



## Introduction

### Syntactic Satiation:

- Some sentences that initially sound ungrammatical sound “increasingly acceptable” after repeated exposures [1]
- Open Questions:**
  - Which sentences can and can’t satiate?
  - What is underlying mechanism responsible for satiation?
  - How many exposures are sufficient to cause satiation?

### Syntactic Priming:

- Exposure to a syntactic structure facilitates later processing of that same structure [2]
- Factors typically associated with structural priming include: [3]
  - Proximity to Exposure:** distinguishes between
    - Short-term Priming: Rapid activation decay over time
    - Long-term Priming: Implicit learning of syntactic structure not subject to rapid decay
  - Lexical Repetition:** can provide additional priming ‘boost’

### Current Study:

- Prior work investigates ‘global’ satiation over entire study. We focus on ‘local’ satiation from one exposure to the next.

## 2. Research Question

What is the relationship between satiation and syntactic priming? In particular, can satiation be affected by the same factors that affect priming?

## 3. Experiment Design

### 2 Exposure Types (between-subjects):

- Lag1** (n=40): 1 Unrelated sentence between prime & target
- Lag5** (n=44): 5 Unrelated sentences between prime & target

### 2 Critical Sentence Types:

- CNPC Islands:** ‘Weak’ island; claimed to be associated with processing factors [4] (ex. 1)
- Subject Islands:** ‘Strong’ island; claimed not to be associated with processing [5] (ex. 2)

### 2 Repetition Types: Repeated Island (ex. a) vs Unrelated phrase (ex. c)

### 2 Trial Types: Prime Sentence (ex. a,c) vs Target Sentence (ex. b,d)

**Task:** Native English speakers rated sentences on 5-pt scale (1=completely unacceptable; 5 = completely acceptable)

- 12 prime-target pairs (6 CNPC, 6 Subj)
- 42-66 fillers depending on Lag1/Lag5 version of study

## 4. Hypothesis & Predictions

Satiation not linked to priming

Satiation is like short-term priming

Satiation is like long-term priming

Targets = primes in both Lag1 and Lag5

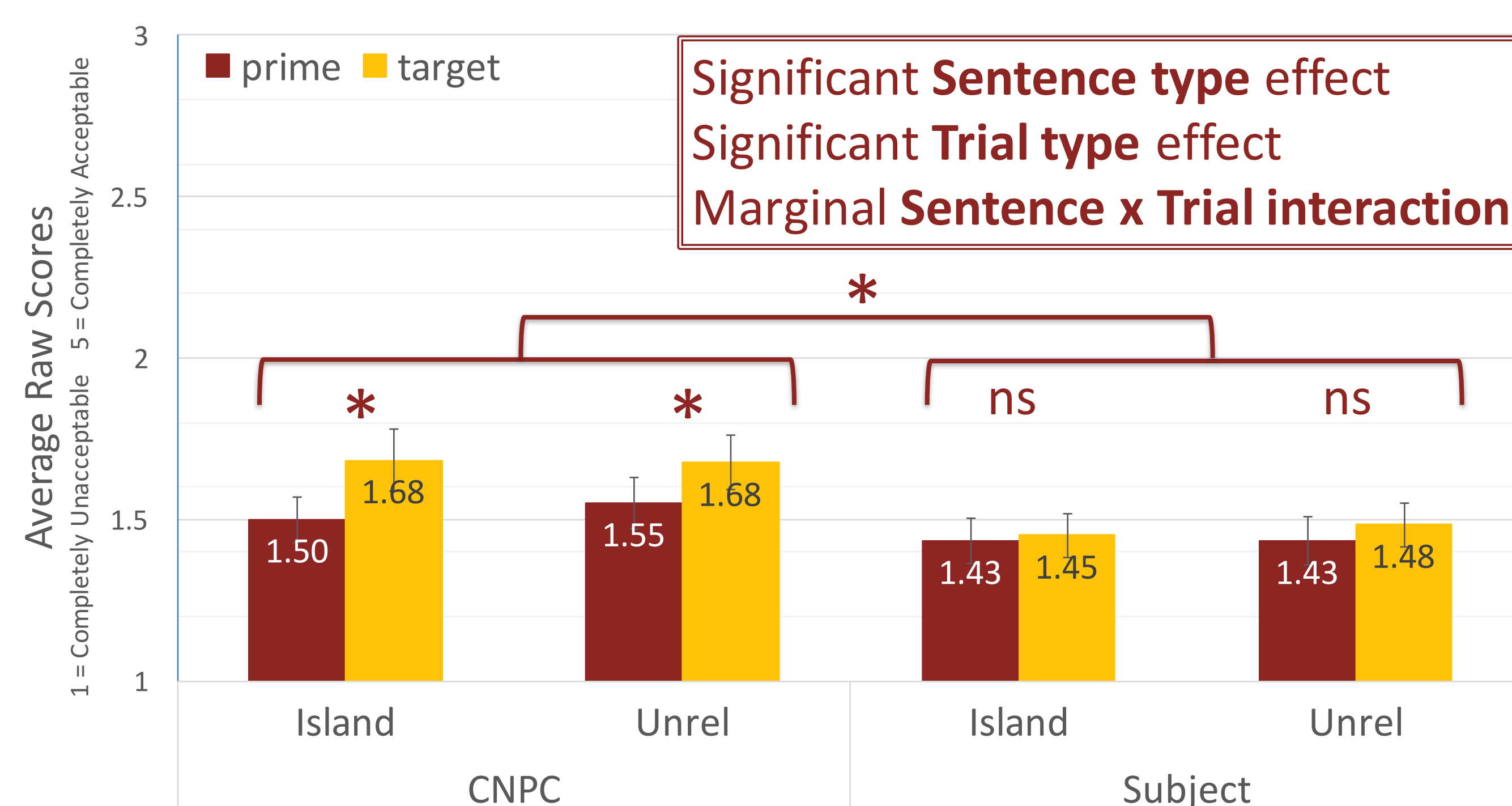
Targets > Primes in Lag1, but not Lag5

Targets > Primes in both Lag1 and Lag5

Island repetition may provide bigger rating improvement than Unrelated repetition

