The Role of Emotional Valence of Head-NP in the Korean Relative Clause Attachment

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Introduction

- **Introduction**

  📖 Someone shot **the servant** of **the actress** who was on the balcony.
  - Who was on the balcony?
    - servant | actress

  📖 Someone saw **the explosion** of **the car** which was unexpected.
  - What was unexpected?
    - explosion | car

  📖 Someone heard **the sound** of **the gun** which was unexpected.
  - What was unexpected?
    - sound | gun

- **Background**

  – **RC Attachment Ambiguity:** Korean shows a preference for High Attachment (HA), whereas English favors Low Attachment (LA).

  – **Conflicting Findings across Tasks:** Attachment preferences vary across online and offline tasks. [1-3]

  – **The Role of Emotional Valence:** Emotional valence influences relative clause attachment. [4]

Procedure

- **Research Questions**

  – What is the primary RC attachment preference in Korean?

  – Does it differ between online and offline tasks?

  – Does the emotional valence of the head noun (positive, negative, neutral) influence RC attachment preferences in Korean?

- **Procedure**

  – **Online task:** A self-paced reading (SPR) with non-cumulative, moving-window presentation in PsychoPy.

  – **Offline task:** An attachment judgment task (NP1 vs. NP2), with response option order counterbalanced.

  – **Emotional valence:** Selected using ANEW and validated via a SAM questionnaire.
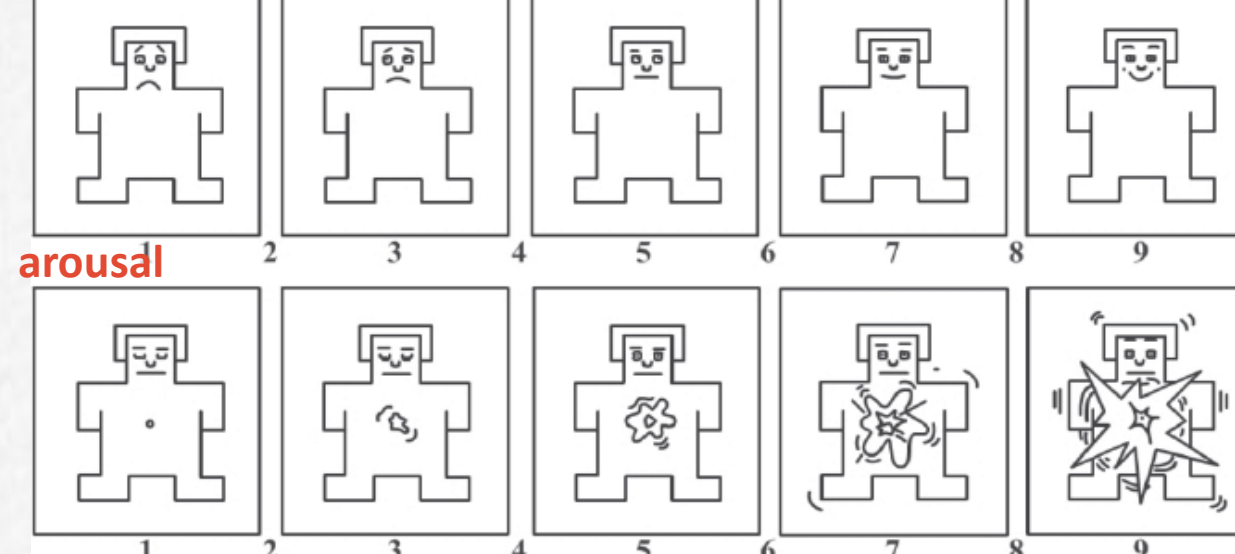
  📝 **Try it yourself!**
  - dish
  - metal
  - trophy
  - defect
  - party
  - gun
  - auditorium
  - clock

  valence

  arousal

Experiment 1

- **Experimental Materials**

  – Sentence structure: KOR → Subject$_{main}$ + [[Subject$_{rel}$ + Verb$_{rel}$] + **NP1** $_{-possesive\ marker}$ + **NP2** $_{-accusative\ marker}$]$_{object\ RC}$ + verb$_{main}$

  – 21 Korean speakers (7 males, mean age = 22.9) who had lived abroad for less than six months.

