



Coordination of Unlike Categories Creates Grammaticality Illusions



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Introduction

- **Law of the coordination of Likes (LCL) (Chomsky 1957, Williams 1981)**
Only constituents of the same syntactic category can be coordinated.
 - Exceptions:
Pat is [_{DP} a Republican] and [_{AP} proud of it]. (Sag et al., 1985)
Not all of us treat our animals [_{PP} with respect] and [_{AdvP} humanly]. (Patejuk & Przepiórkowski 2021)
- **Wasow's Generalization** (as formulated in Pullum & Zwicky 1986):
Iff in a given syntactic construction a constituent X can be replaced without change of function by a constituent Y, then it can also be replaced by a coordination of X and Y.
 - For our purpose: **If A selects X and A selects Y, A should also select [X & Y].**
Pat is [_{AP} proud of it]. Pat is [_{DP} a Republican]
→ Pat is [_{DP} a Republican] and [_{AP} proud of it]
- One exception to Wasow's Generalization: **DP/CP coordination**:
*You can depend on [_{DP} my assistant]. *You can depend on [_{CP} that he will be on time].*
→ (ok) You can depend on [_{DP} my assistant] and [_{CP} that he will be on time].
*→ *You can depend on [_{CP} that my assistant will be on time] and [_{DP} his diligence].*
- Bruening & Al Khalaf (2020), henceforth B&AK:
 - The CP conjunct is actually contained in a silent nominal shell, satisfying LCL but lacks the ability to check the S(ematic)-selectional requirements of the matrix predicate.
 - S-selectional requirements are always satisfied by the closest conjunct.

Hypothesis

- **Our proposal:**
 - Wasow's Generalization holds, DP/CP coordinations are the result of an illusion due to processing-level factors (working memory constraints).
 - DP/CP coordination structure is variably degraded, depending on the position of the CP conjunct.
 - When CP conjunct is further away from the selecting predicate, the selectional failure is less apparent (due to activation decay of the selectional requirements on the matrix predicate)

Methods

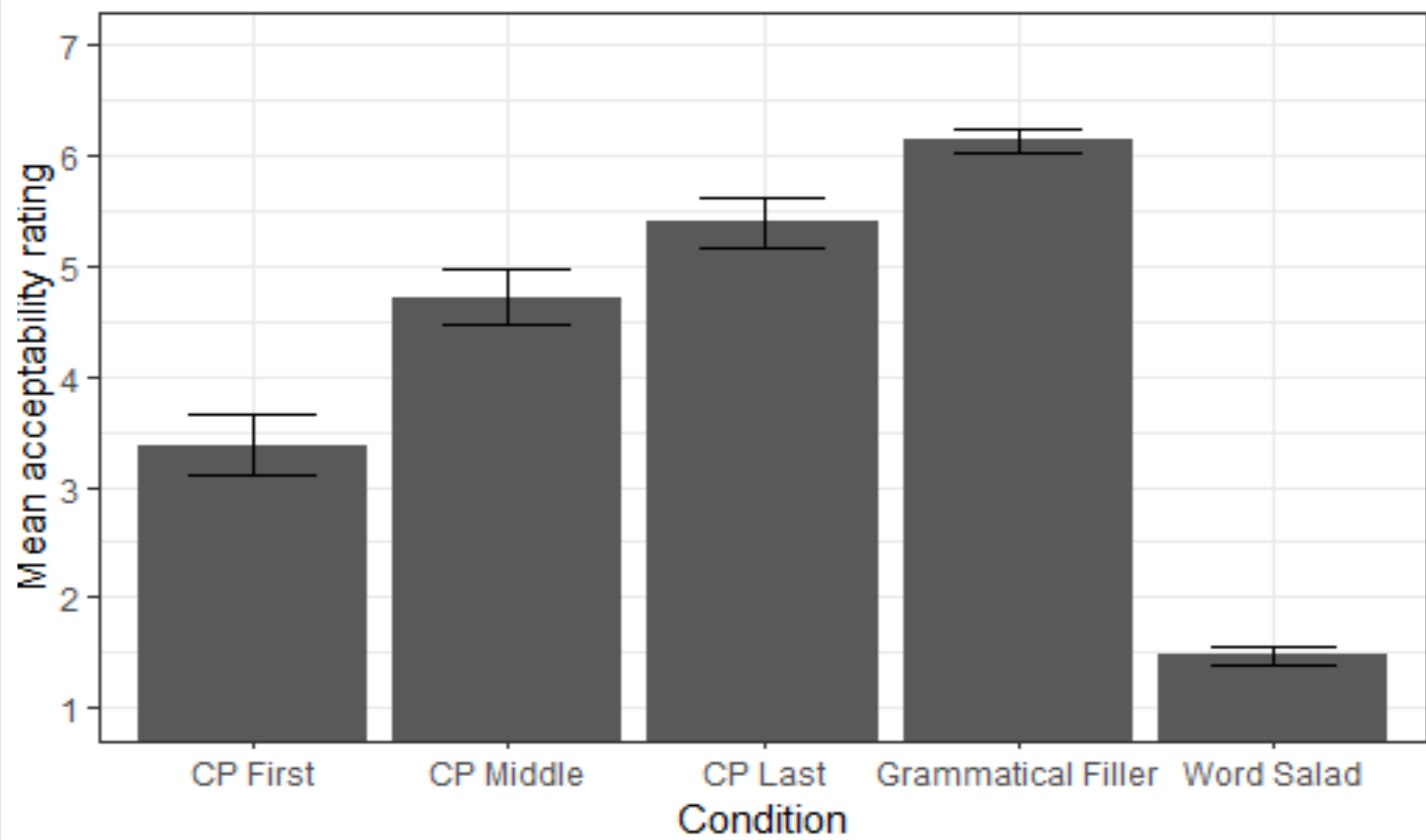
| Condition | Scheme | Example Stimuli |
|----------------------|--|--|
| CP-First | CP & DP ₁ & DP ₂ | The success of the project depends on that the contractors will do their part , a good design by the engineers, and the diligence of the workers. |
| CP-Mid | DP ₁ & CP & DP ₂ | The success of the project depends on a good design by the engineers, that the contractors will do their part , and the diligence of the workers. |
| CP-Last | DP ₁ & DP ₂ & CP | The success of the project depends on a good design by the engineers, the diligence of the workers, and that the contractors will do their part . |
| Grammatical Filler | DP & DP & DP CP & CP & CP | The student is looking for her proof of enrollment, her updated class schedule, and the list of textbooks for her classes. |
| Ungrammatical Filler | Word Salad | The detective interviewed and the who was who responded first to the victim, the witnesses, investigating the robbery police officer the scene. |

