

More Than One Agreement Planning Mechanism?

Reflexive Number Source Sensitive to Syntactic Structures

INTRODUCTION

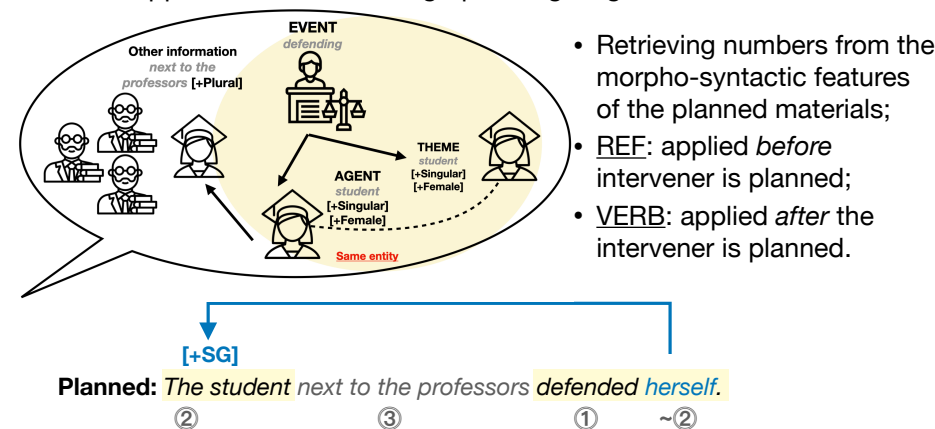
- Two types of number agreement attractions:
 - Subject-Verb Agreement (VERB):**
 - The student next to the professors *are* singing.
 - Reflexive-Antecedent Agreement (REF):**
 - The student next to the professors defended *themselves*.
- Previous studies (specifically, Kandel & Philips 2022) showed that in naturalistic sentence production, they have different error rates:
- Mean error rate for **VERB** $\approx 12.5\%$ $\gg$ **REF** $\approx 1.5\%$
- Assume the consensus framework (e.g., Levelt 1994), sentence production involves mapping from *preverbal message encoding* to sentence utterance.

Research Questions:

- Where is number agreement in the sentence planning & production process?
- Are there different underlying mechanisms between verb and reflexives?

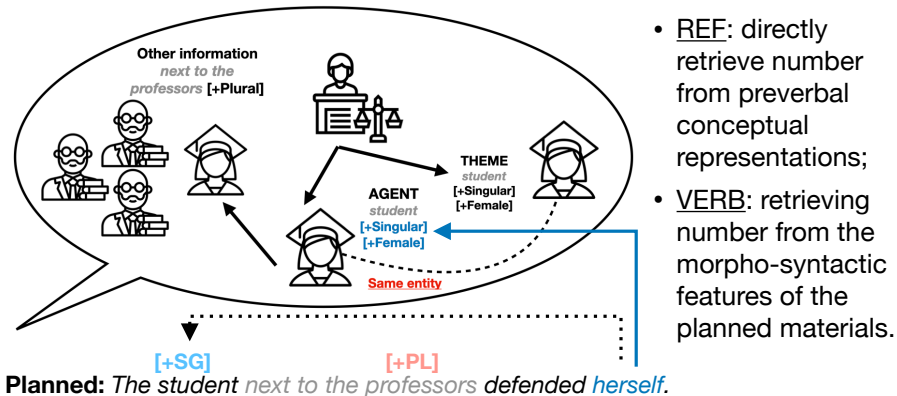
HYPOTHESIS 1: PLANNING ORDER (PO)

Planning Order Hypothesis: one single mechanism for both VERB and REF, but applied at different timing / planning stages:



HYPOTHESIS 2: NUMBER SOURCE (NS)

Number Source Hypothesis: two distinct mechanisms for both VERB and REF regarding to the source of the number feature retrieval:

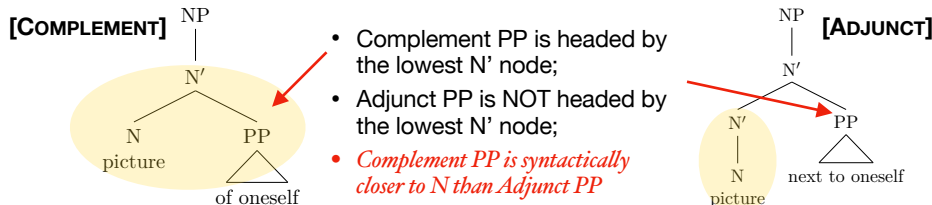


CURRENT STUDY

- Both hypotheses are compatible with previous experimental results.
- Current study examines two additional reflexive cases where the two hypotheses diverge:

VERB The bluey above the greenies was mimming.
COARGUMENT The bluey above the greenies mimmed [itself].
COMPLEMENT The bluey above the greenies mimmed [the picture of itself].
ADJUNCT The bluey above the greenies mimmed [the picture [next to itself]].

* For each condition, we tested all SS SP PS PP number combinations.

