



# Effects of Morphological Identity and Voice Mismatch in VP Ellipsis

Jesse Harris (UCLA – [jharris@humnet.ucla.edu](mailto:jharris@humnet.ucla.edu)) & Adrian Brasoveanu (UCSC – [abrsvn@ucsc.edu](mailto:abrsvn@ucsc.edu))



## I. Introduction

**Licensing ellipsis.** Implicit material in VP ellipsis  $\Delta$  argued to be recovered by various mechanisms: syntactic identity, semantic identity, discourse, and combinations of the above.

- (1) a. John met Sue, and Mary did  $\Delta_{\text{meet Sue}}$  too.
- b. Sue was met by John, and Mary was  $\Delta_{\text{met by John}}$  too.

**Voice mismatch asymmetry.** Voice (*Active, Passive*) mismatches selectively tolerated: Passive-Active mismatches more acceptable than Active-Passive mismatches [1, 2, 3]

- (2) a. \* John met Sue, and Mary was  $\Delta_{\text{met by Sue}}$  too.
- b. ? Sue was met by John, and Mary did  $\Delta_{\text{meet John}}$  too.

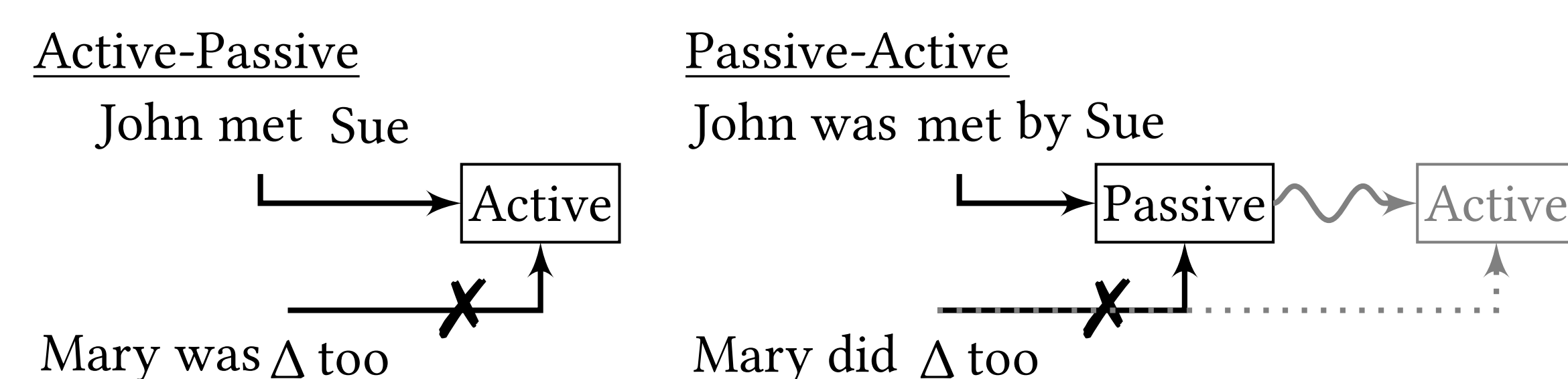
### Retrieval accounts.

- Voice match:** Syntactically identical antecedent retrieved, licensing standard ellipsis.
- Voice mismatch:** Syntactic form of passive misremembered or misretrieved as active, resulting in occasional grammatical illusion. [2, 4]

