

A perceptual problem, not a knowledge deficit

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Background

Problem

English **third-person-singular (3SG) -s** among the hardest functional morphemes for L2 learners (e.g., Lardiere, 1998)

Potential Causes

- **Representational** deficits (Jiang, 2004; Li & Yang, 2022)
- Problems with **input processing** (Slabakova, 2019)

Sentence Position Principle (Barcroft & VanPatten, 1997)

- Morpheme position affects perceptual salience
- **Sentence-medial** harder than **sentence-final**

Previous Findings on Sentence Position Effects

- Sentence-medial -s indeed harder for L1-English children than sentence-final -s (Sundara et al., 2011)
- No empirical studies testing L2 learners

Research Questions

1. Is L2 learners' persistent difficulty with 3SG -s a perceptual problem?
2. Does sentence position contribute to the difficulty?

Method

Participants

1. Adult L1-English controls (**L1 group**)
2. Adult L1-Korean L2-English learners (**L2 group**)
Korean lacks word-final [s, z] and subject-verb agreement for number

Participant Information

Group	n	Age		Cloze		AOA	
		Mean	SD	Mean	SD	Mean	SD
L1	24	22.2	2.6	38.9	5.9	—	—
L2	23	24.8	4.5	31.7	9.3	6.9	1.6

Note. Cloze test (max = 50; Brown, 1980) for English proficiency

Main tasks

1. **Visual-world eye-tracking task**
 - Real-time perception of 3SG -s
2. **Fill-in-the-blank task**
 - Offline knowledge of 3SG -s

Design for both tasks

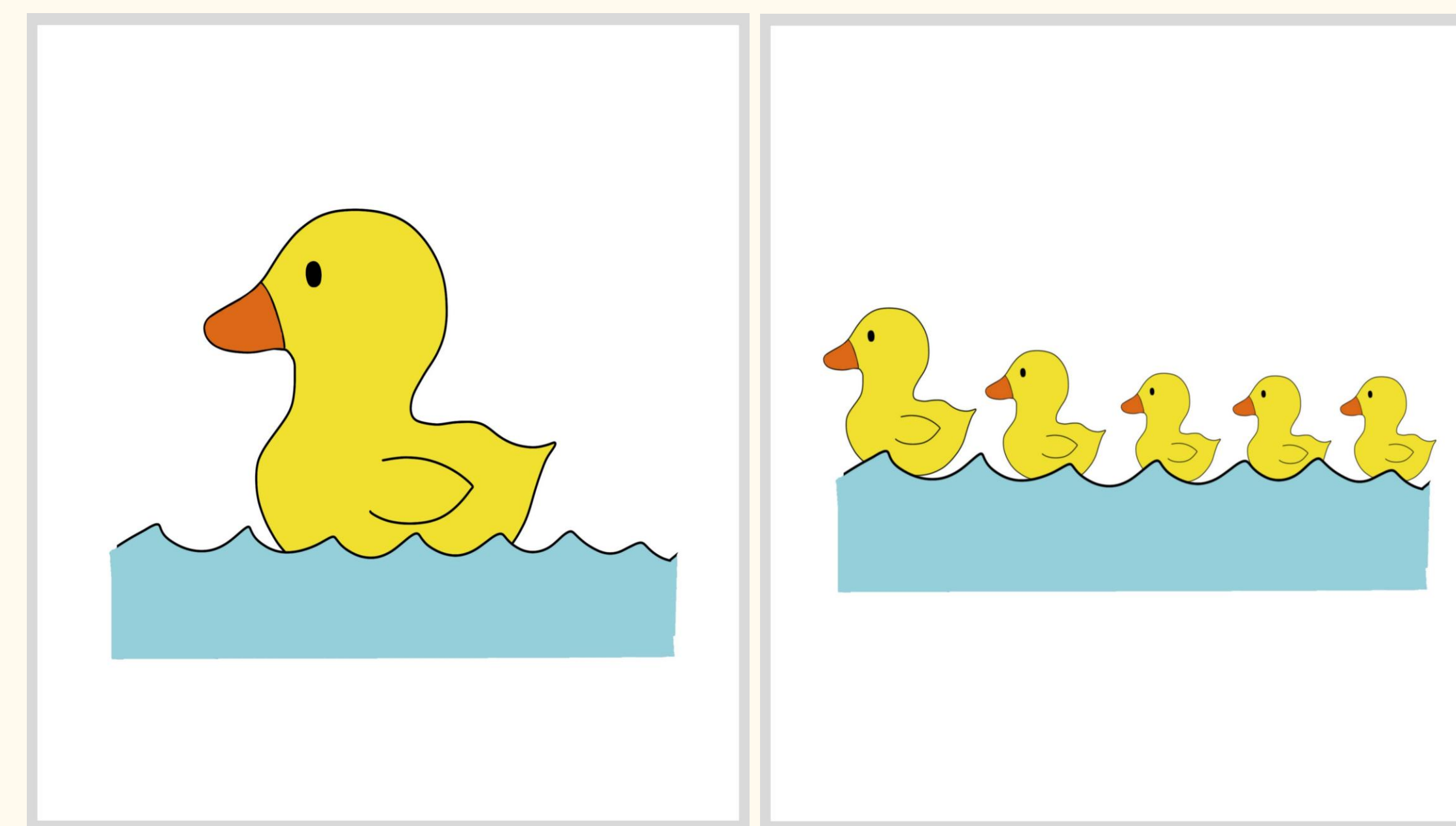
- 2 × 2 factorial design crossing:
 - **POSITION** (sentence-medial vs. sentence-final)
 - **NUMBER** (singular subject vs. plural subject)
- 16 critical items (4 conditions × 4 tokens); 44 fillers