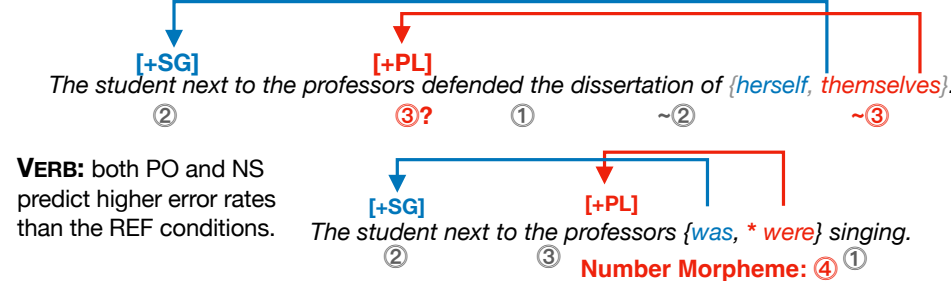


PREDICTIONS

- Planning Order:** COARGUMENT < COMPLEMENT < ADJUNCT < VERB
- Number Source:** COARGUMENT $\approx$ COMPLEMENT $\approx$ ADJUNCT < VERB

COMPLEMENT & ADJUNCTS:

- PO: the PP (and thus its REF) is less obligatory than in COARGUMENT, thus planned later;
- NS: always retrieving number feature from conceptual representation, thus no change;

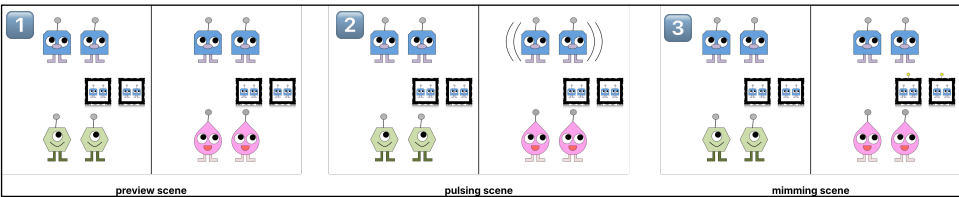


VERB: both PO and NS predict higher error rates than the REF conditions.

The student next to the professors {was, *were} singing.
Number Morpheme: ④ ①

METHOD: SCENE DESCRIPTION TASK

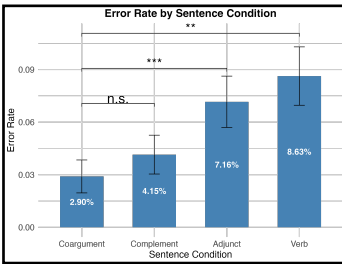
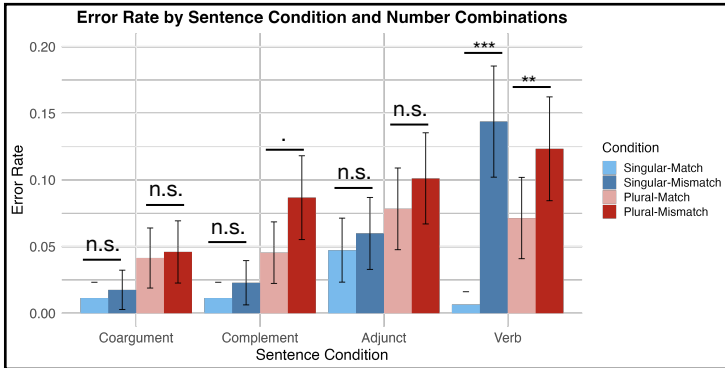
- Goal** = to elicit the naturalistic process of sentence production: from generating *preverbal messages* to planning the *sentence structure*.
- Current Approach** (extending Kandel & Philips) = alien world with nonce words: participants see a series of pictures and produce a sentence to describe the depicted event.



Stimuli for sentence: The blueys above the pinkies mimmed the pictures of themselves.

RESULTS

- 2672 production trials from 88 participants after exclusion.
- Fitted GLMM models and used `Emmeans` to interpret the models.

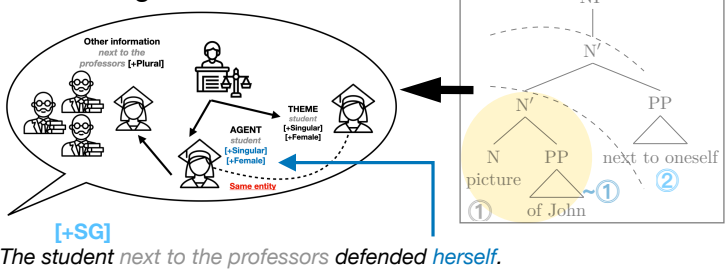


- Replication: VERB has significant attraction effect
- For all three reflexives: **attraction-prone but insignificant attraction** effect for each condition.
- Significant markedness effect: PL more errors than SG subj.

⇒ **COARGUMENT $\approx$ COMPLEMENT $\approx$ ADJUNCT**

INTERPRETATIONS

Reconciling the two accounts?



⇒ Reflexives do not show reliable agreement attraction across syntactic positions;
A Hybrid Account: conceptual access mediated by syntactic structure (here, height of merging sites).

CONCLUSION

- We extended Kandel & Philips with 2 reflexive conditions;
- Results replicate K&P; new evidence suggesting Number Source (conceptual route) dominating Planning Order (syntactic route).
- Hybrid mechanisms are needed for current observations.