A multi-dimensional analysis of truth: Pragmatic judgments of appositives and conjunctions

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Introduction The semantic and pragmatic contribution of appositives to their containing sentence is a subject of continuing debate in the literature. While unidimensional semantic accounts propose that appositives, such as (1), contribute their truth conditions to their containing sentence (AnderBois et al., 2010; Murray, 2010; i.a.), multidimensional accounts predict that they do not (Potts, 2005; i.a.). This project contributes to the debate over the truth-conditional status of appositives by building on pioneering experimental work by Syrett & Koev (2015). Syrett & Koev found in truth-value judgment tasks that appositive relative clauses (ARCs) contribute a truth value to their containing sentence, suggesting a unidimensional approach in which ARCs are treated as a type of conjunction. In four experiments, we replicated and extended this work by also testing conjunctions, such as (2), allowing us to directly compare judgments of both ARCs and conjunctions. Our findings make both a methodological and a theoretical contribution. First, we show that no conclusions about the truth-conditional contributions of appositives to their containing sentences can be drawn from experimental work without further investigation of how participants provide truth-value judgments for complex sentences. While we replicate Syrett & Koev's results that ARCs contribute truth values to their containing sentences, we demonstrate that participants are highly sensitive to task features when they compute the truth value of sentences with appositives and also, crucially, with conjunctions. Specifically, we show that both sentences containing ARCs and sentences containing conjunctions can be judged true even when the ARC or one conjunct is patently false. We argue that these judgments reflect truth not at the semantic level, but only at the speech-act level.

Experiments Four experiments directly compared sentences with appositive relative clauses and conjunctions. Participants judged sentences to be either true or false descriptions of simple shapes, and rated their confidence in their choices. All studies manipulated the first clause type (*appositive* vs. *conjunction*), and the truth value of both the first clause (*T* or *F*) and the second clause (*T* or *F*), for a 2x2x2 design. Each trial displayed a target sentence like (1) or (2) that was true or false relative to two common shapes shown above the sentence. The context was controlled by including an explicit QUD above each target sentence.

		First Clause	**Second Clause**
(1) **Appositive**	The square,	which is next to the filled triangle,	is dark blue
(2) **Conjunction**	The square	is next to the filled triangle and	is dark blue

Exp. 1 showed that under a general QUD (*What can you tell me about the shapes?*) participants judged sentences containing appositives and conjunctions to be true only when both clauses in the sentence contained true information (Fig. 1). In **Exp. 2**, the QUD targeted only the second clause (*What color is the square?*). Participants split on whether they behaved as in Exp. 1, or chose to disregard the appositive and conjunct containing the non-relevant information. This resulted in nearly 50% *true* responses when the first clause for both clause types was false and the second clause was true (Fig. 2). In order to rule out an interpretation of Exp. 2 under which participants scanned sentences without comprehending them, **Exp. 3** replicated Exp. 2 with the inclusion of a verbatim memory recognition task. High performance in recognition—mean response 90% (±1.02%) correct—confirmed that participants were reading the full sentences.

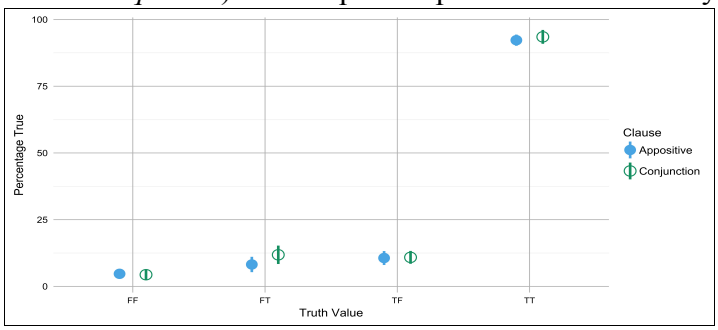

Fig. 1. Experiment 1 truth judgments for appositives and conjunctions under general QUD. Nsub=48 Nitem=80.

Exp. 4 replicated the design of Exp. 2 with the false clauses altered to contain absurd or logically inconsistent content. Although participants were numerically more likely to endorse an "inflammatorily" false sentence containing an appositive than one containing a conjunction when the second clause was true (49% *true* vs. 39% *true)*, this result failed to yield a significant effect (Fig. 4). Importantly, in all experiments participants treated appositives and conjunctions identically with respect to their effects on the truth of their containing sentence: while participants showed individual variation in ignoring clausal content when it contained QUD-irrelevant information, they were uniform in their individual strategies across appositive and conjunct clauses and were highly confident.

