sample of eggs and hear a description of the carton the sample was taken from (e.g., "some of the eggs are white"). Target trials consistently allow a some-but-not-all implicature (e.g., "some of the eggs are white" when the sample is two white eggs). The experiment tests whether implicature processing in preceding prime trials facilitates implicature generation in target trials:

1. **No Implicature Prime:** "All of the eggs are brown," with a sample of brown eggs. Prediction: No facilitation at the target trial.
2. **Standard Implicature Prime:** "Some of the eggs are brown," with a sample of brown eggs. Prediction: Facilitation at the target trial.
3. **Common Ground Prime:** "Some of the eggs are white," with a sample of brown eggs. Prediction: Gricean theory predicts no facilitation, while defaultists theorists predict facilitation due to implicature activation.

Results:

Prime trial reaction times showed little difference across prime conditions and for target trials, participants were faster to click some-but-not-all following the implicature-present and common-ground primes, compared to the implicature-absent prime. Prime trial results replicate prior findings that implicature calculation is costly, and the target trial results suggest that the common-ground condition resembles the implicature-present condition.

Prime Trials Responses

image clicked	condition	reaction time
mixed	Prime trial: [common ground condition]	6976
mixed	Prime trial: [implicature present condition]	6969
brown	Prime trial: [implicature absent condition]	6930

Target Trials Responses

image clicked	condition	reaction time
mixed	Target trial: [common ground condition]	6662
mixed	Target trial: [implicature present condition]	6758
mixed	Target trial: [implicature absent condition]	6856

Conclusion

To further understand the underlying processing dynamics, we will incorporate mouse-tracking data, which is currently being analysed. The hypothesis is if implicatures are calculated in the shared knowledge condition, it would suggest that implicatures are computed by default. Such findings challenge RT and support semantic default theories (Chierchia 2004). Additionally, it would have implications for understanding implicature in thought, prompting further inquiry into why computation persists without communicative need. Conversely, if implicatures are not calculated when knowledge is shared, it supports the claim that implicatures are context-sensitive in the fashion predicted by RT. This challenges semantic default accounts and highlights the dynamic nature of implicature processing. Resolving these questions clarifies the role of implicature in language and thought, contributing to broader debates in semantics and pragmatics.

References:

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