  – Condition 1: 60 sentences—ambiguous (Neutral–Neutral) and disambiguated items biased toward HA or LA.

	word1	word2	word3	word4 (NP1)	word5 (NP2)	word6
Ambiguity RC	나는	주희가	설명한	**기계**의	**부품**을	찾았다.
	I-top.	Juhee -nom.	explain-rel.	**machine**-poss.	**part**-acc.	find-past-decl.
	'I found the **part** of the **machine** that Juhee explained'					
Low Attachment Bias	나는	윤지가	개업한	**식당**의	**직원**을	칭찬했다.
	I-top.	Yoonji-nom.	open-rel.	**restaurant**-poss.	**employee**-acc.	praise-past-decl.
	'I praised the **employee** of the **restaurant** that Yoonji opened'					
high Attachment Bias	나는	지윤이가	주문한	**요리사**의	**음식**을	음미했다.
	I-top.	Jiyeon-nom	order-rel.	**chef**-poss.	**food**-acc.	restore-past-decl.
	'I savored the **food** of the **chef** that Jiyeon ordered'					

  – By semantically constraining the RC to a specific NP (NP1 vs. NP2), baseline reading time patterns of attachment were examined.
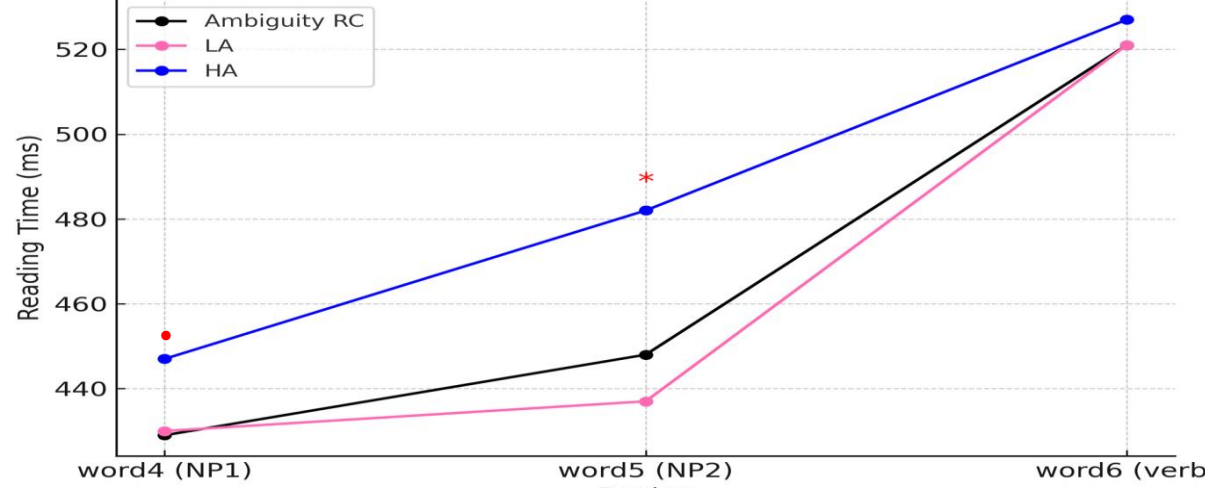
  ➤ **Offline Attachment Task**

  – In ambiguous RC sentences, participants showed a 53% preference for NP2 attachment (HA) vs. 47% for NP1(LA).

  ➤ **Online Task (Self-Paced Reading, SPR)**

  – Unlike the offline task, online processing favored LA.

  – At word5, HA showed longer reading times than the ambiguous RC, indicating integration failure and reanalysis to HA.

