

# *Too* builds arguments, too:

## A probabilistic, question-based approach to additivity

William C. Thomas | thomas.3846@osu.edu | Ohio State University

Paper: lingbuzz.net/008413

### Overview

This paper synthesizes ideas from QUD-based models of discourse, Inquisitive Semantics, and the Rational Speech Act framework to propose an analysis of English *too* that offers greater empirical coverage than existing analyses. This provides the basis for a new approach to additivity that can be extended to other additive expressions such as *also* and *either*.

### Background: Additive expressions

Many authors (e.g. Rullmann 2003; Winterstein 2011; Ahn 2015) have assumed that additives such as *too*, *also*, and *either* require the presence of a salient antecedent proposition that is a focus alternative the prejacent, as in (1).

(1) I like [pizza]<sub>F</sub>, and I like [spaghetti]<sub>F</sub>, **too**. (Rullmann 2003)

Beaver & Clark (2008) argue that this requirement can be accounted for by a presupposition that the antecedent and prejacent are partial answers to the same Current Question Under Discussion (CQ; see Roberts 1996).

- (2) CQ: What do you like?
- Partial answer: I like [pizza]<sub>F</sub>.
  - I like [spaghetti]<sub>F</sub>, **too**.

### The argument-building use of *too*

However, additives often occur without the kind of antecedent they have been claimed to require. Some naturally occurring examples from the Corpus of Contemporary American English (COCA; Davies 2008–) are shown in (3).

- (3) a. Ernie [...] just naturally took Iree in with no authority but her own. [...] Good thing she did **too** because something happened in the birthing time of Iree and she's got epilepsy [...] (COCA)
- b. (Online forum discussion)
- [A:] Cops dont enforce the carpool lane [...] in the dirty south?
- [B:] i have never gotten a ticket but i know a cpl people who have.. i guess the fine is a hefty one **too**. (COCA)
- c. (Characters in a comedy film are trying to find a hotel room)
- [Phone chimes with a message from Orbitz.] A room just opened up at this hotel. [...] It looks kind of fancy, **too**. (COCA)

I call this use of *too* the **argument-building** use because it seems to mark its antecedent and prejacent as arguing for the same conclusion. To see this, notice that *too* sounds odd if the argumentative force of the prejacent in (3) are reversed, as in (4).

- (4) [Same contexts as (3).]
- Ernie took Iree in. It was a bad thing she did, **#too**.
  - I know people who've gotten a ticket. The fine is a small one **#too**.
  - A room just opened up at this hotel. It looks kind of dingy, **#too**.

### Intuition

Intuitively, the antecedent proposition in each part of (3) **suggests an answer** to some contextually relevant question (henceforth **RQ**), and the host sentence provides additional evidence for that same answer. Note that in these examples neither the antecedent nor the host sentence is a partial answer in the sense of Beaver & Clark (2008) or Roberts (1996).

- (5) a. **RQ**: How much has Ernie helped Iree?
- A: Ernie took Iree in. It was a good thing she did, **too**.
- ↗ Ernie has helped Iree a great deal.
- b. **RQ**: How much should I worry about traffic enforcement?
- A: I know people who have gotten tickets. The fine is hefty, **too**.
- ↗ You should worry quite a bit about traffic enforcement.
- c. **RQ**: What would be a good hotel to stay at?
- A: A room just opened up at this hotel. It looks kind of fancy, **too**.
- ↗ This hotel would be a good one to stay at.

Note also that the RQ need not be the CQ. In (6), *too* is licensed by the RQ *Who has a violin?*, which is not the CQ for the second sentence (*If I had one, too, he and I...*).

- (6) “Ivan has a new violin just his size,” said Sebastian. “If I had one, **too**, he and I could play together at the Easter dances.” (COCA)

### Intuition (continued)

There are several ways in which an antecedent can suggest an answer to an RQ: It can entail an answer, as in (1), merely provide evidence for an answer, as in (5-c), or conversationally implicate one, as in (7-a). Antecedents can also be non-linguistic, as in (7-b), or drawn background expectations without being salient at all, as in (7-c).

- In order to account for all of these cases, I take the antecedent uniformly to be a **fact about the context** rather than the semantic content of an utterance. Such a fact can be the fact that someone uttered something, the fact that a non-linguistic event occurred, or a fact that is part of the interlocutors' background knowledge about the world.

