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Influence of noun dependents on French adjective placement in sentence production

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Adjective position

- ▶ In French, attributive adjectives can appear either before or after the noun (Blinkenberg 1933, Waugh 1977, Forsgren 1978, Wilmet 1981, Bouchard 1998, Abeillé and Godard 1999, Noailly 1999, Thuilier et al. 2012, among others).

- (1) une agréable_A soirée_N (prenominal position)
- (2) une soirée_N agréable_A (postnominal position)
- 'a nice evening'

- ▶ This phenomenon is influenced by various factors interacting in a complex way and favoring one position over the other.

Syntactic integration point of view

- ▶ Hawkins (2001, and prior research) suggests that grammars can reflect a performance pressure for speakers to prioritize early recognition of constituents. However, in the case of French, this theory would not be sufficient to predict a tendency toward Adj-NP-PP order over NP-Adj-PP order.

- ▶ An additional possibility is that speakers seek to reduce the integration cost in processing for their listeners. Such an account would require the following assumption

Hypothesis Placing an adjective between the N and PP increases an integration cost for the PP.

- ▶ Although later versions of Dependency Locality Theory (Gibson, 2000) claim that only intervening discourse referents should affect integration cost, an earlier version (Gibson, 1998) suggests an extension to include adjectives as interveners based on data showing that the placement of an adjective on the lower of two NPs that could host a relative clause promotes low attachment.

- ▶ Demberg and Keller (2008) also suggest that additional categories (such as adjectives and prepositions) may also incur an integration cost, based on eye movement corpus data.

Prosodic point of view

- ▶ Phonological phrasing depends on the interaction of 2 types of constraints (Delais-Roussarie, 1996):
 - ▶ Phonological constraints concerning the size of the phrase.
 - ▶ Alignment constraints accounting for the relation between the surface syntactic structure and the prosodic structure.
- ▶ Syntactic alignment predicts the following phrasing for NPs containing adjectives and PPs.

[Det Adj Noun] [Det Adj Noun] [PP]
 [Det Noun] [Adj] [Det Noun] [Adj] [PP]

- ▶ But phonological constraints may change these theoretical phrases in order to have 3-to-6 syllable groups:

(le président serbe)₅ [Det Noun Adj] 'the Serbian president'
 (le mélancolique)₅ (rhinocéros)₄ [Det Adj] [Noun] 'the melancholic rhinoceros'

- ▶ Moreover the eurhythmicity constraint favors balanced number of syllables in the prosodic structure.

Hypothesis Placing the adjective before the noun in the presence of a PP leads to better phonological phrasing (fewer phonological phrases, more balanced groups, well-sized groups).

Conclusions

- ▶ Results of the recall experiment confirm corpus study observations and show that adjectives tend to appear in prenominal position when the NP contains postnominal PP.
- ▶ 3 levels of organization may be at play in the results of the experiment
 - Lexical level: adjectives have more or less strong idiosyncrasic preferences for one position.
 - Prosodic level: in the presence of a postnominal PP, preposed adjectives tend to limit the number of phrases, to give rise to more balanced and well-sized groups.
 - Syntactic level: preposed adjectives reduce the integration cost for the PP with respect to the noun.
- ▶ None of these hypotheses completely explains the results of the recall experiment.
- ▶ Further experiments are needed in order to understand what exactly is the role of each level and how they interact.

