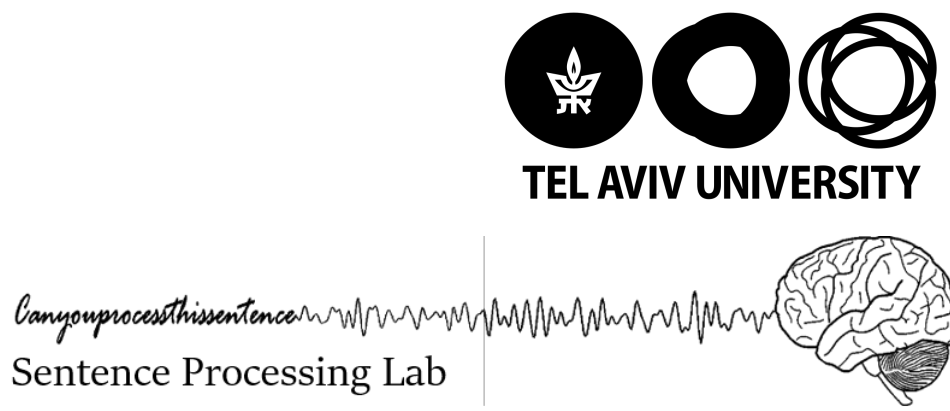


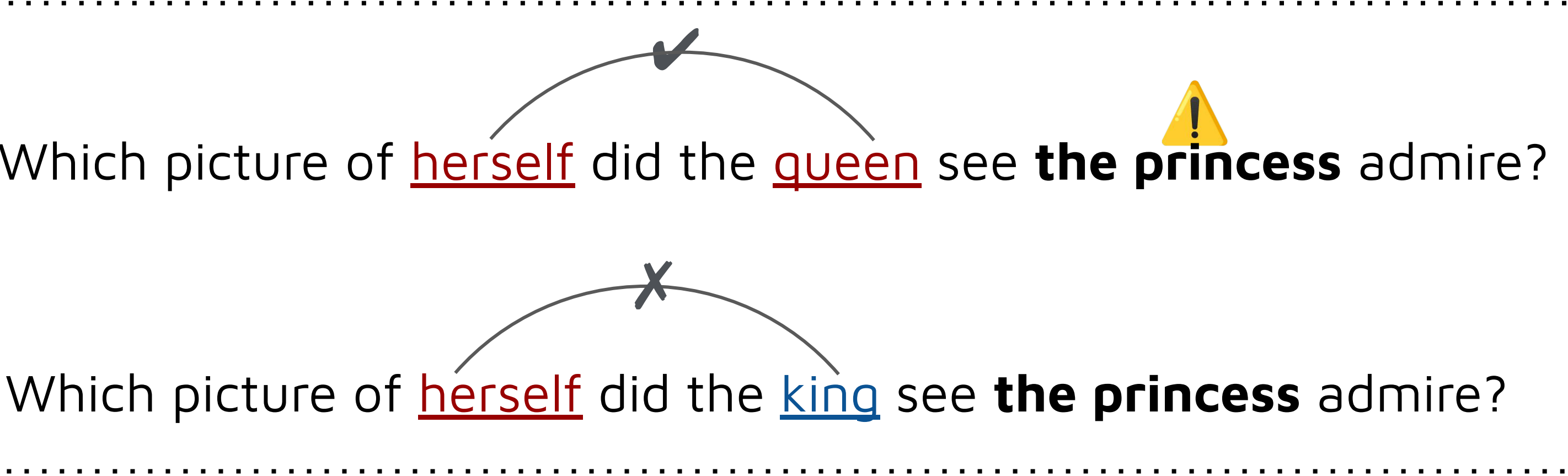
# Competing structural pressures ♦ Active antecedent search modulates gap prediction in Hebrew

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## Introduction

We explore an interplay between filler-gap and cataphoric reflexive-antecedent dependencies.