Critical conditions for both tasks

Position	Number	Example Stimulus
Medial	Singular	The duck swims in the water.
Final	Singular	In the water, the duck swims.
Medial	Plural	The ducks swim in the water.
Final	Plural	In the water, the ducks swim.

Note. Plural marking on subject masked by initial sibilant on verb (see also Johnson et al., 2005); like in Sundara et al.'s (2011) stimuli, 3SG -s longer in duration in final position (mean = 238 ms) than in medial position (mean = 142 ms).

Eye-Tracking Trial



Note. Participants listen and click on corresponding picture

Fill-in-the-Blank Trial

The duck _____ in the water.

1. like 2. likes 3. swim 4. swims

If difficulty with 3SG -s is perceptual...

- **Eye-tracking:** L2 group slower and less accurate than L1 group

- **Fill-in-the-blank:** Both groups at ceiling

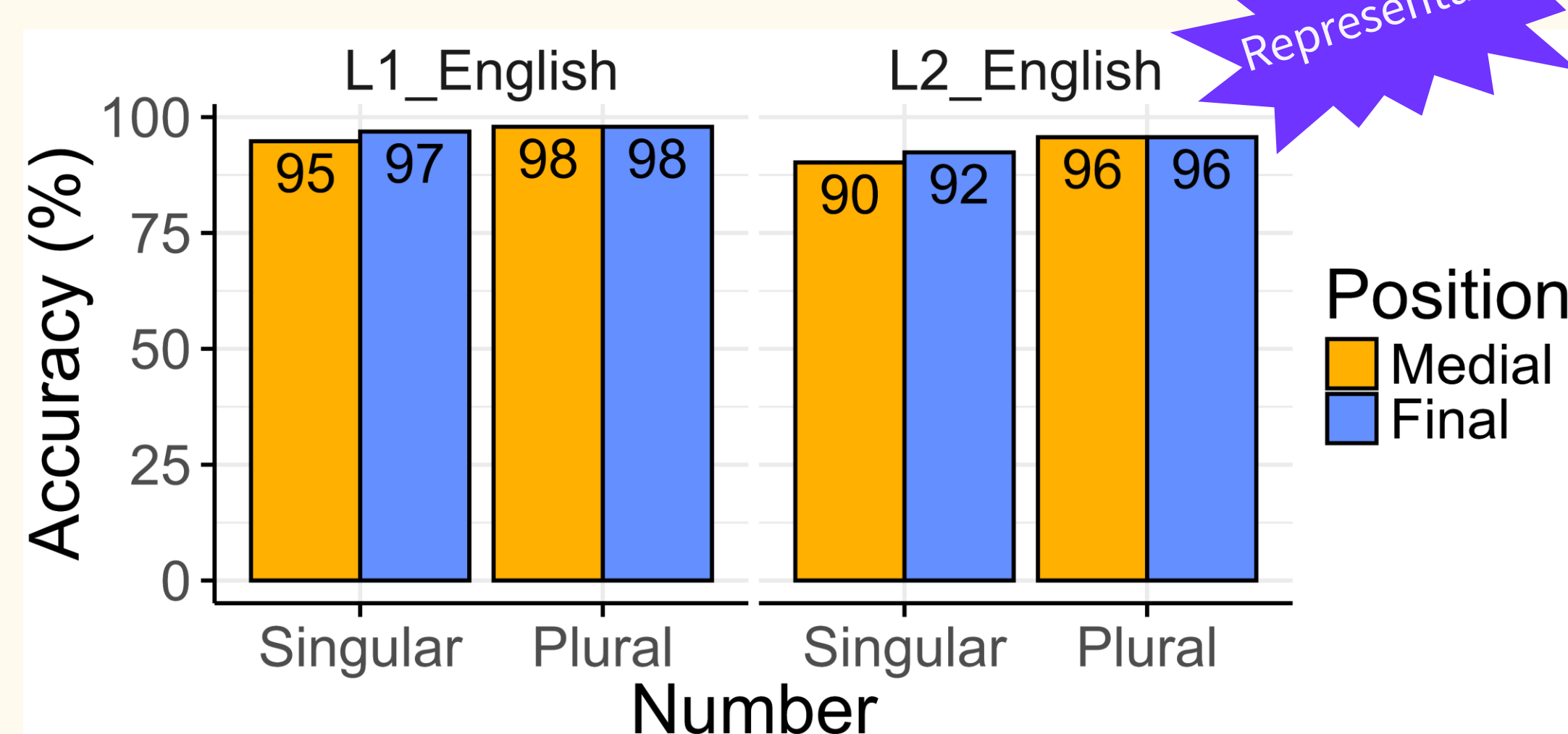
If sentence position contributes to difficulty...

- **Eye-tracking:** L2 group faster and more accurate in final position than medial position

- **Fill-in-the-blank:** L2 group more accurate in final position than medial position

