Prosody of corrective *but* sentences in English

poster paper

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	Corrective *but* with constituent negation	Corrective *but* with sentence negation	*And*-sentence
Context	Max has been on an all-meat diet, and misses something in particular. They're debating about what Max misses.	Max has been on an all-meat diet, and misses something in particular. They're debating about what Max misses.	Max is particular about his smoothie: he mixes all sorts of ingredients, except a vegetable and a fruit.
A:	Max misses spinach.	Max misses spinach.	Which vegetable and which fruit doesn't Max mix?
B: (target)	(1) He misses **not** spinach **but** pears.	(2) He does**n't** miss spinach **but** pears.	(3) He does**n't** mix spinach **and** pears.

Background

- **Corrective *but* sentences** are coordinated by *but*, and require presence of negation in the first conjunct and absence of negation in the second conjunct (1)-(2).

Research Question 1: What is the syntactic structure of (1)?

Two competing syntactic analyses of (1):

- **Strictly-DP-coordination approach** (Toosarvandani 2013):

(4) *Strictly-DP-coordination analysis of (1)*
Max misses [$_{DP}$ **not** spinach] but [$_{DP}$ chard].

- **Ambiguity approach**: (1) is structurally ambiguous between (5a), (5b), and (5c) (Wu 2022):

(5) *Multiple analyses of (1) according to the ambiguity approach*
a. Max misses [$_{DP}$ **not** spinach] but [$_{DP}$ chard].
b. Max [$_{vP}$ misses **not** spinach] but [$_{vP}$ chard$_i$ ~~misses t$_i$~~].
c. [$_{TP}$ Max misses **not** spinach] but [$_{TP}$ chard$_i$ ~~he misses t$_i$~~].

- Empirical generalization: in English coordination, the syntactic size of the coordinated constituents is correlated with their prosodic boundaries (e.g., Wagner 2005, 2010; Wu 2022).

(6) a. [$_{TP}$ Lillian will look for Lauren]**)** or [$_{TP}$ she will look for Bella].
b. Lillian will look for [$_{DP}$ Lauren]**)** or [$_{DP}$ Bella] this Saturday.

- The two syntactic approaches make different predictions about the prosodic boundary following *spinach* in (1) vs. DP-coordination (3).

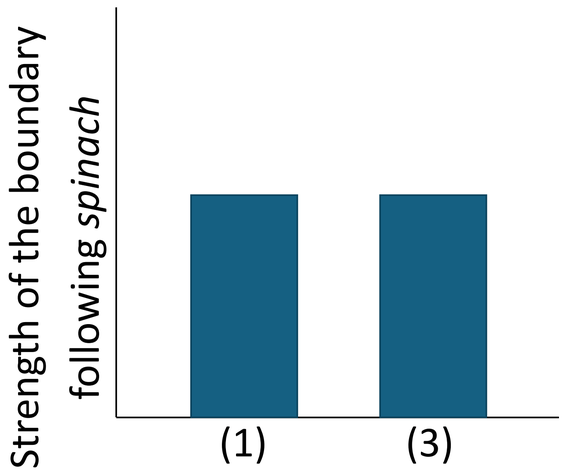


Figure 1: Prediction of the strictly-DP approach.