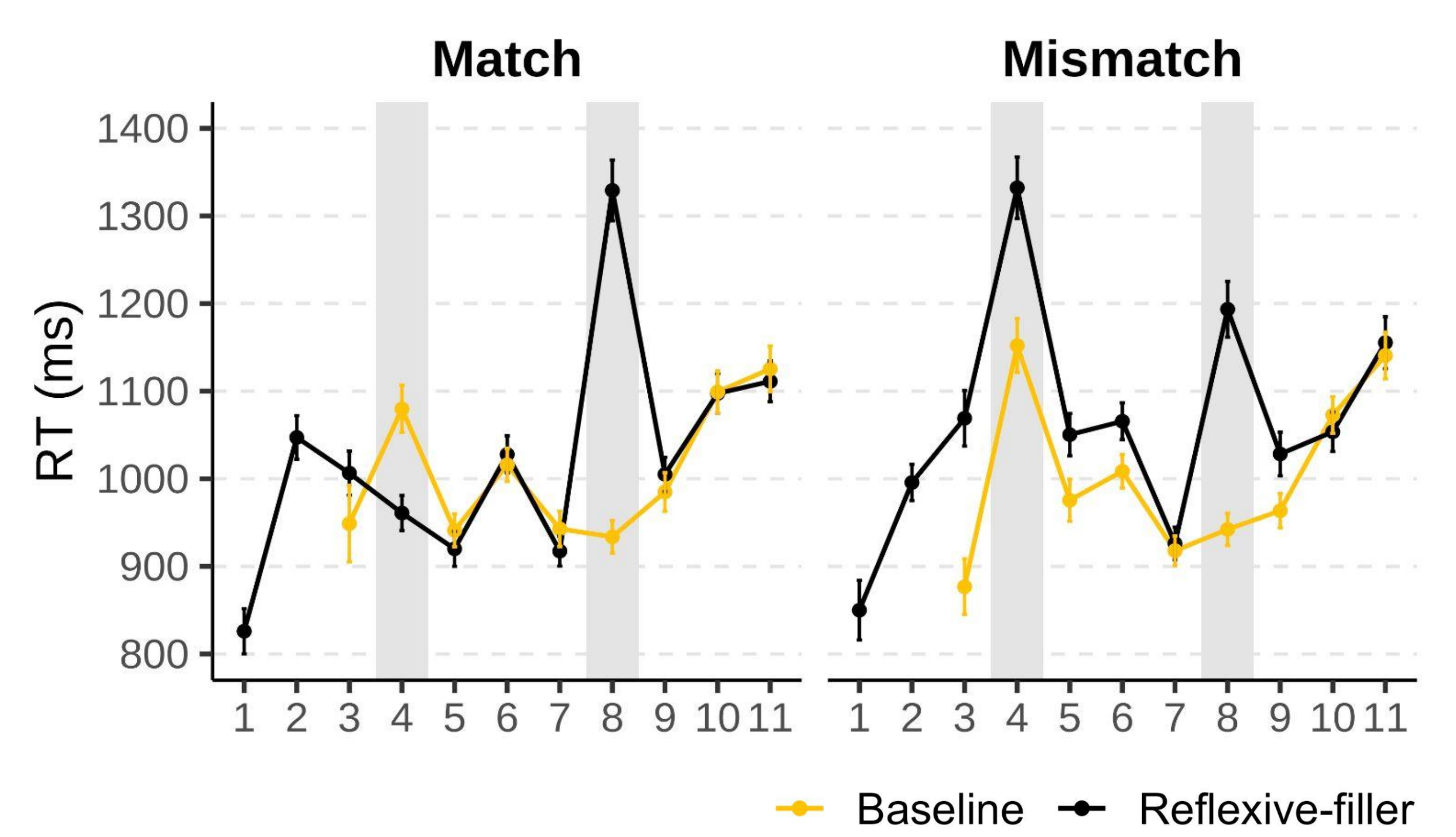
By embedding a **reflexive pronoun within a fronted wh-filler** and manipulating the **gender** of the highest subject, we examine whether

- ⌋ The parser initiates an **active search for an antecedent** upon encountering the reflexive ♦ *mismatch effect* [1-3]
- ⌋ The absence of a grammatical antecedent for the reflexive **disrupts usual gap prediction** ♦ *filled-gap effect* [4]