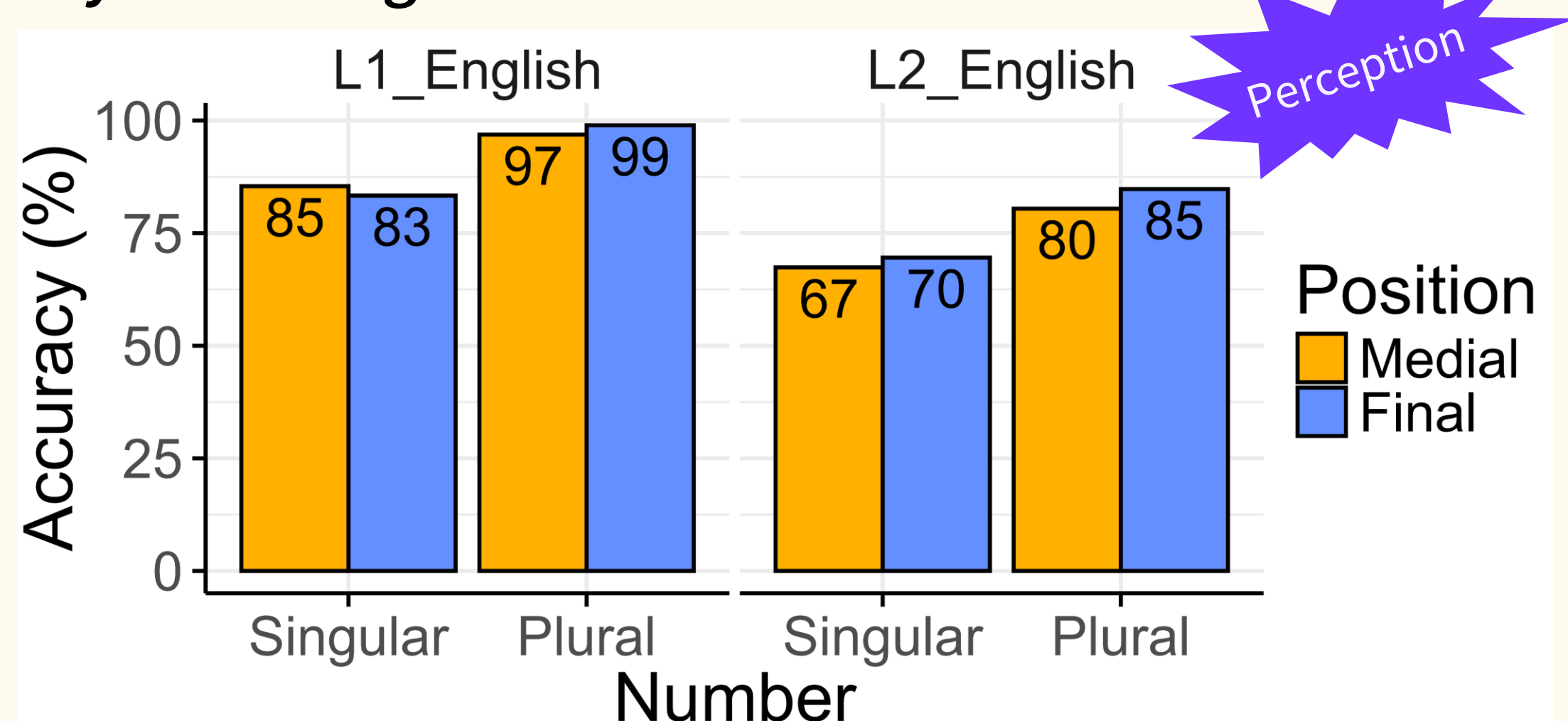
Results

Figure 1. Mean response accuracy in the fill-in-the-blank task



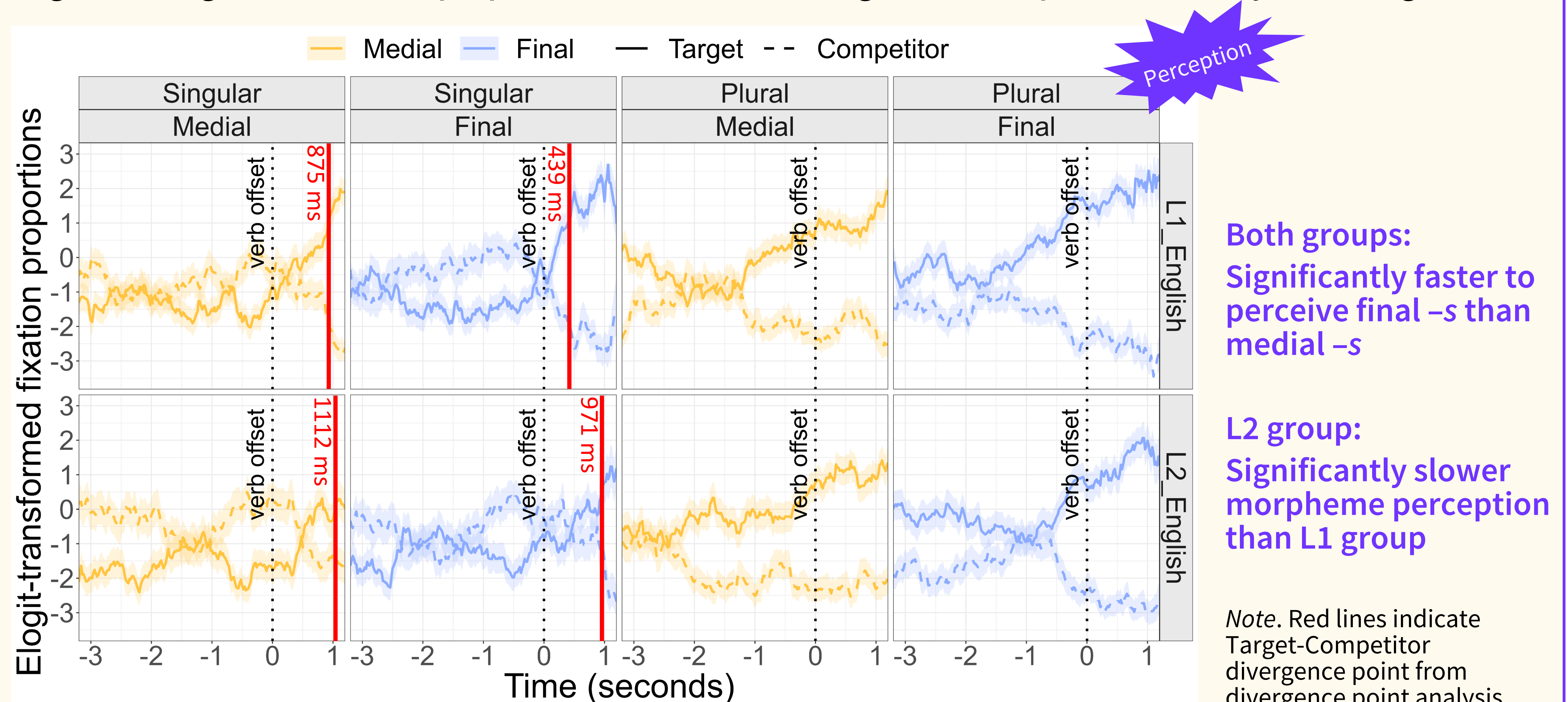
Both groups: Near ceiling across positions

Figure 2. Mean picture-selection accuracy in the eye-tracking task



L2 group: Significantly less accurate than L1 group

Figure 3. Elogit-transformed proportion of fixations to Target and Competitor in the eye-tracking task



Conclusions

RQ1: Is L2 learners' persistent difficulty with 3SG -s primarily a perceptual problem? → **Yes!**

- ✓ **Eye-tracking:** L2 group slower than L1 group
- ✓ **Picture-selection accuracy:** L2 group less accurate than L1 group
- ✓ **Fill-in-the-blank accuracy:** Both groups near ceiling

RQ2: Do L2 learners have more trouble with medial -s than final -s? → **Maybe**

- ✓ **Eye-tracking:** Faster in final than medial position
- ⚠ **Picture-selection accuracy:** Only numerically more accurate in final than medial position
- ⚠ **Fill-in-the-blank accuracy:** Virtually identical performance across positions (ceiling effect)

Salience of sentence-final -s may be due to position and/or duration

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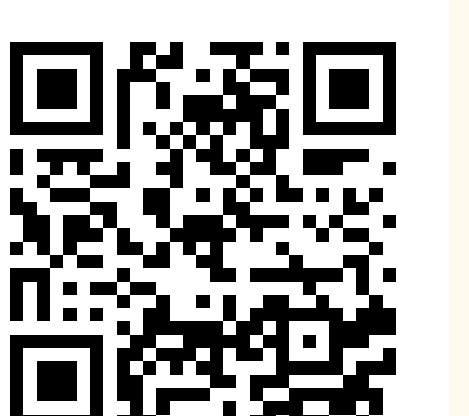
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