Methods (cont'd)

- **Predictions:**
 - Three should be a 3-way distinction in acceptability: CP-First < CP-Mid < CP-Last
 - By contrast, B&AK makes no distinction between CP-Mid and CP-Last.
- **Experimental Design:**
 - Acceptability judgment experiment (N=32) on *prolific*
 - 3 critical conditions, 16 items, 32 fillers (16 good, 16 bad). Each participant saw 48 sentences.
 - Each item appears exactly once for each participant, randomly instantiated as one of the 3 conditions.
 - Participants were asked to rate the acceptability of the target sentence on a 1-7 Likert scale.

Results

- **Model:** LMER model predicting acceptability with the fixed effect of condition (ref: CP-Mid), and maximal random-effects structure.
- **CP-Last > CP-Mid:**
 $\beta=0.62$, $SE=0.16$, $t=-3.8$
- **CP-First < CP-Mid:**
 $\beta=-1.42$, $SE=0.25$, $t=-5.71$
- There is a **three-way distinction** among the critical conditions. There is no clear grouping among the three conditions.



Discussions

- **The 3-way distinction cannot be explained by B&AK's syntactic account**
 - Under B&AK's analysis, DP/CP coordination is ungrammatical only when CP conjunct is initial (specifically, adjacent to the selecting head)
 - Thus, it cannot explain **the distinction between CP-Last and CP-Mid**: both are allowed under B&AK's account.
- **A possible processing-level explanation**
 - Matrix predicate X selects for DPs but not CPs (+DP/-CP)
 - X's selectional features needs to be checked against all conjuncts (per Wasow's Generalization)
 - Activation of +DP/-CP features decay in working memory over time;
 - The further away a CP conjunct is from X (when there are more intervening conjuncts), the less activated the X's -CP feature is in the comprehenders' working memory when it is checked.
- **A hybrid account?**

References
Chomsky, N. (1957). The Logical Structure of Linguistic Theory. ♦ Bruening, B., & Al Khalaf, E. (2020). Category mismatches in coordination revisited. *Linguistic Inquiry*, 51(1), 1-36. ♦ Patejuk, A., & Przepiórkowski, A. (2021). Category Mismatches in Coordination Vindicated. *Linguistic Inquiry*, 1-35. ♦ Sag, I. A., Gazdar, G., Wasow, T., & Weisler, S. (1985). Coordination and how to distinguish categories. *Natural Language & Linguistic Theory*, 3(2), 117-171. ♦ Williams, E. S. (1981). Transformationless grammar. *Linguistic Inquiry*, 645-653.