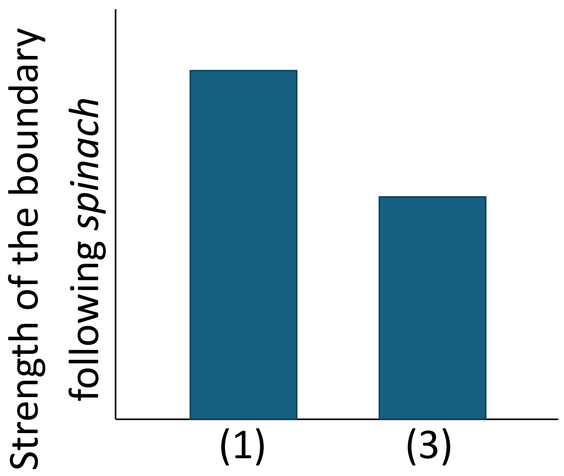
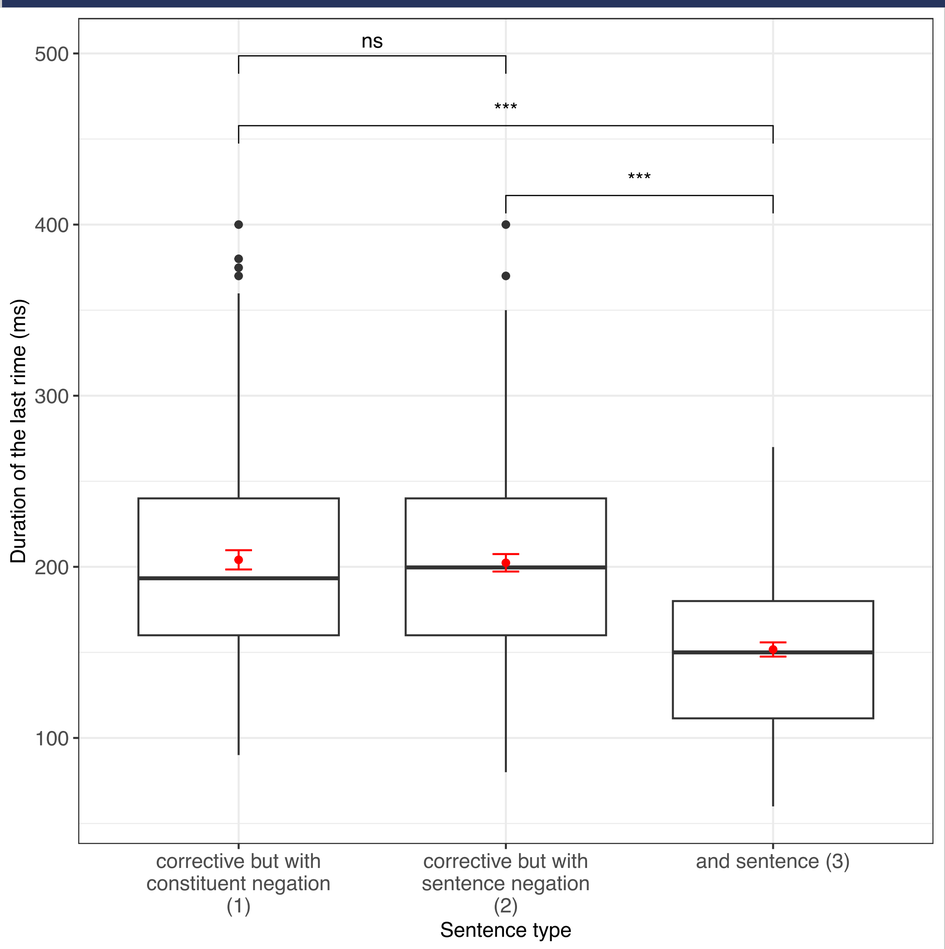


Figure 2: Prediction of the ambiguity approach.

Results



- The rime in (1) is 52.7 ms longer than the rime before *and* ($p<0.001$).
- The rime in (2) is 50.6 ms longer than the rime before *and* ($p<0.001$).
- The rime durations in (1) and (2) do not differ significantly.

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Research Question 2: Can the prosodic structure be recursive?

- (2)'s syntactic analysis is uncontroversial (Vicente 2010; Toosarvandani 2013; Wu 2022):

(7) Max does [$_{vP}$ not miss [$_{DP}$ spinach]] but [$_{vP}$ chard$_i$ ~~miss t$_i$~~].

