

# Objects and self-portraits: Contrasts in the processing of reflexive pronouns across languages and structures

Maayan Keshev, Noa Bassel & Aya Meltzer-Asscher, Tel-Aviv University \* CUNY 2018 University of California, Davis



## Introduction

Are reflexive pronouns sensitive to non-local antecedents in online processing?

According to syntactic theories (since at least Chomsky 1981), a matrix subject should not be available as an antecedent for an embedded anaphor. However, online processing experiments found that a feature matching antecedent like the subject in (1) can facilitate the processing of the anaphor despite the distance between them (i.e. agreement attraction effects - Parker & Phillips, 2017; but see Dillon et al., 2013; Sturt, 2003).

(1) The influential congresswoman said that the factory workers inspired herself ...

- Sloggett & Dillon (2016, 2017) suggest:
  - Faster processing of reflexives matching a distant antecedent reflects a logophoric reading (Clement 1975; Kuno 1987; Reinhart & Reuland 1993), in which the reflexive is coreferential with the point-of-view holder of the sentence.
  - Attraction effects in reflexives are influenced by animacy and speech predicates, as expected under a logophoric account (Charnavel & Sportiche, 2016).
- Logophoricity is language-dependent:
  - English:** parallel distribution of reflexive anaphors and pronouns, indicative of logophoricity, in conjunctions, PPs and picture NPs
  - Hebrew:** only picture NPs enable a pronoun-anaphor alternation.
  - It is debated whether English picture-noun reflexives are logophoric or bound NP-internally by covert elements (see Runner, Sussman, & Tanenhaus 2003 for an overview).

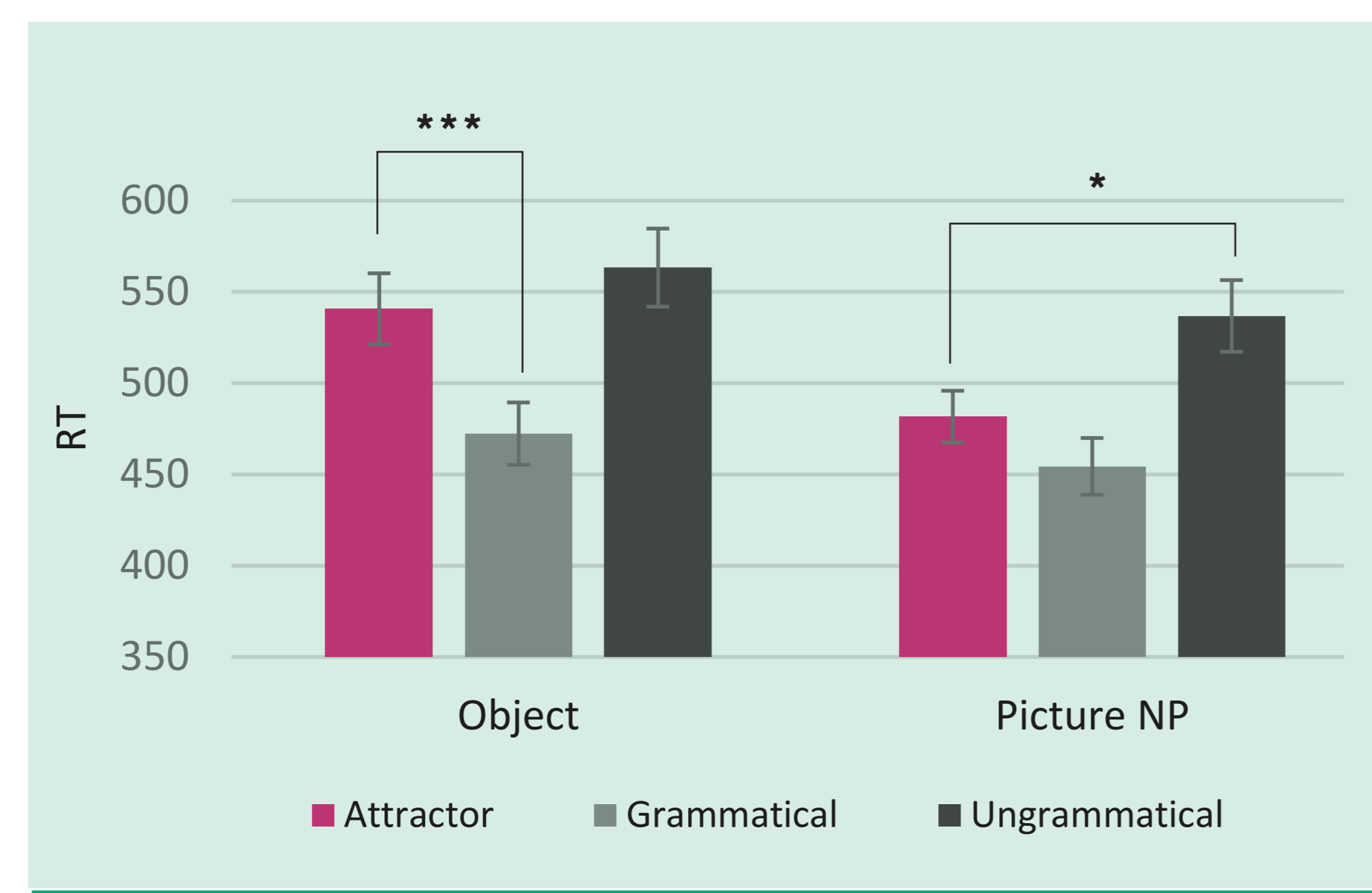
## The current study

Will attraction effects for long distance antecedents emerge in Hebrew?

