Redundant Scalar Implicatures

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Introduction

(1) **John:** "I ate *some* of the cakes".

Mary: "And I ate *some* of the cakes".

⇒ Mary ate '*some but not all*' of the cakes.

- **Does a scalar implicature (SI) arise when the implicated meaning is already common ground?**

Competing Theories of Scalar Implicatures

Grice`s Conversational Maxims (1989)

- ⇒'*not all'* is derived by assuming speaker`s cooperativity, intention and the stronger alternative they could have said.

Relevance Theory (1995)

- ⇒'*not all'* is derived by assuming the notion of optimal relevance and positive cognitive effects.

Defaultists: Horn (1972) & Levinson (2000)

- ⇒'*not all'* is derived by default via negating the stronger alternative from a fixed scale: [all > most > many > some]

Chierchia`s (2004) Syntactic *Exh* Operator

- ⇒'*not all'* is calculated locally at a type-*t* scope site and projects upward. The upward projection occurs whenever an implicature *t*-type scope site is reached.

Always draw an implicature?

- **Embedded Implicatures:**

(2) You *must* attend *some* of Shakespeare`s plays.

- **Defaultists:**
  - **Pros:** Capture how SIs arise, including online (De Carvalho et al. 2016)
  - **Cons:** Over-generate under embedding, predicting (2) ⇒ #You *must not* attend *all* of Shakespeare's plays.

- **Relevance Theory:**
  - **Pros:** Ties SIs to *cognitive effect* , can avoid the odd embedded reading in (2).
  - **Cons:** lacks clear criteria for when embedded SIs surface.

Methodology

Priming paradigm to test implicature computation in target trials, by examining how directly participants access the target and how implicature accessibility varies based on the preceding prime

Methodology

- **1a. Prime trial: Implicature present condition:**

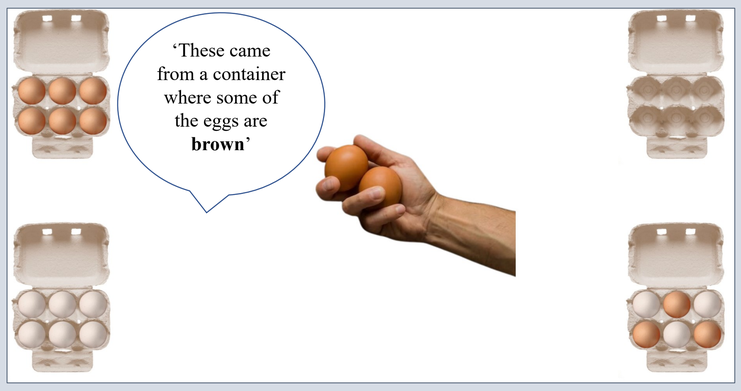

Figure 1

Prime visual: two brown eggs centred with four cartons; **audio** in all began: "These came from a container where …" and **varied by condition**:

Implicature-present:'*some* of the eggs are *brown*'

Implicature-absent: '*all* of the eggs are *brown*'

Common-ground: '*some* of the eggs are *white*'

- **1b. Target trials:**

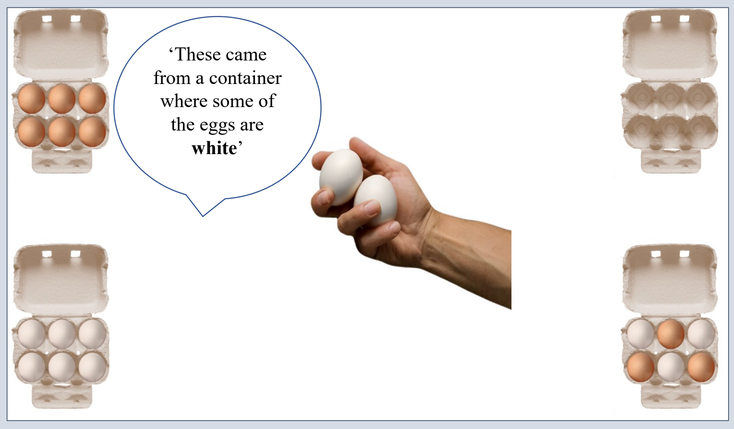

Figure 2

Predictions by theory

- **Relevance Theory** expect common-ground (CG) and implicature-absent *trajectories* to *align*.