  <Experiment 1 Reading Times by Region>

Condition	word4 (NP1)	word5 (NP2)	word6 (verb)
Ambiguity RC	429	448	521
LA	430	437	521
HA	447.	**482***	527

Experiment 2

- **Experimental Materials**

  – Condition 2: 100 ambiguous sentences—varying in valence (neutral, positive, negative) and position (NP1, NP2)

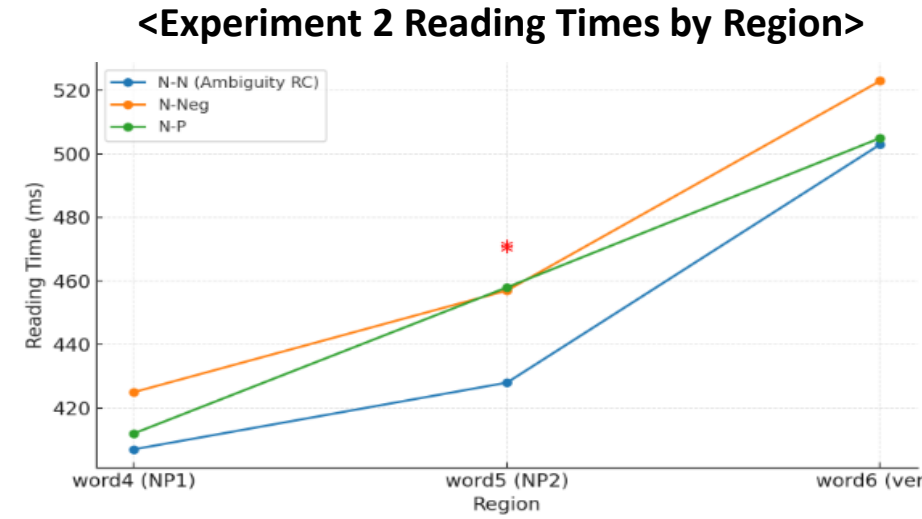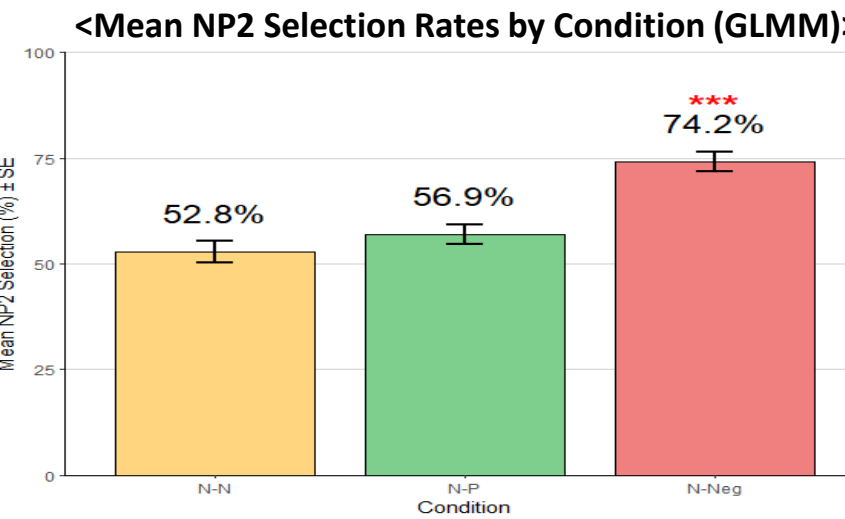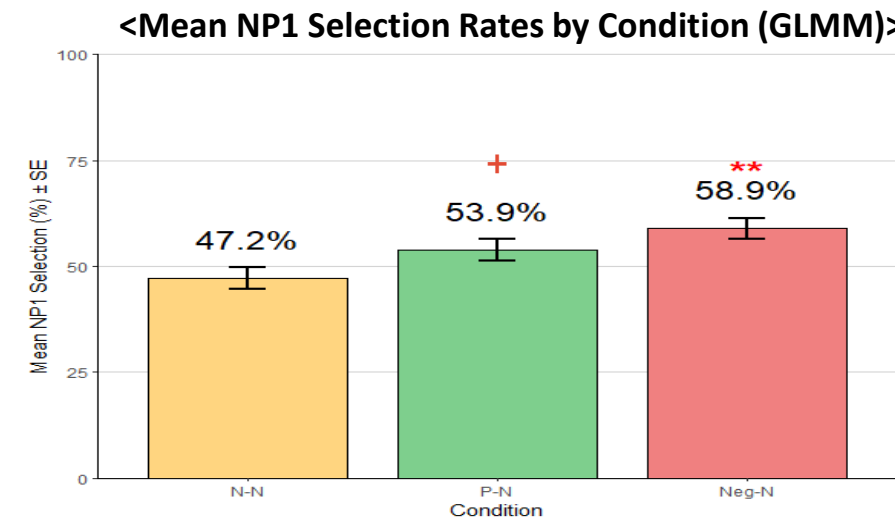| valance	word1	word2	word3	word4 (NP1)	word5 (NP2)	word6
🙂 – 😐	나는	지훈이가	준비한	**파티**의	**접시**를	닦았다.
	I-top.	Jihoon-nom.	prepare-rel.	**party**-poss.	**dishes**-acc.	clean-past-decl.
	'I cleaned the **dishes** of the **party** that Jihoon prepared'					
😡 – 😐	나는	태연이가	바라본	**총**의	**금속**을	만졌다.
	I-top.	Taeyeon-nom.	look at-rel.	**gun**-poss.	**metal**-acc.	touch-past-decl.
	'I touched the **metal** of the **gun** that Taeyeon looked at'					
😐 – 🙂	나는	인서가	관리한	**강당**의	**트로피**를	정리했다.
	I-top.	Inseo-nom.	manage-rel.	**auditorium**-poss.	**trophies**-acc.	organize-past-decl.
	'I organized the **trophies** of the **auditorium** that Inseo managed'					
😐 – 😡	나는	시윤이가	확인한	**시계**의	**결함**을	수리했다.
	I-top.	Siyoon-nom.	check-rel.	**clock**-poss.	**defect**-acc.	repair-past-decl.
	'I repaired the **defect** of the **clock** that Siyoon checked'					

