Effects of Prosodic Cues on Relative Clause Attachment Preferences in Spanish  
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High attachment preferences for ambiguous relative clauses (RCs) is a phenomenon that has been long studied (Cuetos & Mitchell, 1988; Carreiras & Clifton, 1993) and discussed (Grillo & Costa (2014)). Prosodic cues such as pauses demarcate intonational phrases that would facilitate syntactic parsing (Fodor 2002). In a production study by de la Cruz-Pavía (2010), she established that Spanish readers do project a prosodic contour reflecting their own interpretation. For sentences like (1), they tend to exhibit a weak low attachment preference, i.e. they attach short Relative Clauses of four syllables with the second noun NP2 by placing a prosodic pause after the first noun NP1 in ambiguous sentences.

(1) María encontró al amigo del niño que reía.  
“Maria met the friend of the child who was laughing”

In the present study, we investigated the possible role of these pauses in RC sentences disambiguation, on the listener’s side. To our knowledge, there is no evidence that listeners use them to build their syntactic representations during speech perception. We created Spanish sentences containing an attachment-related structural ambiguity, based on a similar sentence structure in the example above. Applying a cross-splicing method (Pauker et al., 2011), we generated three versions of identical sentences, except for the placement of a 200 ms prosodic pause: after NP1 (A), NP2 (B) or no pause at all (BA). Participants listened to short stories ending with an experimental ambiguous sentence, and were asked to decide which name (NP1 or NP2) the RC referred to. We measured the effect of prosody on the interpretation by calculating the proportion of low to high attachment according to the pause’s placement in the respective ambiguous sentences (A, B and BA versions of each sentence). Results show a clear modulation of attachment preference depending on the pause’s position (Figure 1): The absence of pause (BA) confirms the natural preference for low attachment interpretation, which is significantly reinforced when a pause is placed after NP1 (A). In contrast, when a pause is placed after NP2 (B), the interpretation was significantly reversed with a clear preference for the high attachment.

![Figure 1: Proportion of low attachment preference (in percentage %) when the pause is placed after NP1 (A), after NP2 (B), or absent (BA) in the ambiguous sentences.](image)

Our present results support the findings reported by de la Cruz-Pavía (2010) and provide empirical evidence that prosodic contours help listeners assign syntactic structure (Fodor, 1998; 2002). These results are of particular importance as they bring a new useful behavioral measure of syntactic parsing modulation in speech perception and prosody. Further studies, including manipulation of RC’s length and the use of the event-related potentials (ERP) technique are needed to investigate the extent to which prosody may modulate interpretation.
References:


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