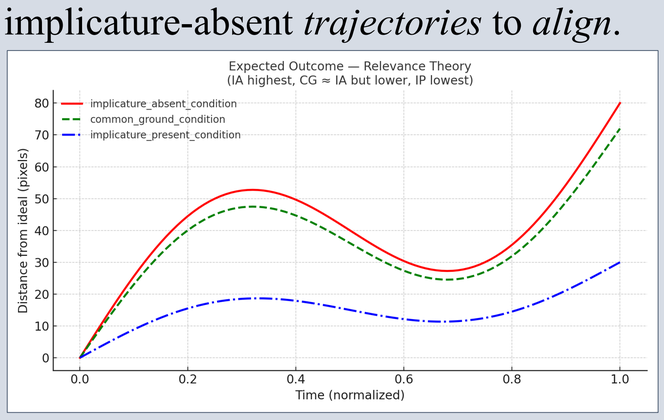

Figure 3

- **Defaultists** expect CG and implicature-present *trajectories* to *align*.

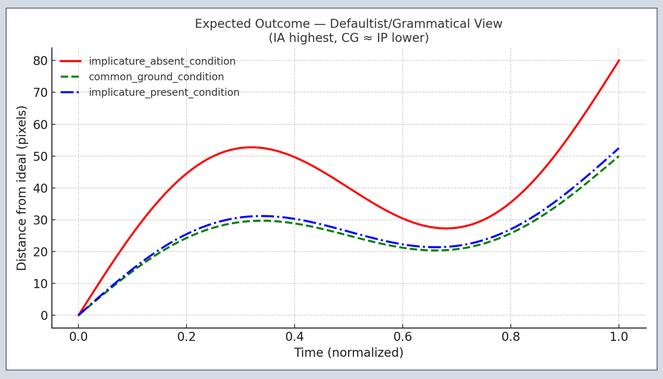

Figure 4

Experiment 1

Mouse-movements toward the '*some-but-not-all* (*mixed brown & white eggs*) target.

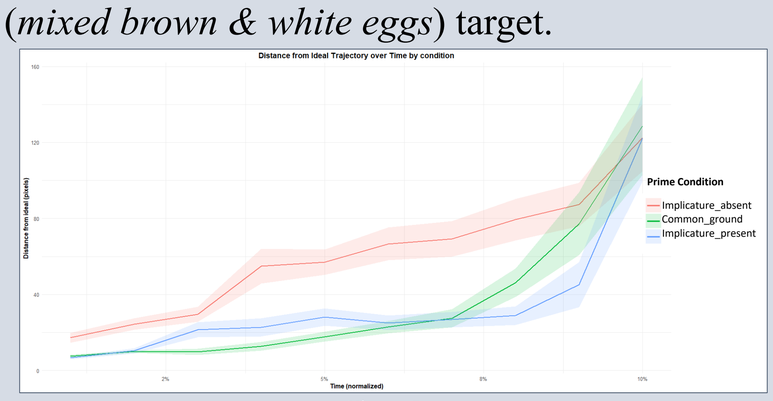

Figure 5

Findings: (GAMM) analysis revealed that the trajectories of implicature-present and CG conditions align, indicating that 'not all' in the CG condition still triggered implicature computation despite its redundancy.

Experiment 2: Auditory & visual confound

To avoid repetition in the CG condition, the prime audio was changed to **'some … are brown'**, the central image replaced with two white eggs, and the all-white competitor moved to the top-right.