  ➤ **Offline attachment Task**

  – In ambiguous RC sentences, attachment shifted depending on valence position, with LA preferred when the emotional word was in NP1 and HA strongly preferred when it was in NP2, especially in the negative–NP2 condition (74%).

  ➤ **Online Task (Self-Paced Reading, SPR)**

  – At word 5, emotional words (positive or negative) caused delays compared to neutral words, similar to experiment 1.

  – This indicates that the presence of emotional words at NP2 delays immediate integration and triggers structural reanalysis toward HA.

  <Mean NP1 Selection Rates by Condition (GLMM)>

  <Mean NP2 Selection Rates by Condition (GLMM)>

  <Experiment 2 Reading Times by Region>

Conclusion & Discussion

- In Korean RC processing, initial parsing favors LA during online tasks, while HA preferences emerge only later through semantic re-integration, as reflected in offline judgments.

- RC attachment preferences were modulated by the emotional valence of the NP, with negative valence leading to the strongest preference.

- The parser interacts with emotional-semantic cues, revealing the dynamic relationship between syntax and emotion.

- Future research should use eye-tracking/ERP to clarify processing stages and extend to L2 learners to examine whether their attachment preferences are more strongly influenced by their L1 bias or emotional valence, and how these factors interact in RC processing.

Reference

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[4] Fraga, I., Piñeiro, A., Acuña-Fariña, J. C., Redondo, J., & García-Orza, J. (2012). Emotional nouns affect attachment decisions in sentence completion tasks. *The Quarterly Journal of Experimental Psychology, 65*(9), 1740–1759.

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