

Prosodic Phrasing and Syntactic Attachment

There are many ways in which prosody can affect the processing of sentences. One line of my research with Frazier and Clifton explores the effects of prosodic phrasing on syntactic attachment ambiguities. We argue that prosodic boundaries are not interpreted in isolation, but are interpreted with respect to the overall prosodic and syntactic phrasing of a sentence. Our Rational Speaker Hypothesis, which underpins this work, posits that speakers are self-consistent in their prosodic phrasing and will not mark a smaller syntactic division with a larger prosodic boundary.

For example, in a conjunction ambiguity like (1), the same intermediate phrase boundary, before *in-laws*, can have different effects depending on whether it is smaller than, equal to, or larger than a relevant previous boundary. In (1a), *Sarah's* and *in-laws* are prosodically grouped together more closely than *Johnny* and *Sarah's* are, while in (1c), *Johnny* and *Sarah's* are together in a phrase excluding *in-laws*; listeners display corresponding tendencies to syntactically group *Sarah's* with *in-laws* or with *Johnny*. Similar results were found in other conjunction and adjunct attachment ambiguities.

In some cases, there can be multiple relevant positions for an early boundary. In (2), the final adjunct phrase in the sentence could attach into the VP within the relative clause, headed by *insulted*, or into the matrix VP, headed by *comforted*. A prosodic structure like (2a), which separates the adjunct from the closest verb, leads to more matrix interpretations than one like (2b). But if the boundary before the adjunct is accompanied by other IPh boundaries following the matrix verb, as in (2c-d), the late boundary's effect is reduced. The late prosodic boundary becomes less informative about whether the adjunct attaches non-locally, because an equal boundary occurs at a less important syntactic boundary (between a verb and its object (2c) or between a noun and its relative clause (2d)).

The interpretation of prosodic boundaries can also be affected by the phonological length of the material in a phrase. In an adjunct attachment sentence like (3), a prosodic boundary before the adjunct should, in the absence of any similar or larger prosodic boundaries, increase matrix interpretations. In (3a), it does. But in a sentence like (3b), with a lengthy adjunct phrase, it is natural that speakers might want to start a new prosodic phrase at the start of the adjunct just to create a natural overall utterance. If listeners are sensitive to that need, they might find such a prosodic boundary uninformative about attachment: and indeed they did.

We believe that the preceding body of results is most consistent with a processing system that takes account of the full prosodic phrasing of an utterance when making syntactic and semantic decisions, rather than one which only notes when a prosodic boundary interrupts the obvious local attachment of constituents.

1. [] = IPh boundaries, () = ip boundaries
 - a. [(Johnny)] [(and Sarah's) (in-laws)]
 - b. [(Johnny) (and Sarah's) (in-laws)]
 - c. [(Johnny and Sarah's) (in-laws)]
2.
 - a. [(Jimmy comforted the girl that he had insulted)] [(at the end of the party)]
 - b. [(Jimmy comforted the girl)] [(that he had insulted at the end of the party)]
 - c. [(Jimmy comforted)] [(the girl that he had insulted)] [(at the end of the party)]
 - d. [(Jimmy comforted the girl)] [(that he had insulted)] [(at the end of the party)]
3.
 - a. [(Susie learned that Bill telephoned)] [(last night)]
 - b. [(Susie learned that Bill telephoned)] [(late last night after the general meeting)]