Sentence recall study

Research question

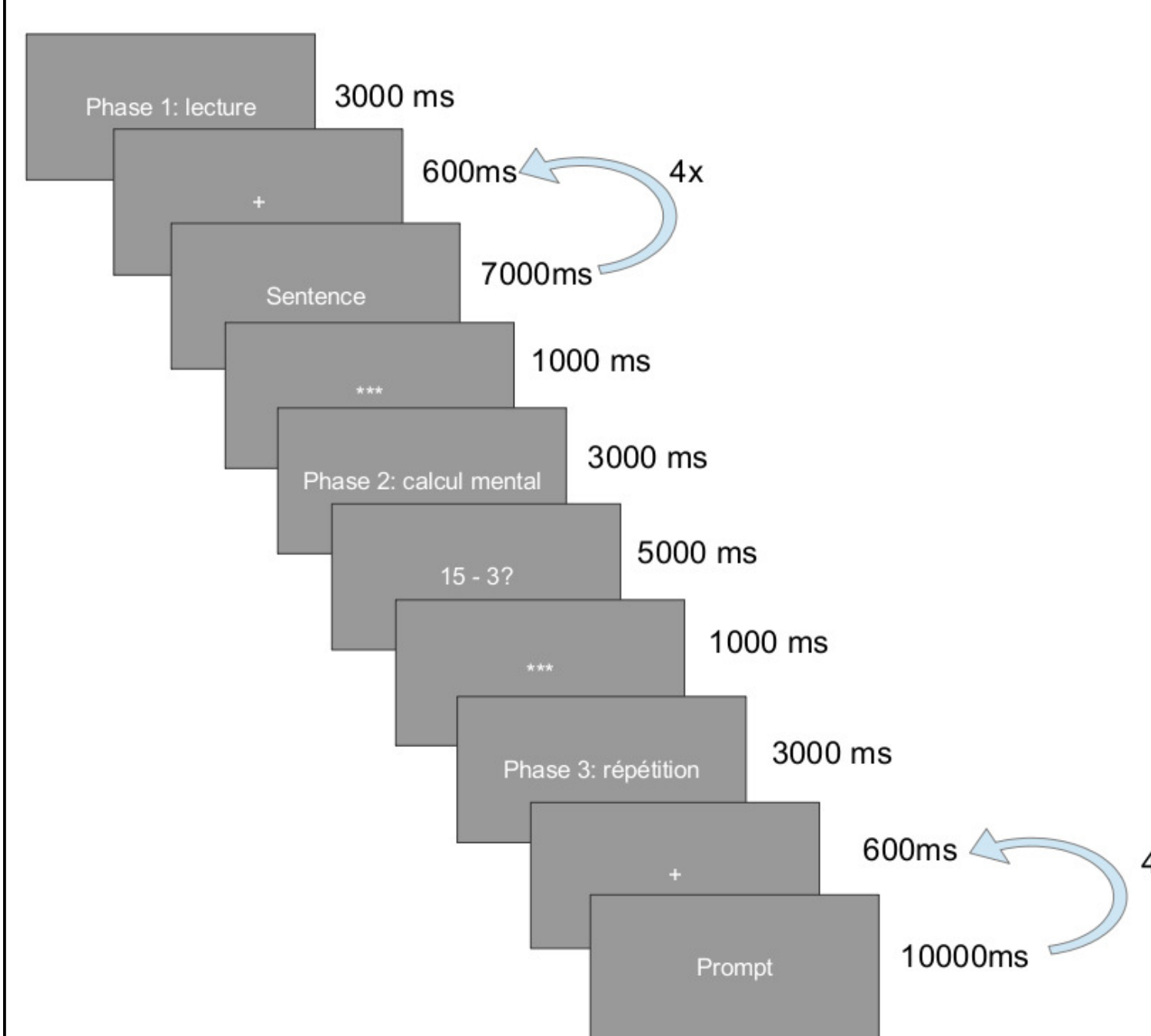
Does the presence of noun dependents affect the position of the adjective in sentence production ?

- ▶ A corpus study (Thuilier *et al.*, 2012) showed a significant effect of the presence of noun dependents on adjective position:
 - When the head noun is followed by a relative clause, a PP or an other adjective, the adjective tends to occur in prenominal position
- ▶ If noun dependents affect the position of adjective, then we would expect a tendency to produce more adjectives in prenominal position when there is a PP in postnominal position.
- ▶ In order to test this hypothesis, we conducted a study of sentence recall, examining rates of order inversions as a way to detect effects of the NP structure on adjective position.

