Evaluating truth: Experimental evidence from appositives and conjunctions

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RESEARCH QUESTION: Do comprehenders weigh all content equally when evaluating sentential truth?

1. Contribution of Appositives to Sentential Truth

Are the following sentences **True** or **False**?

1) Boulder is at sea level and is east of California.
2) Boulder, which is at sea level, is east of California.

Reported judgments of the falsity of sentence (2), which contains an appositive, are less clear than judgments of (1).

It is debated whether appositives, as **not-at-issue content**, contribute a semantic truth value to their containing sentence:

No: Appositives (as in (2) above) compose semantically separately from main clause content [2, 4, 5, 6, 7].
Yes: Experimental and corpus evidence suggests that appositives contribute a truth value to their containing sentence in a manner similar to conjunctions [1, 5].

Hypothesis: Truth and falsity, which can be evaluated relative to visually presented stimuli, is modulated by clausal type and relevance to conversational goals.

Experimental Design

What can you tell me about the shapes?
The square, which is next to the spotted circle, is pink.
1. True.
2. False.

Alterations from previous investigations:
- Fully crossed design directly compared sentences containing appositives vs. conjunctions.
- Provided the situation (shapes and colors) that truth was evaluated relative to.
- Included Question under Discussion (QuD) to manipulate relevance of clausal information [3, 8].

REFERENCES: [1] AnderBois, S. et al. 2010. Crossing the appositive/at-issue meaning boundary. [2] Bach, K. 1999. The myth of conventional implicatures. [3] Ginzburg, J. 1996. Interrogatives. [4] Harris, J. & C. Potts. 2011. Perspective-shifting with appositives and expressives. [5] Syrett, K. & T. Koev 2015. Experimental evidence for the truth conditional contribution of appositives. [6] Potts, C. 2005. The logic of conventional implicatures. [7] Potts, C. 2012. Conventional implicatures and expressive content. [8] Roberts, C. 1996/2012. Information structure in discourse. [9] Simons, M. et al. 2010. What Projects and Why. [10] Tonhauser, J. 2012. Diagnosing (not-)at-issue content.

2. Relevant Appositive and Conjunct Clauses Affect Truth Equally

Experiment 1

**Design** 2 x 2 x 2: *Clause* (appositive or conjunction) x *First Clause* (T or F) x *Second Clause* (T or F)

80 items, 160 fillers, n=48

Task Forced choice True/False; confidence ratings 1-5

QuD: What can you tell me about the shapes?

Truth	Appositive Half of Item
TT	The square, which is next to the green triangle, is pink.
TF	The square, which is next to the green triangle, is black.
FT	The square, which is next to the blue triangle, is pink.
FF	The square, which is next to the blue triangle, is black.

Main finding: Sentences with one false clause judged false.
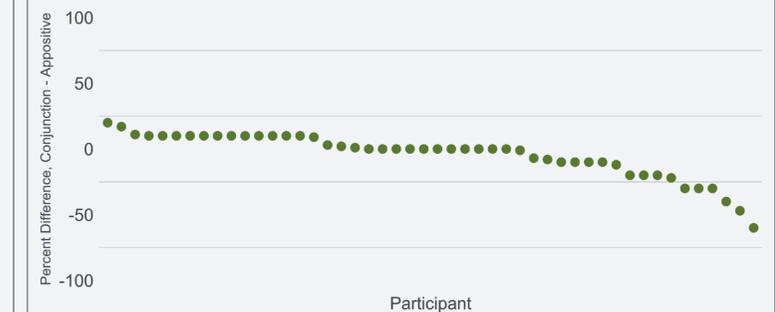

● Appositive ○ Conjunction
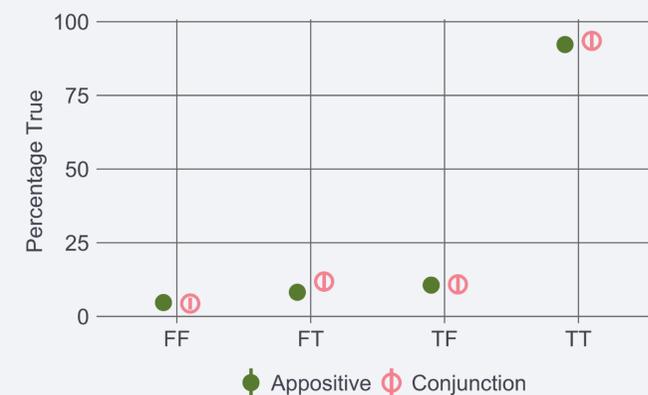
Results: Mean percent true with standard error. Main effects of First, Second; Interaction of First & Second ($ps < .001$). Confidence rating means all 4.5 or above.