Two competing theories on syntax-prosody mapping:

- Those that assume **the prosodic structure is not recursive** (e.g. Nespor & Vogel 1986; Selkirk 1986), e.g. versions of edge-based theory align the right edge of a DP or a vP to the right edge of a phonological phrase (ϕ):

(8) Max doesn't miss spinach**)**$_\phi$ but chard.

- Those that assume **the prosodic structure can be recursive** (e.g. Truckenbrodt 1995, 1999; Selkirk 2009, 2011; Wagner 2010; Elfner 2012, 2015; Ito & Mester 2013, 2015;), e.g. Match Theory matches syntactic phrases to ϕ:

(9) Max doesn't miss spinach**)**$_\phi$**)**$_\phi$ but chard.

- The two mapping approaches make different predictions about the prosodic boundary following *spinach* in (2) vs. DP-coordination (3).

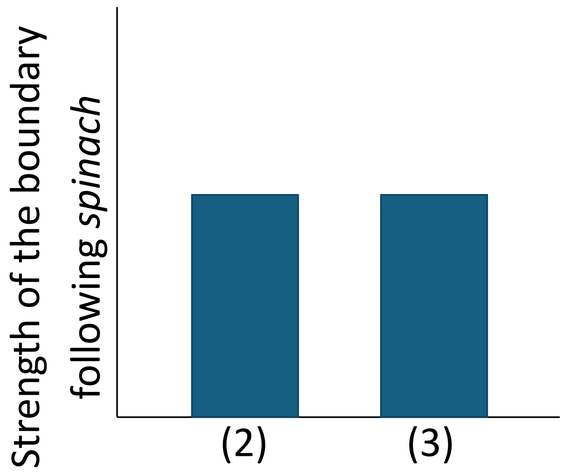

Figure 3: Prediction of the theories with non-recursive prosodic structure.

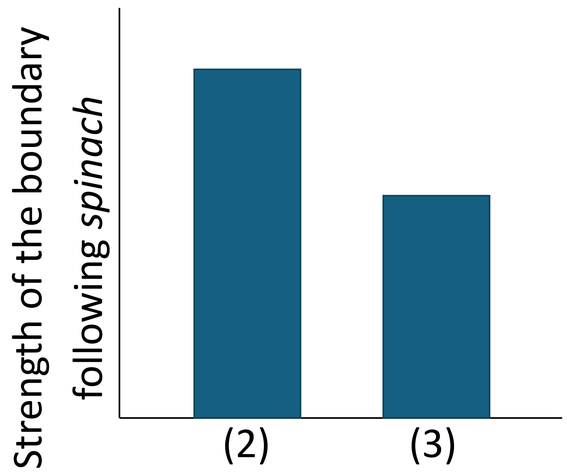

Figure 4: Prediction of the theories with recursive prosodic structure.

Methods

- Production study with 18 participants, 8 sets of dialogs in 3 conditions, 100 filler items.
- Key measure: duration of the last rime of the word immediately before the prosodic boundary (i.e., *ach* of *spinach*), which is correlated with the strength of the boundary (Wightman et al. 1992).
- Linear mixed effects model with condition as fixed effect.

Discussion

- The fact that the prosodic boundary before *but* in (1) is stronger than the prosodic boundary before *and* in (3) suggests that **(1) is structurally ambiguous**: it can not only be analyzed as DP-coordination, but also larger coordination with ellipsis.
- The fact that a vP that contains a DP (e.g., the vP in (2)) corresponds to a stronger prosodic phrase than just a DP (e.g., the DP in (3)) suggests that **the prosodic structure is not completely flat**.
- One way to implement this is to **allow for recursive ϕs** (i.e., a ϕ can dominate another ϕ), and boundary strength depends on the number of ϕ-levels that a ϕ dominates.

Implications

- I have demonstrated that prosody can provide evidence for syntactic theories, adding to a small literature to do so (e.g. Bresnan 1971).
- Syntactic theory can in turn provide basis for investigating questions about the mapping process between syntax and prosody.