**Method** G-Maze (60 subjects) & SPR (60 subjects) experiments in Hebrew, 2X2 (24 sets):

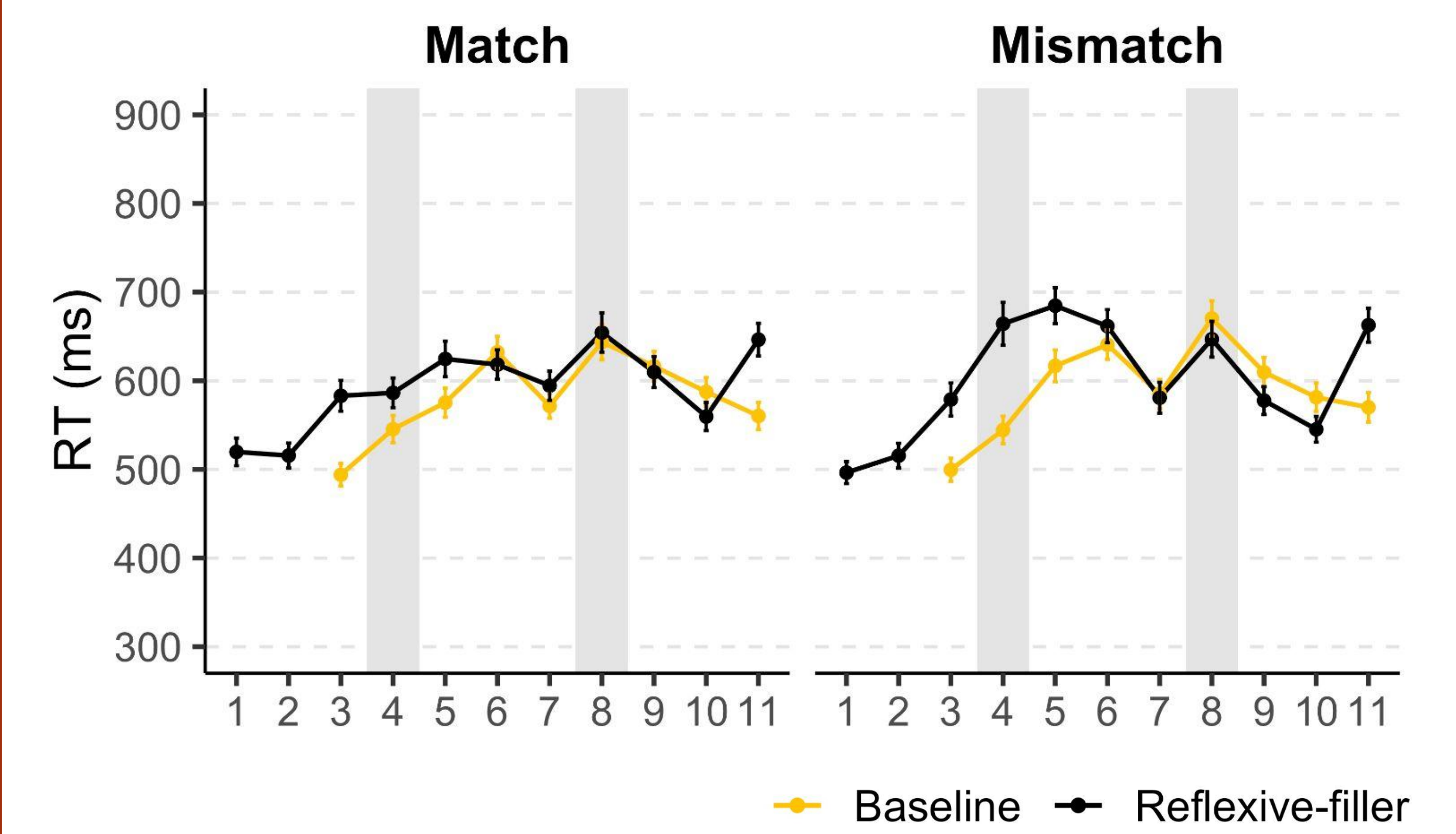
reflexive filler	match	Which video of <i>herself</i> the- <b>detective.F</b> the-young.F from-America filmed.F ACC the- <u>suspect.F</u> the-arrogant delete secretly?
	mismatch	Which video of <i>herself</i> the- <b>detective.M</b> the-young.M from-America filmed.M ACC the- <u>suspect.F</u> the-arrogant delete secretly? Which video of herself did the young detective(M/F) from America film the arrogant suspect(F) delete secretly?
baseline	match	When the- <b>detective.F</b> the-young.F from-america filmed.F ACC the- <u>suspect.F</u> the-arrogant delete video of <i>herself</i> secretly?
	mismatch	When the- <b>detective.M</b> the-young.M from-america filmed.M ACC the- <u>suspect.F</u> the-arrogant delete video of <i>herself</i> secretly? When did the young detective(M/F) from America film the arrogant suspect(F) delete a video of herself secretly?

## G-Maze results



Subject (4): Significant **Structure X Gender** interaction:  $p < .001$ .  
Filled-gap (8): **Main effect of Structure (FGE)**:  $p < .001$ , and significant **Structure X Gender** interaction:  $p = .01$ .

## SPR results



Subject (4): Structure X Gender:  $p = .05$ . In the **mismatch condition**, RTs were significantly longer in the reflexive vs. baseline ( $p < .001$ ), but not in the match condition ( $p = .07$ ).  
Filled-gap (8): **No effects**

## Discussion

### Active antecedent search

~ The observed slowdown at a subject mismatching the reflexive replicates [1-3]: Readers initiate an **active search for the cataphoric reflexive's antecedent**, slowing down when a potential antecedent is not suitable.

### Modulated FGE

- ~ The G-Maze revealed a **significant FGE, reduced in the absence of a grammatical antecedent for the reflexive**.
- ~ Readers are sensitive to the requirements of the reflexive-filler insofar as modulating their prediction for a gap.
- ~ However, the *mismatch* condition still displays a significant FGE. It's unclear why gap prediction persists where it would be ungrammatical. We suggest this reflects readers' inability to construct new predictions following the difficulty at the subject, perhaps opting to believe they had encountered a mistake.

### SPR vs. G-Maze

While the SPR data failed to produce a FGE, the G-Maze, novelly implemented in Hebrew, revealed highly localized and large predicted effects [5].

[1] Omaki et al. 2019, JML; [2] Kazanina et al. 2007, JML; [3] Giskes & Kush 2021, Mem Cognit.; [4] Stowe 1986, Lang Cogn Process; [5] Boyce et al. 2020, JML.