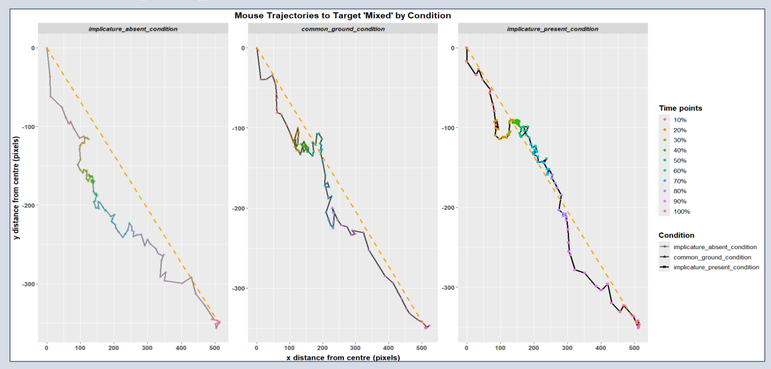

Figure 6

Findings: Replicate Exp.1 results.

Experiment 3: Location confound

Response choices were aligned across conditions by licensing "mixed" in the implicature absent prime.

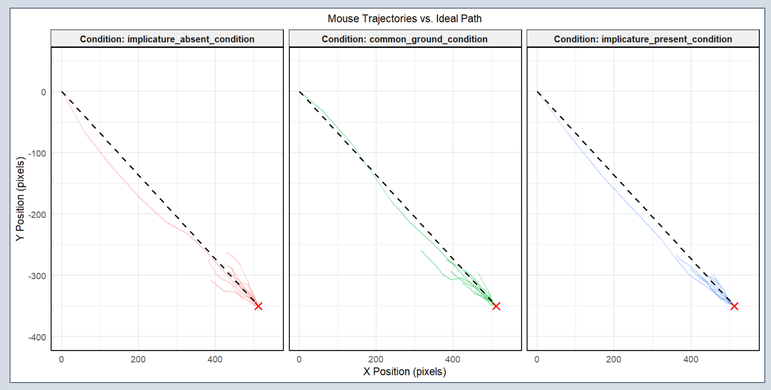

Figure 7

Findings: Replicate Exp.1 and Exp.2 results.

Discussion

Mouse-trajectories in both implicature-present and common-ground diverged from implicature-absent, showing implicatures arise regardless of redundancy**.**

These findings support Defaultist/Grammatical views and challenges Relevance Theory, which predicts no implicature without added cognitive effect.

References:

- Chierchia, G. (2004). Scalar implicatures, polarity phenomena and the syntax/pragmatics interface. In A. Belletti (ed). *Structures and Beyond*. Oxford University Press. Pp, 39-103.
- de Carvalho, A., Reboul, A., Van der Henst, J.-B., & Noveck, I. A. (2016). Scalar implicatures: The psychological reality of scales. Frontiers in Psychology, 7, 1500.
- Chierchia, G., Fox, D. & Spector, B. (2012). *In Scalar implicature as a grammatical phenomenon.* In C. Maienborn, K. von Heusinger, & P. Portner (Eds.), Semantics: *An International Handbook of Natural Language Meaning (Vol. 3*. M12. pp. 2297-2331).
- Geurts, B. (2009). Scalar implicatures and local pragmatics. *Mind and Language*. 24, 51–79. doi: 10.1111/j.1468-0017.2008.01353.
- Grice, H.P. 1989 *Studies in the Way of Words*. Harvard U. Press.
- Horn, L. R. (1972). *On the Semantic Properties of Semantic Operators in English*. (doctoral Dissertation), University of California, Los Angeles.
- Levinson, S. C (2000). *Presumptive Meanings: The Theory of Generalized Conversational Implicatures*. Cambridge, MA: The MIT Press.
- Magri, G. A theory of individual-level predicates based on blind mandatory scalar implicatures. Nat Lang Semantics 17, 245–297 (2009). https://doi.org/10.1007/s11050-009-9042-x
- Sperber, D & Wilson, D. (1986/1995) *Relevance*: Communication and Cognition. Oxford: Blackwell. (Original work published 1986.

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