Discussion Two consistent findings emerged across our experiments. The first is the parity of appositives and conjunctions. In the presence of a general QUD, appositives and conjunctions contributed truth values as predicted by semantic analyses of conjunctions: only when both clauses were true was the entire sentence judged as true. In the presence of a specific QUD targeting only the second clause in Exp. 2, participants differed in whether they treated appositives and conjunctions as in Exp. 1, or whether they disregarded the contribution of the irrelevant clauses. Exp. 3 showed that this result was not due to participants not fully reading the experimental items. The second finding across experiments is that even the truth contributions of conjunctions—whose semantic truth-conditional contributions are not debated—were modulated by an explicit QUD. Unless we are willing to give up our fundamental beliefs about the truth conditions of conjunctions, our findings support a view in which experimental judgments of truth are filtered through pragmatics. Because appositives and conjunctions patterned together, we conclude that appositives contribute a truth value to their containing sentence at the discourse level, but not necessarily at the level of the semantics. Such an analysis is compatible with observations that appositives interact with at-issue content in discourse, such as serving as antecedents for ellipsis and anaphora (Potts, 2005; Amaral et al., 2007; Collins et al., 2014; i.a.). More broadly, our findings provide a note of caution for researchers arguing from experimental data to conclusions about semantic truth.

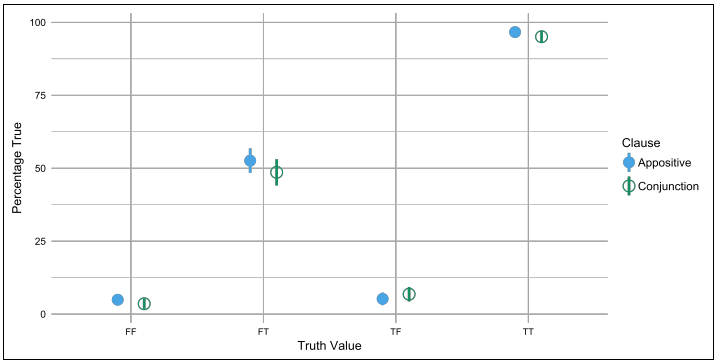

Fig. 2. Experiment 2 truth judgments for appositives and conjunctions under specific QUD. Nsub=48 Nitem=80.

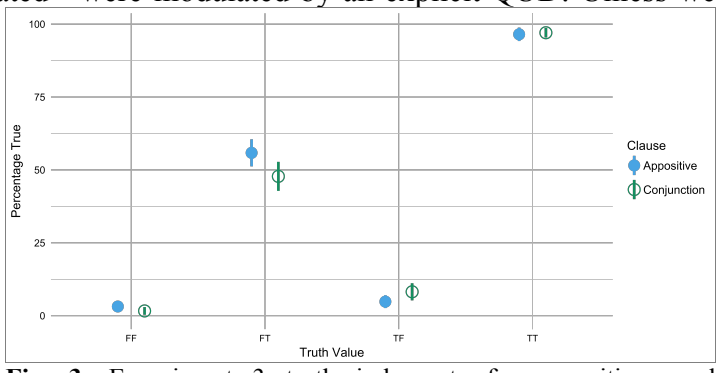

Fig. 3. Experiment 3 truth judgments for appositives and conjunctions under specific QUD, including comprehension questions. Nsub=48 Nitem=80.

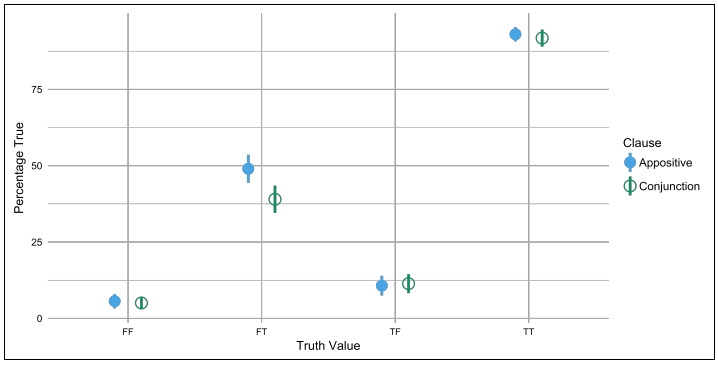

Fig. 4. Experiment 4 truth judgments under specific QUD, including inflammatorily false information. Nsub=48 Nitem=80.

Selected References AnderBois, S. et al. 2010. Crossing the appositive/at-issue meaning boundary. Murray, S. 2010. Evidentiality and the structure of speech acts. Potts, C. 2005. *The logic of conventional implicatures*. Syrett, K. and T. Koev. 2015. Experimental evidence.