The weight of words: Credibility of projected content depends on presupposition trigger type and prior knowledge

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Benjamin Peters[1], Sıla Sevi Çapar[1], Peter König[1], Asya Achimova[2]
[1] Osnabrück University, [2] University of Tübingen

Background

Perception and **inference** are two sources of knowledge that are commonly discussed in epistemology. Speakers can acquire knowledge through perception by reading a sentence that contains an assertion, or they may need to infer it if the information is presupposed or implicated.

- Assertions and presuppositions affect the ways in which speakers process information (Giunta et al. 2025a, b; Lombardi Vallauri, 2021)
- Both assertions and presuppositions require speaker commitment (Mazzarella et al. 2018).
- Recall accuracy is similar for asserted and presupposed information (Miller, 2024).
- Different presupposition triggers invoke different neural responses (Domaneschi et al., 2018).
- Presupposition triggers differ in two key ways: the strength of projection inferences (Degen & Tonhauser, 2022) and the ease with which they can be suspended (Karttunen, 2016).
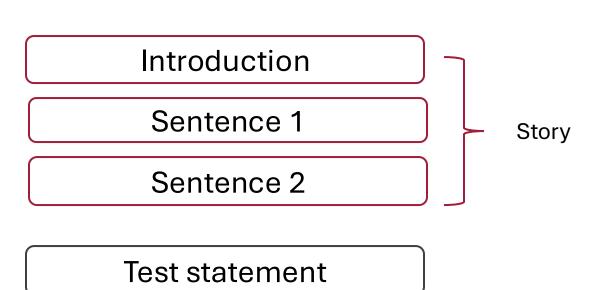
Objective

Investigate whether differences and similarities between assertions and presuppositions have downstream consequences for **information credibility**.

Research questions

1. How does credibility of presupposed content compare to assertions?
2. How does topic expertise affect credibility of information?
3. How does entailment-cancelling environment affect credibility of accommodated information?

Structure of Experiment 1

Participants read a story that contained 2 statements in the form of an assertion or a presupposition. After that, they read a test-statement which targeted the asserted/presupposed content and evaluated whether it was true.

- Introduction
- Sentence 1 ┐
- Sentence 2 ┘ Story
- Test statement

Illustration for the story "The Nazca lines"

Example of a test story "The Nazca lines"

Introduction

About 2,000 years ago, a pre-Inca civilization called Paracas engraved a series of enormous drawings into the dry coastal plain of Peru, nowadays known as the Nazca lines.

Sentence 1

The color of the example sentences corresponds to the color of conditions in the result plot.

Assertion	The Nazca lines served as a solar calendar.
Factive predicate	To this day, a lot of people are still not **aware** that the Nazca Lines served as a solar calendar.
Counterfactual cond.	**If** the Nazca lines **had not served** as a solar calendar, then the Paracas could not have anticipated the annual floods as well as they did.
Change of state verb	Since the Paracas culture was soon driven away from the area, the Nazca lines did not **continue** to serve as a solar calendar.
Iterative	After the Paracas culture was driven away from the area, the Nazca lines did not serve as a solar calendar **anymore**.

Test statement

a. The Nazca lines were used as a kind of calendar. ✅

b. The Nazca lines were used in attempts to forecast solar eclipses. ❌

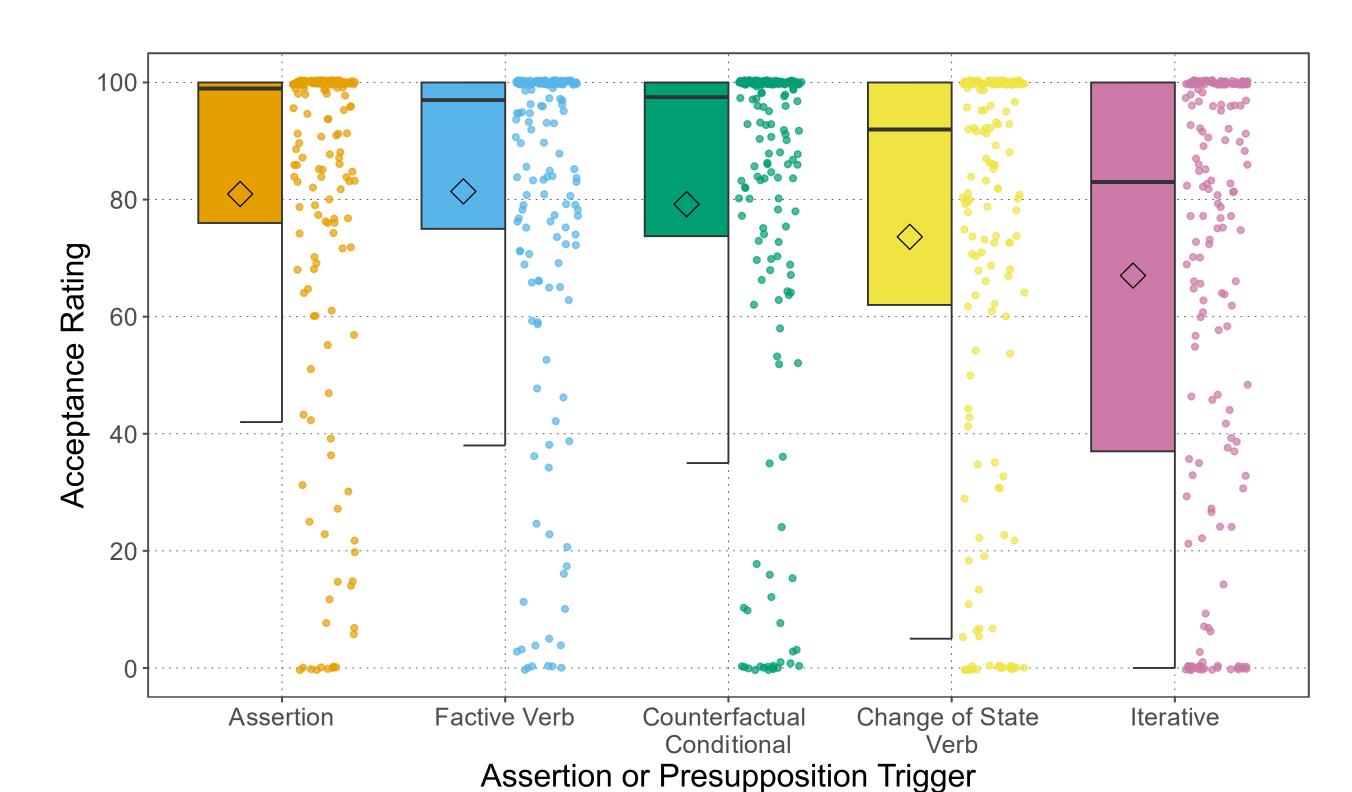c. The Nazca lines are a group of giant drawings made into Peruvian soil. filler