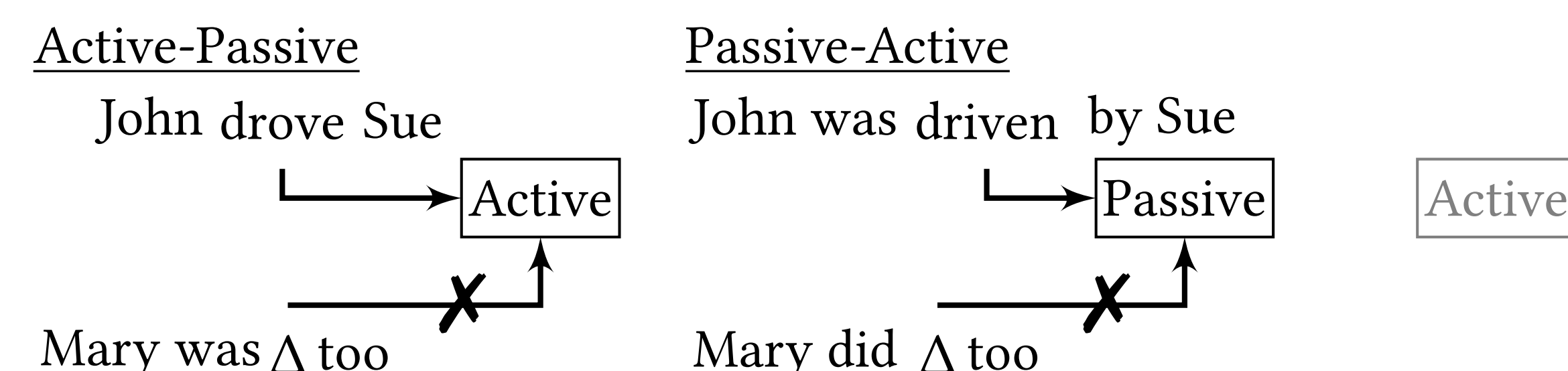
## II. Competition-based account

Inspired by ACT-R architecture [5]

- Lexical items spread activation to items of the same form, including homophonous Active-Passive forms
- Unencountered Active or Passive forms receive spreading activation when Passive or Active forms are accessed
- But Actives have a higher base activation than Passives due to increased base frequency, accounting for asymmetry:



**Novel prediction:** Passives with different forms than Actives (*was driven~drove*) spread no/less activation to Actives, hence less facilitation for Passive-Active VPE than those with the same form (*was met~met*).



## III. Materials and predictions

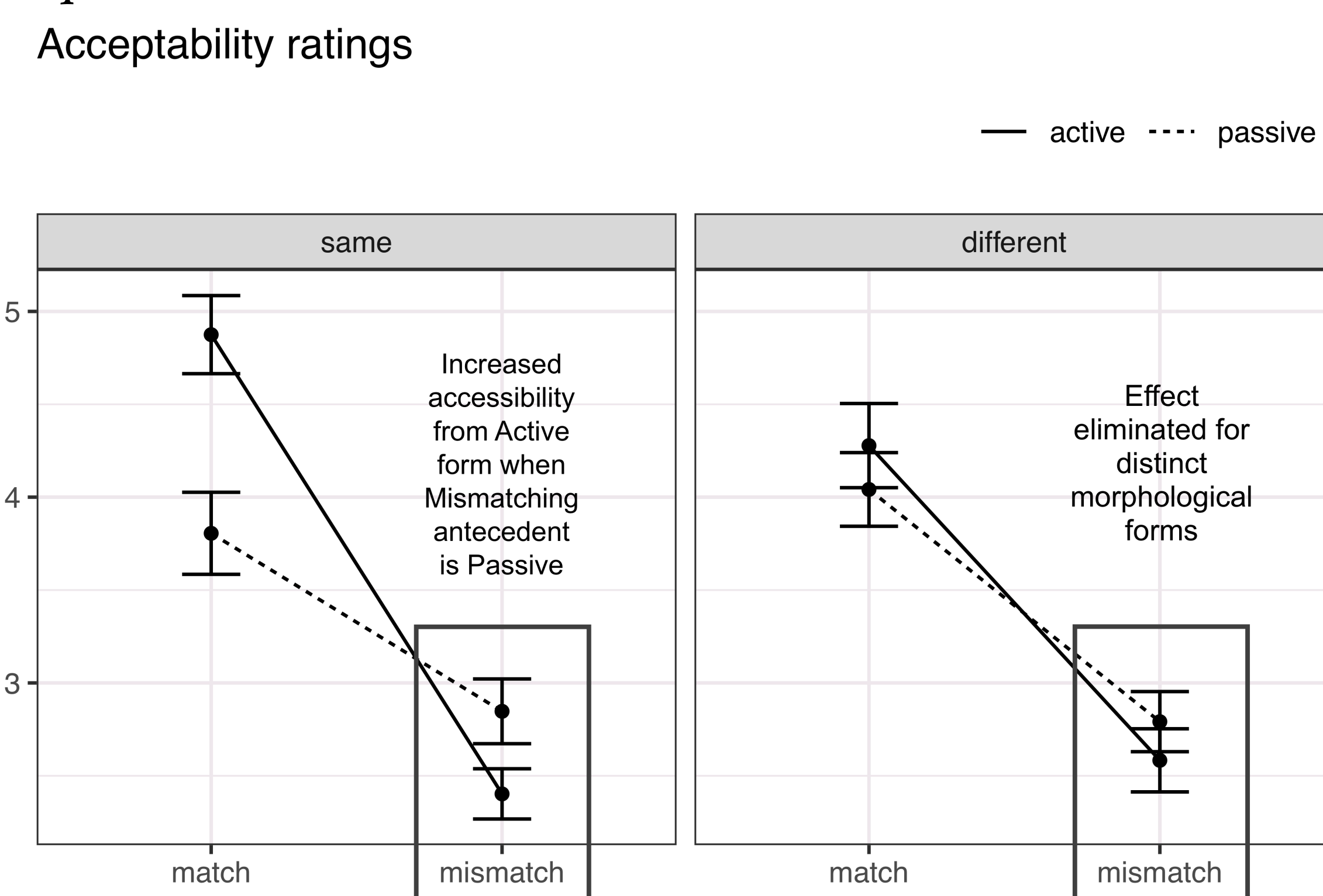
**Materials.** 24 quartets crossed **Antecedent Voice** type (Active/Passive) with **Match** (Match/Mismatch). Between items manipulation of **Morph** (Same/Different)