Methods

Materials

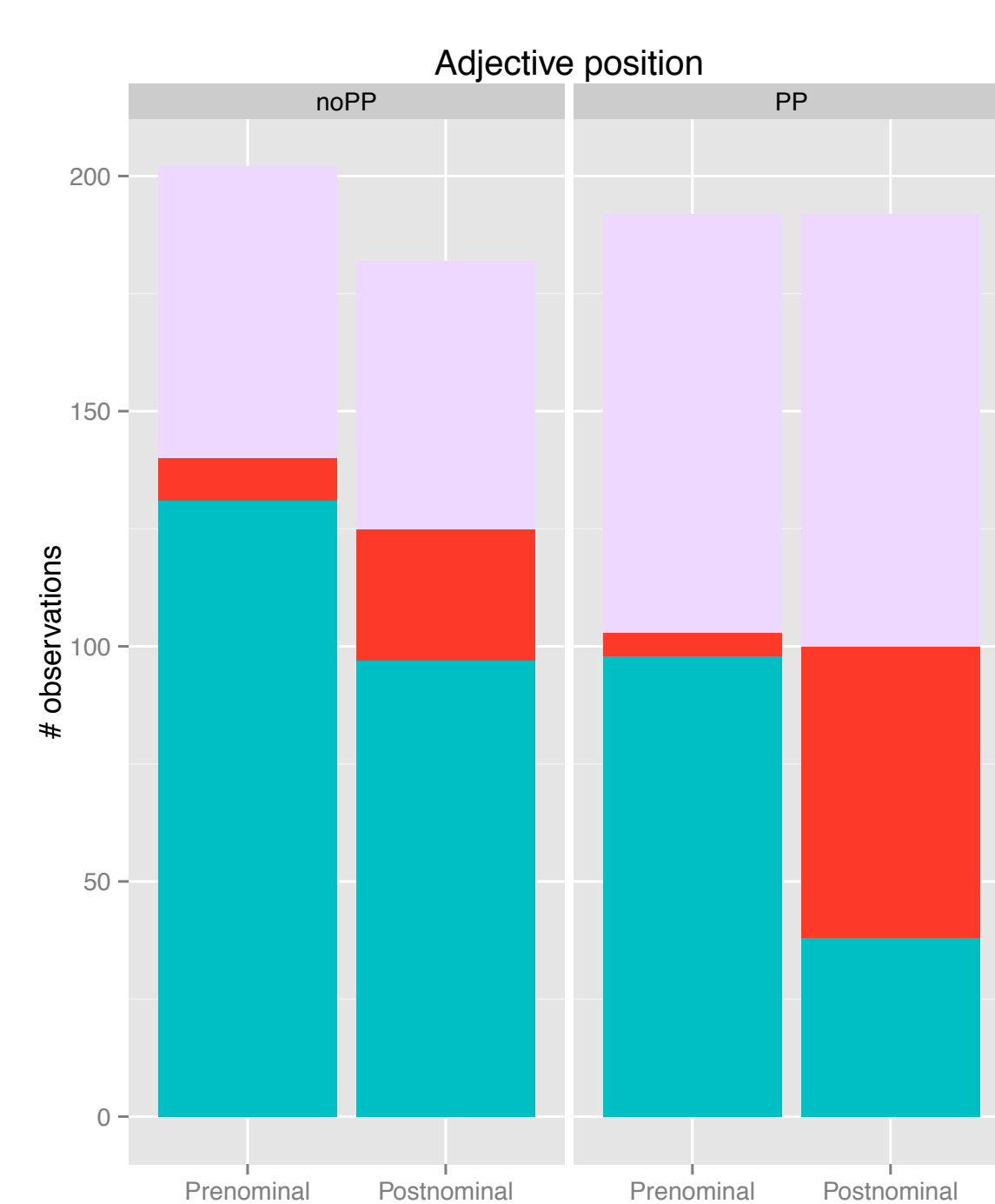
- La consommation d'alcool des jeunes représente {un véritable problème / un problème véritable}
- La consommation d'alcool des jeunes représente {un véritable problème / un problème véritable} pour les autorités



Procedure & Coding

- ▶ 24 blocks, each containing 3 phases:
 - Reading of 4 sentences (1 experimental item and 3 distractors).
 - Mental arithmetic.
 - Recall of the 4 sentences.
- ▶ In addition of the 24 blocks, the subject completed 2 training blocks.
- ▶ Responses transcribed and coded by the two authors (second coding in progress).
- ▶ Participants with less than 30% usable data were excluded from analysis, as well as subjects and items that had zero observations in a condition.

Results



- ▶ 32 subjects, 24 experimental items, 12 different adjectives.
- ▶ Lower proportion of valid responses (Correct + Inversion) when the NP is more complex (PP).
- ▶ Only 6.4% of inversions from prenominal to postnominal position.
- ▶ 62% of inversions are produced from postnominal to prenominal position in NPs with PP dependents (vs. 22.4% of inversions without PPs).
- ▶ Clear effect of post-nominal PPs on the position of adjectives: significant interaction ($p < .01$ in a mixed-effects logistic regression analysis).

- ▶ Important lexical idiosyncrasies:

- 9.8% of responses with *mauvais* 'bad' in postnominal position.
- 80.8% with *considérable* 'considerable' in postnominal position.

- ▶ Prosodic point of view:

- Inversions from pre- to postnominal position concern long adjectives (3-4 syll): *redoutable*, *irrésistible*, *considérable*, *traditionnel*

... (a un charme)₃ (irrésistible)₄
 'has an irresistible charm'
 ... (une évolution)₅ (considérable)₄ (de qualité)₄
 'a considerable evolution of quality'

Experimental items	Co	Inv.
- Inversions from post- to prenominal position are mainly explained by the presence of the PP.		
... (un chasseur) ₃ (redoutable) ₃ / (un chasseur redoutable) ₆	8	0
... (un redoutable chasseur) ₆ / (un redoutable) ₄ (chasseur) ₂	3	3
... (un chasseur) ₃ (redoutable) ₃ (de cerfs) ₂	3	4
... (un redoutable) ₄ (chasseur de cerfs) ₄	6	0
'a formidable stag hunter'		