Contextual Influences on Syntactic Attachment in L2 Reading

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The prepositional phrase (PP) '*with the binoculars*' in the syntactically ambiguous sentence in (1) can grammatically be attached to either the verb (high attachment) or the second noun (low attachment):

(1) *The man saw the woman with the binoculars*

Although high attachment is generally preferred (Rayner et al., 1983), both text-explicit information (the discourse context; Altmann & Steedman, 1988) and pragmatic information (world knowledge; Schütze & Gibson, 1999) can guide attachments in native English speakers. However, little is known about **L2 speakers' attachment preferences of globally ambiguous PPs**, which may be particularly challenging when different sources of information (text-based, pragmatic) have to be integrated.

We developed a **PP attachment task** suitable for testing L2 and native speakers of English. Two experiments presented written globally ambiguous sentences with a preceding 2-sentence discourse context (Fig. 1). Pragmatic information (fishermen more typically have fishing nets than hairdressers) as well as text-explicit information were manipulated to bias either low or high attachment. In addition, we manipulated the structural complexity of the preceding sentences (low vs. high), for instance through a subject vs. an object relative clause. The data were analyzed using linear mixed-effects models.

Experiment 1 aimed to confirm the attachment preferences of native English speakers (n = 47) from the literature. The results confirm that overall, native English speakers prefer high attachment (69% high attachment responses). Text-explicit outweighs pragmatic information ($p < 0.001$), but low attachment never becomes the preferred option (i.e. all averages favor high attachment). Structural complexity did not affect native speakers' attachments ($p = 0.88$).

Experiment 2 examined the PP attachment preferences in highly proficient L1-Spanish L2-English speakers (n = 38) compared to a new group of L1-English controls (n = 34). Importantly, Spanish also prefers high PP attachment, so no interference from the L1 is expected. We hypothesized that, as opposed to L1 controls, structural complexity will influence L2-English speakers' attachment preferences, in that they will rely more on pragmatic knowledge in complex texts. The results (Fig. 2) show that L1 and L2 speakers show similar effects of text-explicit and pragmatic information (ps < 0.01). No main effect of group was found, but a group*complexity interaction indicates that L2 speakers (but not L1 controls) gave more low attachment responses when the structural complexity was high ($p < 0.05$).

In **conclusion,** like native English speakers, L1-Spanish L2-English speakers prefer high attachment, but interpretations are flexible and influenced by text-explicit and pragmatic information. L2-English speakers show increased low attachment preferences in structurally complex contexts, but, contrary to our hypothesis, do not rely more on pragmatic knowledge in those instances. Rather, they show an increased tendency for low attachment, suggesting that processing constraints lead them to the most recent potential attachment site.

The hairdresser that married the fisherman likes to fish.
After the fisherman came back from work, the hairdresser went fishing.
The hairdresser caught the fisherman with the fishing net.

Who had the fishing net? ❒ the fisherman ❒ the hairdresser

Figure 1. Example item in which *the fisherman* is biased based on pragmatic information, and *the hairdresser* is biased based on text-explicit information.

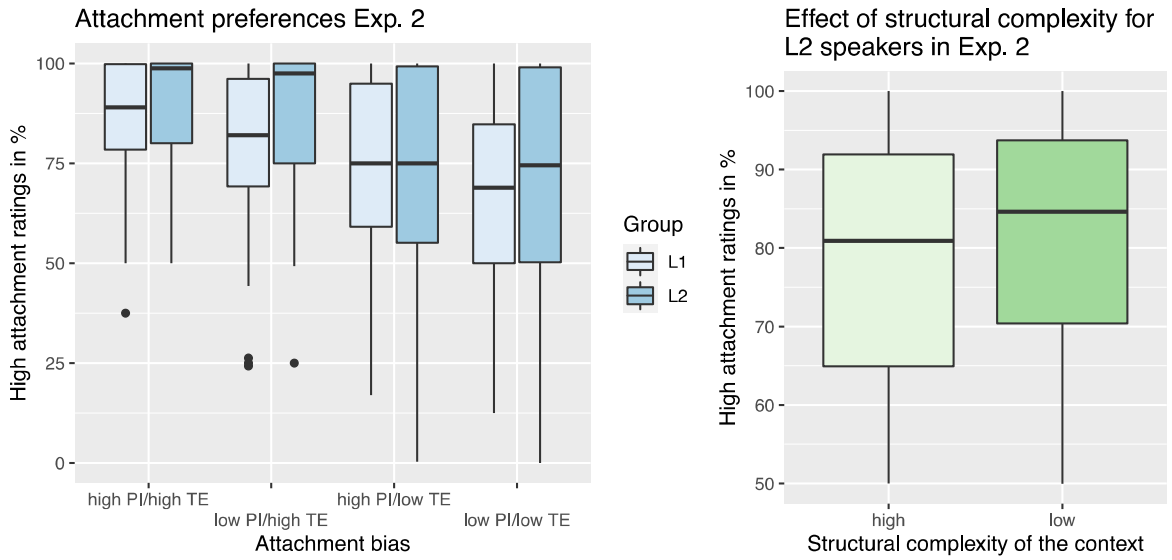

Figure 2. LEFT: Boxplot of the high attachment ratings as affected by pragmatic information (PI) bias and text-explicit (TE) bias from Experiment 2 for L1 controls and L2-English speakers. RIGHT: Boxplot of the high attachment ratings for L2-English speakers in Experiment 2 based on the structural complexity of the context. A significant effect of structural complexity of the context was found for the L2 speakers.

References

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