Morph	Voice	Main clause	Match	Mismatch
Same	Active	John found Mary, and then Peter	did too	was too
	Passive	Mary was found by John, and then Peter	was too	did too
Different	Active	Abby drove Frank, and then Sloan	did too	was too
	Passive	Frank was driven by Abby, and then Sloan	was too	did too

- Voice Mismatch Penalty:** General cost for mismatching ellipsis.
- Passive Penalty:** General cost for Passive over Active structures.
- Mismatch Asymmetry:** Passive-Active mismatches more acceptable than Active-Active mismatches.
- Mismatch Asymmetry modulated by Morphology:** Increased acceptability of Passive-Active mismatch reduced or eliminated when morphological form of voice differs.

## IV. Experiment 1: Acceptability ratings

24 native English speakers from UCLA rated sentences for acceptability on a Likert scale (7=Completely acceptable). All subjects passed catch item controls.

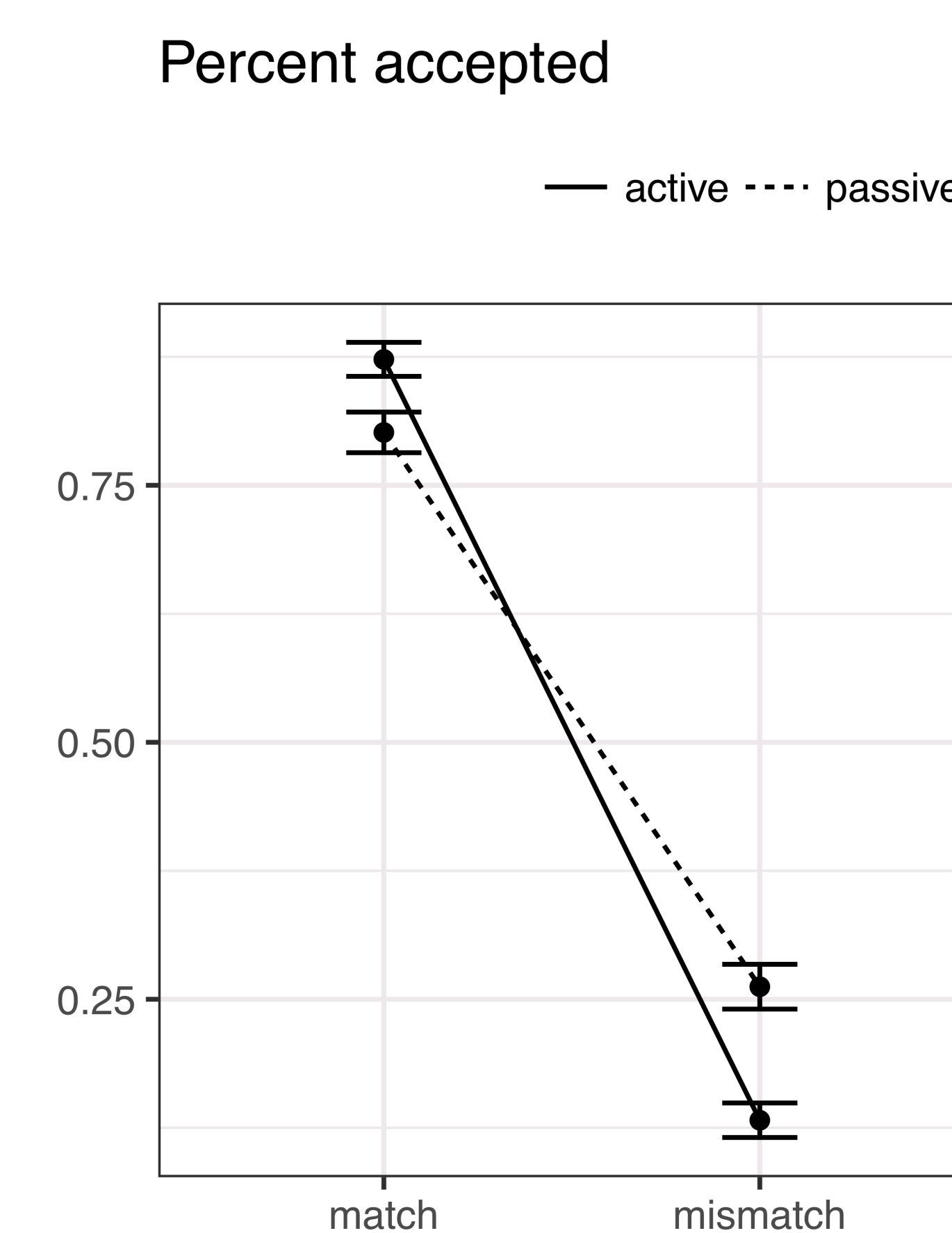
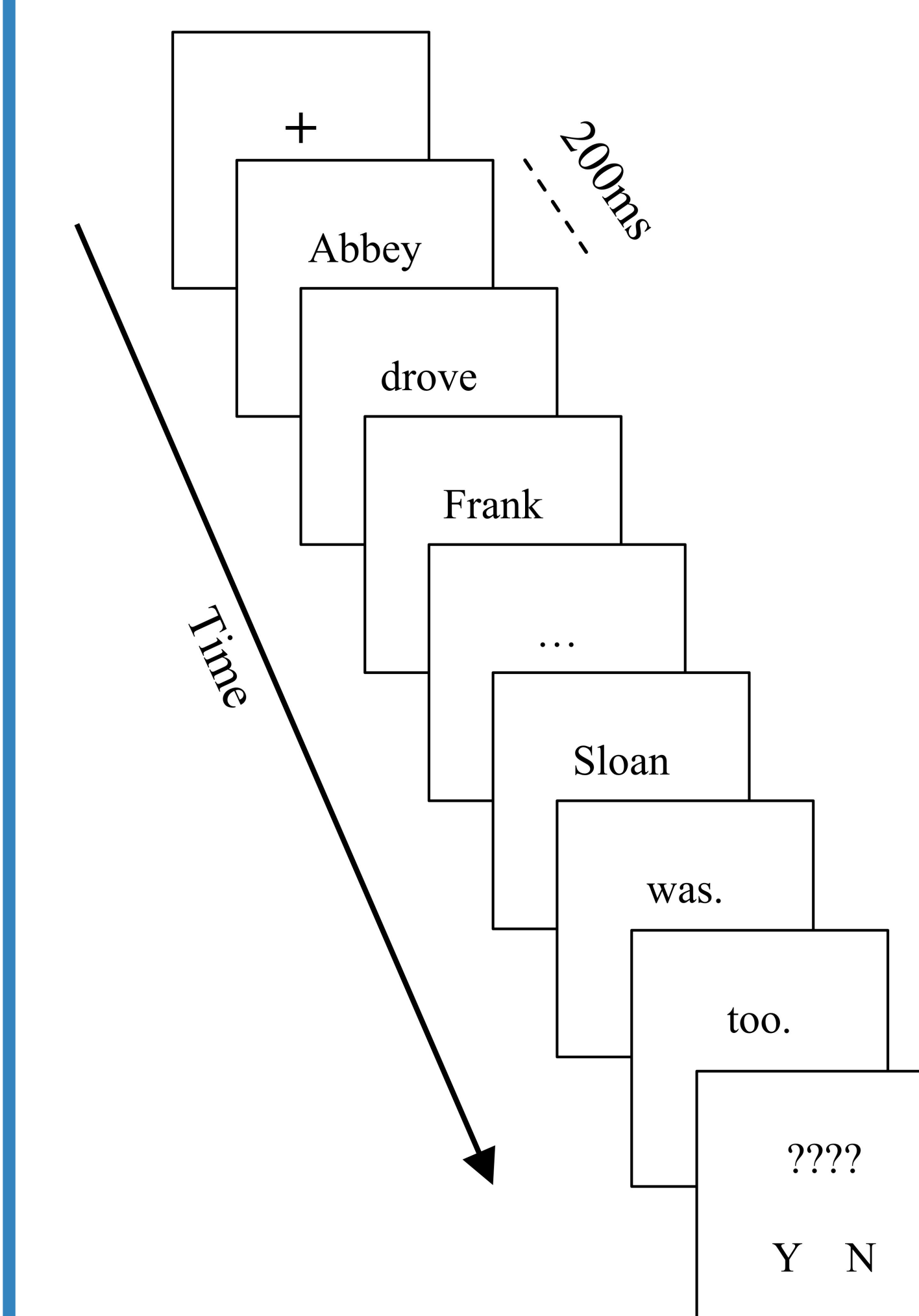