Proposal for Experiment 2: Encourage comprehenders to discard appositive content by using QuD targeting only content in the matrix clause [9, 10].

3. Non-relevant Appositive & Conjunct Clauses are Equally Discarded

Experiment 2

QuD: What color is the square?

● Appositive ○ Conjunction
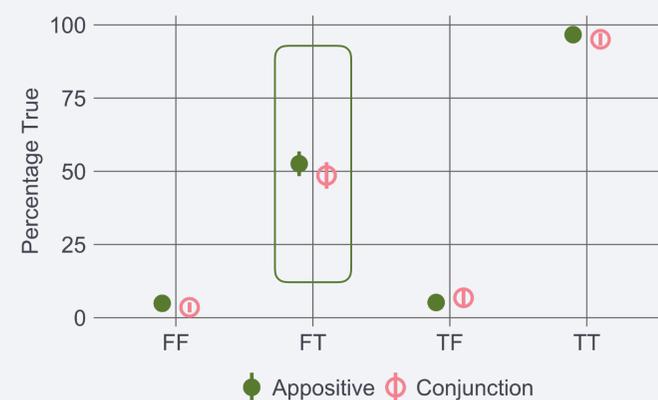
Main Finding: False clauses irrelevant to the QuD were discarded about 50% of the time, regardless of clause type.

Was this result due to lack of attention allocation?

Experiment 3

Inclusion of verbatim memory recognition task

● Appositive ○ Conjunction
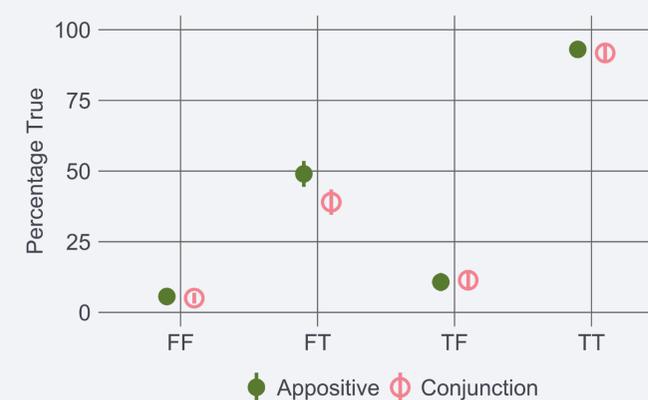
Main Finding: Same pattern found when people were required to allocate attention to non-relevant clauses.

Results: Mean 82% (12% s.d.) correct on item verbatim memory questions. Confidence rating means all 4.25 or higher.

4. Individuals are Consistent Across Clause Types

Individual Differences

Participants were consistent in their strategy across Appositive and Conjunct clauses (in the FT condition, Experiment 2)


- Clustering of data around 0 shows that participants responded consistently across clause types.
- Tail of data represents participants who discarded False appositives at a greater rate than False conjuncts, as predicted by theories under which appositives have exceptional behavior.

5. Conclusion & Future Directions

Even conjunctions — whose semantic truth-conditional contributions are not under debate — could be pushed around in experimental settings.

What do these results tell us about evidence weighting in sentential truth evaluation?
- Evidential weighting for clauses is modulated by **relevance to the QuD**;
- Findings suggest **top-down / goal-oriented behavior** is relevant to determining sentential truth;
- No strict mapping from semantic predictions of truth to speaker evaluations of sentential truth.

Future Direction: Exploration of *Truth Table Evaluators* (truth judgments insensitive to relevance to QuD) vs. *Relevance Evaluators* (truth judgments based on clausal relevance to QuD).