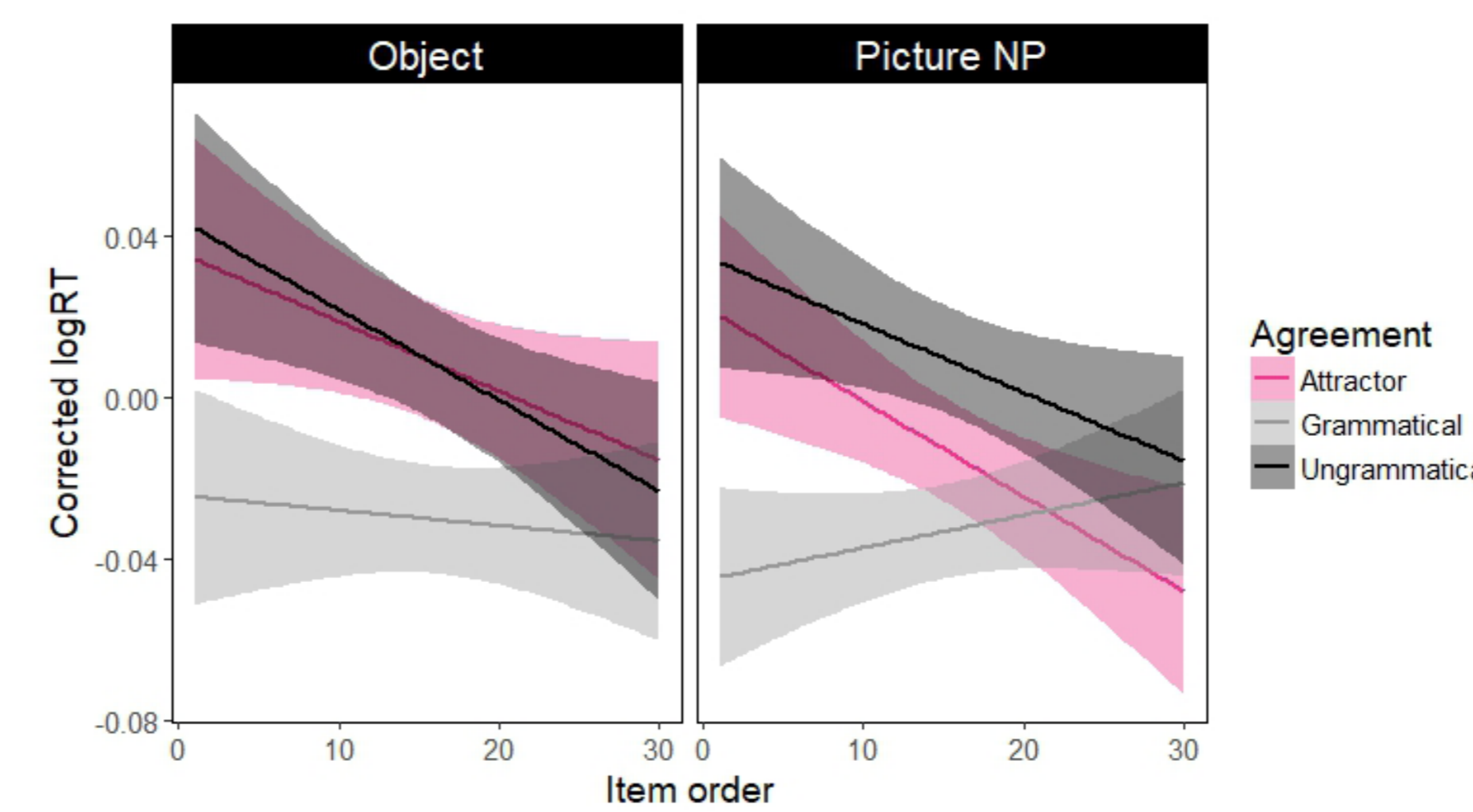
- We ran a self-paced reading experiment (N=60, mean age: 24.8) to determine what processing pattern Hebrew speakers exhibit in long distance point-of-view anaphors, and in the corresponding picture NP constructions.
  - The leading **actresses** suggested that the editors.M ...
  - The leading actors suggested that the editors.M ...
  - The leading actors suggested that the editors.F ...
  - ... will advertise **themselves.F** on the front page.
  - ... will advertise pictures of **themselves.F** on the front page.
- Materials (30 sets) manipulated the sentential position of the anaphor (object position v. picture NP), and the grammaticality of the anaphor (grammatical antecedent, no antecedent, or matching a non-local antecedent, i.e. attractor condition). Experimental items were presented along with 60 grammatical filler items.