d. The Nazca lines were created by a pre-Inca civilization. filler

Definitely false ●━━━━━○━━━━━● Definitely true

We carried out an online experiment on Prolific (N = 200).

Each participant read 5 stories with 2 target sentences. They then evaluated 1 test statement per sentence on a scale from "definitely false to "definitely true".

The factive verbs condition included the predicates *know, realize, be aware, be odd, be proud*.

How does credibility of presupposed content compare to assertions?

Factive verb	$\beta = 1.38$, 95% CrI [-4.45, 7.27]	BF = 0.33
Counterfactual conditional	$\beta = -0.76$, 95% CrI [-6.60, 5.04]	BF = 0.31
Change of state verb	$\beta = -6.00$, 95% CrI [-11.80, -0.14]	BF = 2.26
Iterative	$\beta = -12.29$, 95% CrI [-18.07, -6.45])	BF = 695.56

Accommodated presuppositions triggered by factive verbs and counterfactual conditionals are as credible as assertions. Change of state verbs and iteratives are less powerful in triggering credible inferences.
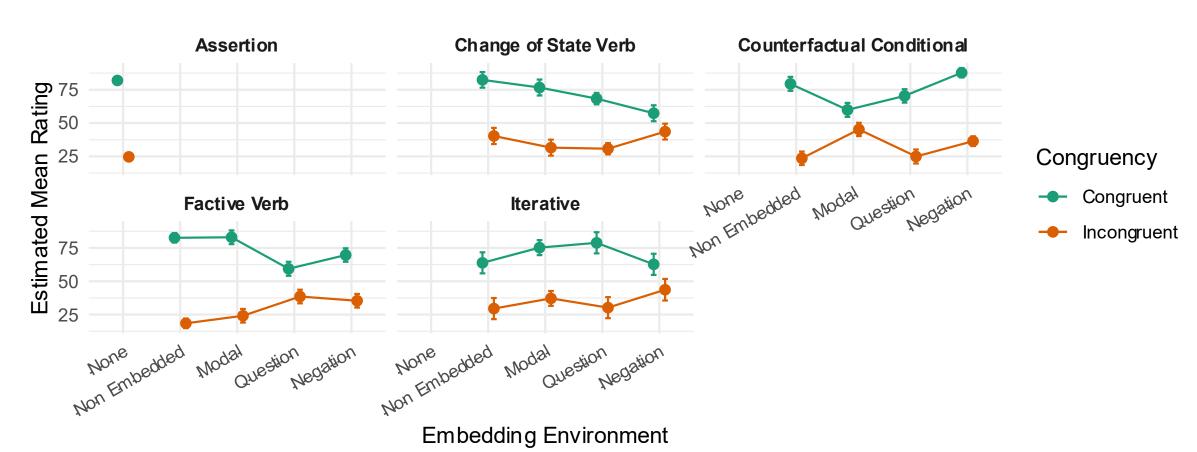
How does topic expertise affect credibility of information?

Effect of expertise: $\beta = -2.93$, 95% CrI [-5.03, -0.83]   BF = 8.88

Participants who had relevant knowledge on the topic were less likely to accept false information communicated via an assertion or a presupposition.
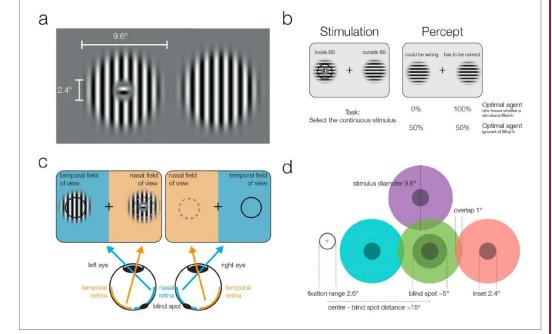
How does the entailment-cancelling environment affect credibility of accommodated information? Experiment 2, N = 204

Type of environment interacts with presupposition triggers, and they jointly affect perceived credibility.

Cognitive underpinnings: Insights from human vision

When participants looked at ambiguous stimuli that contained no inserts, they were more likely to judge the pattern as continuous when it was presented in the blind spot rather than outside of the blind spot. They trusted inferred information more than the veridical one (Ehinger et al., 2017)

Conclusions

- Form of information encoding affects perceived credibility: some presupposition triggers make inferred information as credible as asserted one.
- It is not the case that people accept presupposed false information easier than the asserted one, unlike in vision where participants sometimes found partially inferred percepts to be more reliable.

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