- I take “suggesting an answer” to mean **raising the probability** of an answer in a listener's belief state—where interlocutors' belief states are modeled as probability distributions.

- (7) a. Q: What am I allowed to drink?
- A: There's soda in the fridge. You can drink tea, **too**.
- b. (Avery takes a bite of cake. A blissful expression crosses her face.)
- Bailey: I like it, **too**!
- c. Last Christmas, Paul visited [his girlfriend's]<sub>F</sub> parents, **too**. (Grubic 2019)

These observations can be accounted for by the constraints stated informally in (8). (The prejacent conditions account for certain facts about *too*'s prejacent that are omitted here.)

- (8) *Too* requires an identifiable fact ANT such that for some contextually relevant *wh*-question RQ:
- ANTECEDENT CONDITION**: ANT increases the probability of some resolution to RQ more than it increases the probability of any other resolution.
  - CONJUNCTION CONDITION**: The conjunction of ANT with *too*'s prejacent increases the probability of some resolution to RQ more than that of any other resolution, and it increases that probability more than ANT does alone.
  - PREJACENT CONDITIONS**:
    - The prejacent does not entail the resolution to RQ that is suggested by the conjunction of ANT with *too*'s prejacent.
    - The conjunction of ANT with *too*'s prejacent raises the probability of some resolution to RQ more than does the conjunction of ANT with any sentence that is informationally weaker than the prejacent.

### Proposal

I assume that when a listener *L* hears a speaker *S* utter a sentence  $\phi$  in a context *C*, *L*'s belief state is updated via Bayes' Rule, as shown in (9), as is done in the Rational Speech Act (RSA) framework (see Frank & Goodman 2012; Goodman & Frank 2016).

$$(9) P_L(A | \text{info}(\text{utter}(S, C, \phi))) \propto P_S(\text{info}(\text{utter}(S, C, \phi)) | A) P_L(A)$$

The intuitions in (8) can be formalized as in (11) with the definition of Answerhood given in (10), which makes use of the notion of a **resolution** from Inquisitive Semantics.

- (10) **Answerhood**: For a listener *L*, a proposition *R* Answers an inquisitive proposition *Q* iff there is a nonempty (possibly singleton) set  $A \subset \text{alt}(Q)$  such that
- $P_L(\bigcap A | \text{info}(R)) > P_L(\bigcap A)$ , and
  - for all  $A' \subset \text{alt}(Q)$ , if  $\bigcap A' \not\supseteq \bigcap A$ , then  $P_L(\bigcap A | \text{info}(R)) - P_L(\bigcap A) > P_L(\bigcap A' | \text{info}(R)) - P_L(\bigcap A')$ .

If such a set *A* exists, it is unique. Call  $\bigcap A$  the **resolution of *Q* evidenced by *R***, or  $Q|_R$  for short.

- (11) **Proposal** (final)
- $\text{too}(\pi)$  requires an identifiable antecedent proposition ANT embodying a fact about the context and a (single or multiple) *wh*-question RQ that is Relevant to some question DQ in the discourse tree such that the following conditions hold:
- ANTECEDENT CONDITION**: ANT Answers RQ.
  - CONJUNCTION CONDITION**:  $\text{ANT} \cap \llbracket \pi \rrbracket$  Answers RQ, and  $\text{RQ}|_{\text{ANT} \cap \llbracket \pi \rrbracket}$  is Evidenced more strongly by  $\text{ANT} \cap \llbracket \pi \rrbracket$  than by ANT.
  - PREJACENT CONDITIONS**:
    - $\llbracket \pi \rrbracket \not\supseteq \text{RQ}|_{\text{ANT} \cap \llbracket \pi \rrbracket}$ .
    - For any proposition  $S \supset \llbracket \pi \rrbracket$ ,  $\text{ANT} \cap \llbracket \pi \rrbracket$  Evidences  $\text{RQ}|_{\text{ANT} \cap \llbracket \pi \rrbracket}$  more strongly than  $\text{ANT} \cap S$  does.

### Acknowledgements

I thank Ashwini Deo, Edgar Onea, the OSU Pragmatics and Synners discussion groups, and audiences at the University of Stuttgart and UT-Austin for their feedback. Reviewers for *Sinn und Bedeutung* 29 and *Semantics & Pragmatics* also provided helpful comments.