## Results

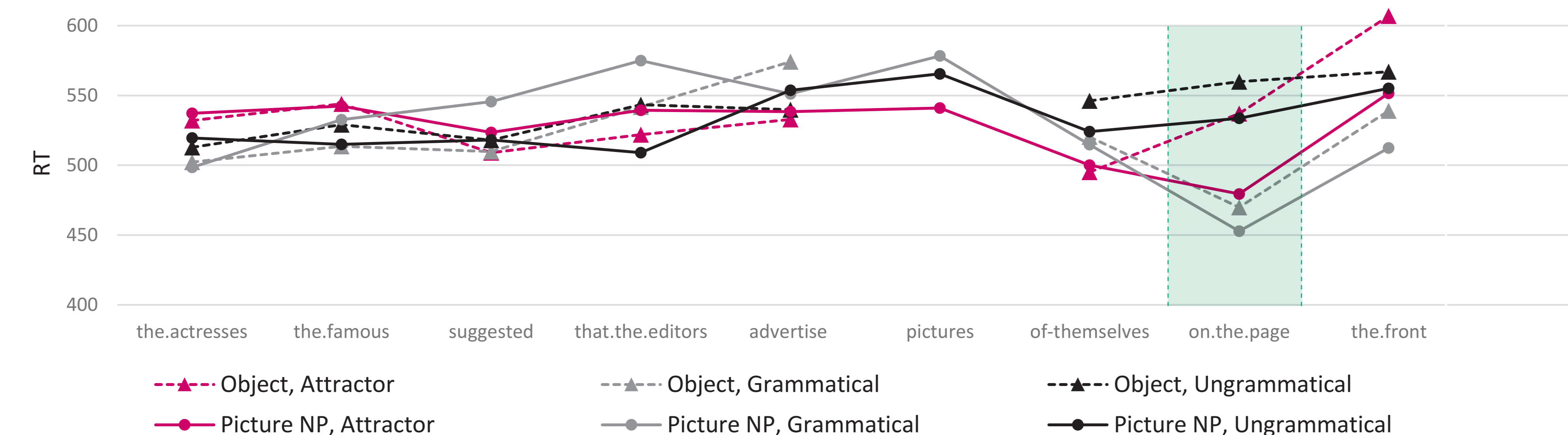
- Log RTs were analyzed with linear mixed-effects regression.
- RTs (in the spillover region, Figure 1) for long distance anaphors in object position were not significantly different than in the ungrammatical condition ( $p = .81$ ), and were significantly higher than grammatical reflexives ( $p < .001$ ).
- However, once the reflexive was embedded under an NP, attraction effects emerged (at the spillover): RTs in the non-local antecedent condition were in between the grammatical and ungrammatical version ( $p = .02, .048$ , correspondingly).
- A corresponding analysis of the reflexive pronoun region revealed no significant pairwise contrasts (all  $p$ 's  $> .2$ , Figure 2).
- The analysis of the spillover region also revealed an interaction of experimental trial and grammaticality ( $p < .001$ ).
- We observed a facilitation in the processing of reflexives with distant antecedents (in both object and picture NP positions, Figure 3), which aligns with adaptation to ungrammatical conditions, and contrasts with grammatical ones.
- This suggests that, even in picture NPs, non-local antecedents are rare and marked.



(1) Reading times (ms) by condition at the spill-over region  
error bars represent SE \* represents  $p < .05$ , \*\*\* represents  $p < .001$



(3) Adaptation to experimental items by condition



(2) Word-by-word reading times (ms) of experimental items by condition

## Discussion

- A logophoric antecedent is not available for Hebrew speakers as it is for English speakers.
- While English speakers “recruit” the point-of-view holder as an antecedent in the lack of a syntactically available one, Hebrew speakers do not use this strategy.
- This provides initial empirical support for the intuition that Hebrew speakers vary from English speakers in the processing of long-distance reflexives.
- Moreover, this supports the hypothesis that so-called “agreement attraction” effects on reflexives do not originate from misretrievals of a grammatically irrelevant distractor.
- In contrast to subject-verb agreement dependencies, retrieval triggered by the reflexive seems to be robustly governed by linguistic licensing (syntactic or discursive) of the antecedent.
- The emergence of attraction effects with picture-noun reflexives can either:
  - indicate that Hebrew logophors are possible (but more restricted in terms of environment); or
  - reflect a different use of reflexives in nouns.
- We consider another pragmatic function: creating a contrast against the set of possible alternatives (similar to intensive reflexives, e.g. English *own* and French *propre*, Cantrall 1973, Charnavel 2015).