- Voice Mismatch Penalty
- Passive Penalty
- Mismatch Asymmetry
- No Mismatch Asymmetry for Different morphology verbs

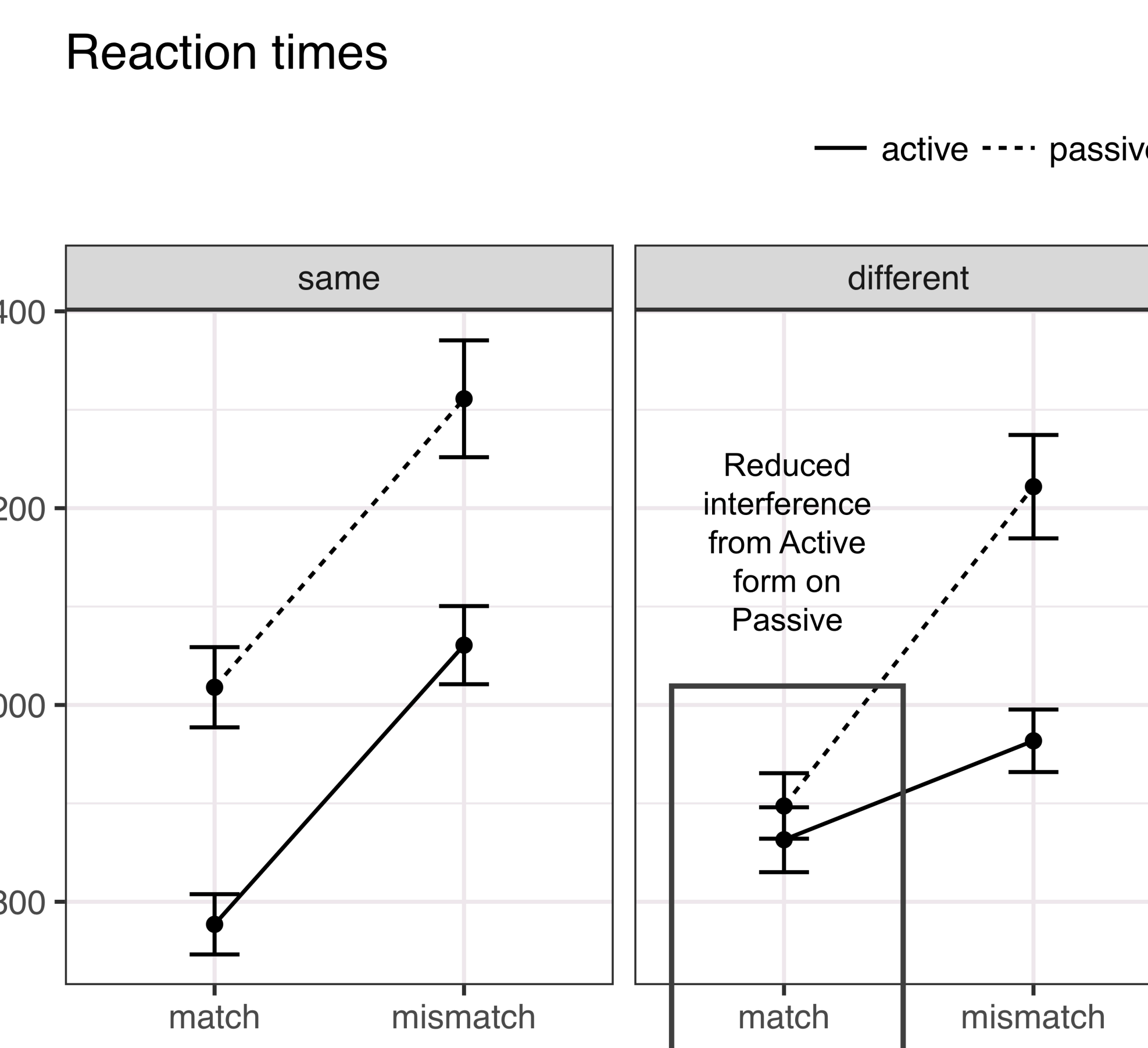
**Voice morphology:** Misretrieval of VP depends on morphological form.

## V. Experiment 2: RSVP Speeded grammaticality

64 native English speakers from UCLA scoring over 70% on unrelated filler items. 2AFC Speeded acceptability study. Results analyzed as ex-Gaussian Bayesian models.



- Voice Mismatch Penalty
- Passive Penalty
- Mismatch Asymmetry



- Mismatch Asymmetry modulated by Morphology: Lack of competition from Active form given Passive antecedent with different form yields faster RTs.
- Effect trended in Percent accepted, but not significant.

## VI. Conclusions and further questions

- Replicated **Voice Mismatch Penalty + Asymmetry** [1, 4] and **Passive Penalty** [6] in offline and online paradigms
- Support for **novel prediction** that Voice Mismatch Asymmetry restricted to cases where the Active and Passives share morphological form:
  - Exp 1. Asymmetry disappears** in acceptability ratings when Passive and Active forms are distinct;
  - Exp 2. Shorter RTs for Passive Match** case when morphological form is distinct from Actives – suggesting that there is **decreased lexical competition** from more frequent Actives, which speeds time to decision

- Effects of discourse coherence might also be limited to/modulated by morphology?
- Modeling effects directly within ACT-R model?

## References

- Clifton, et al. (2019). A note on the voice mismatch asymmetry in ellipsis. *JPR*, 48:877–887
- Parker (2018). A memory-based explanation of antecedent-ellipsis mismatches. *Glossa*, 3
- Martin (2018). Cue integration during sentence comprehension. *PLoS one*, 13
- Arregui, et al. (2006). Processing elided verb phrases with flawed antecedents: The recycling hypothesis. *JML*, 55:232–246
- Anderson, & Lebiere (1998). *The Atomic Components of Thought*. Lawrence Erlbaum Associates
- Poppels, & Kehler (2019). Reconsidering asymmetries in voice-mismatched VP-ellipsis. *Glossa*, 4

AMLaP 26 @ Potsdam, 3–5 September 2020 ★ Thanks to Angelica Pan and the amazing RAs at the UCLA Language Processing Lab!