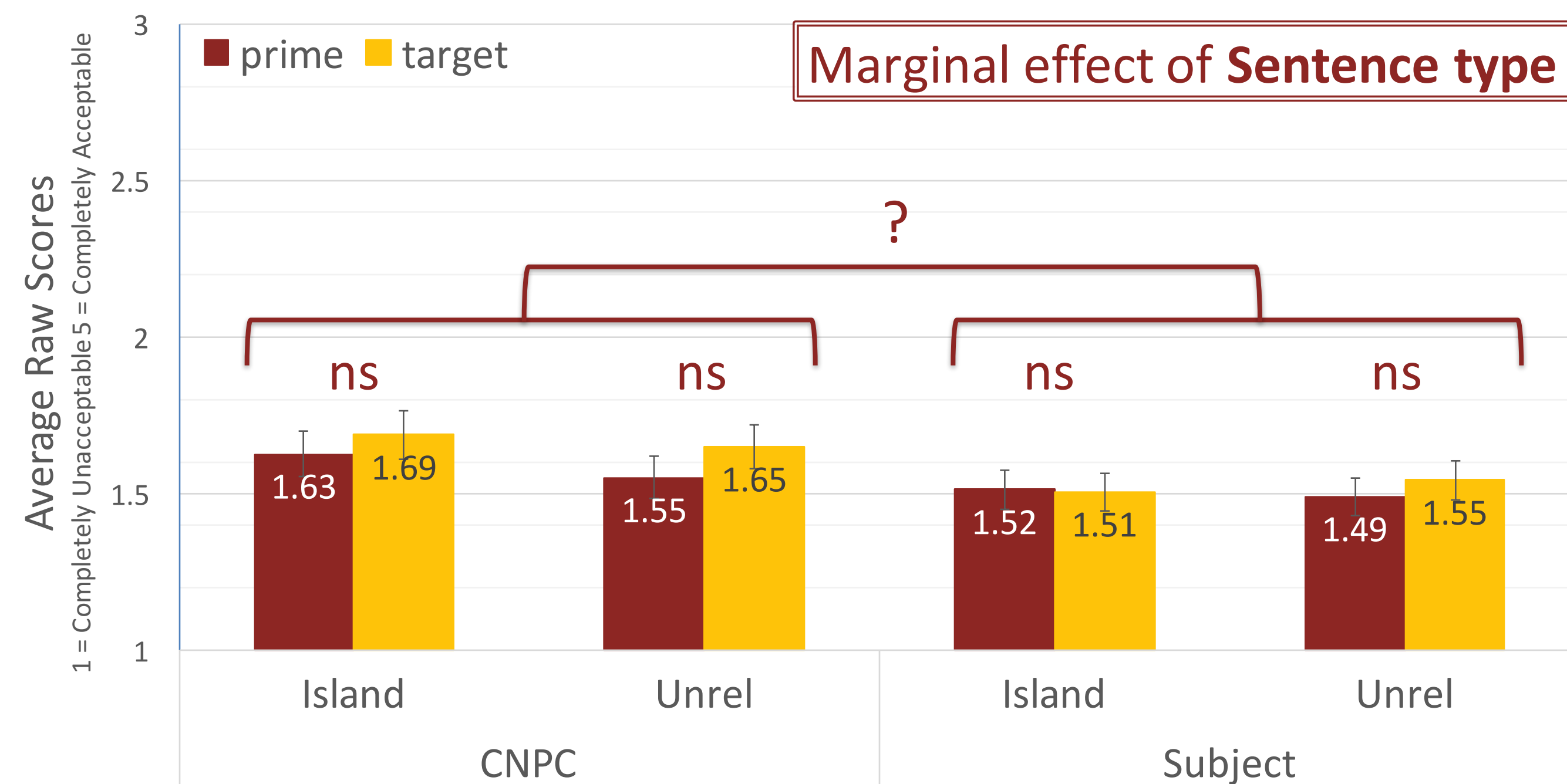
Sent	Rep	Trial	Example
CNPC	Island	Prime (1a)	Who did Richard dispute <u>the claim</u> that the paparazzi stalked?
		Target (1b)	Who did John deny <u>the claim</u> that the princess married?
	Unrel	Prime (1c)	Who did Richard <i>deny</i> the allegation that the paparazzi stalked?
		Target (1d)	Who did John <i>deny</i> the claim that the princess married?
Subj	Island	Prime (2a)	What did <u>opponents of</u> hang a giant banner at the capitol?
		Target (2b)	What did <u>opponents of</u> start a violent riot outside the mall?
	Unrel	Prime (2c)	What did fans of hang a giant banner <i>outside the mall</i> ?
		Target (2d)	What did opponents of start a violent riot <i>outside the mall</i> ?

## 5. Lag 1 Results



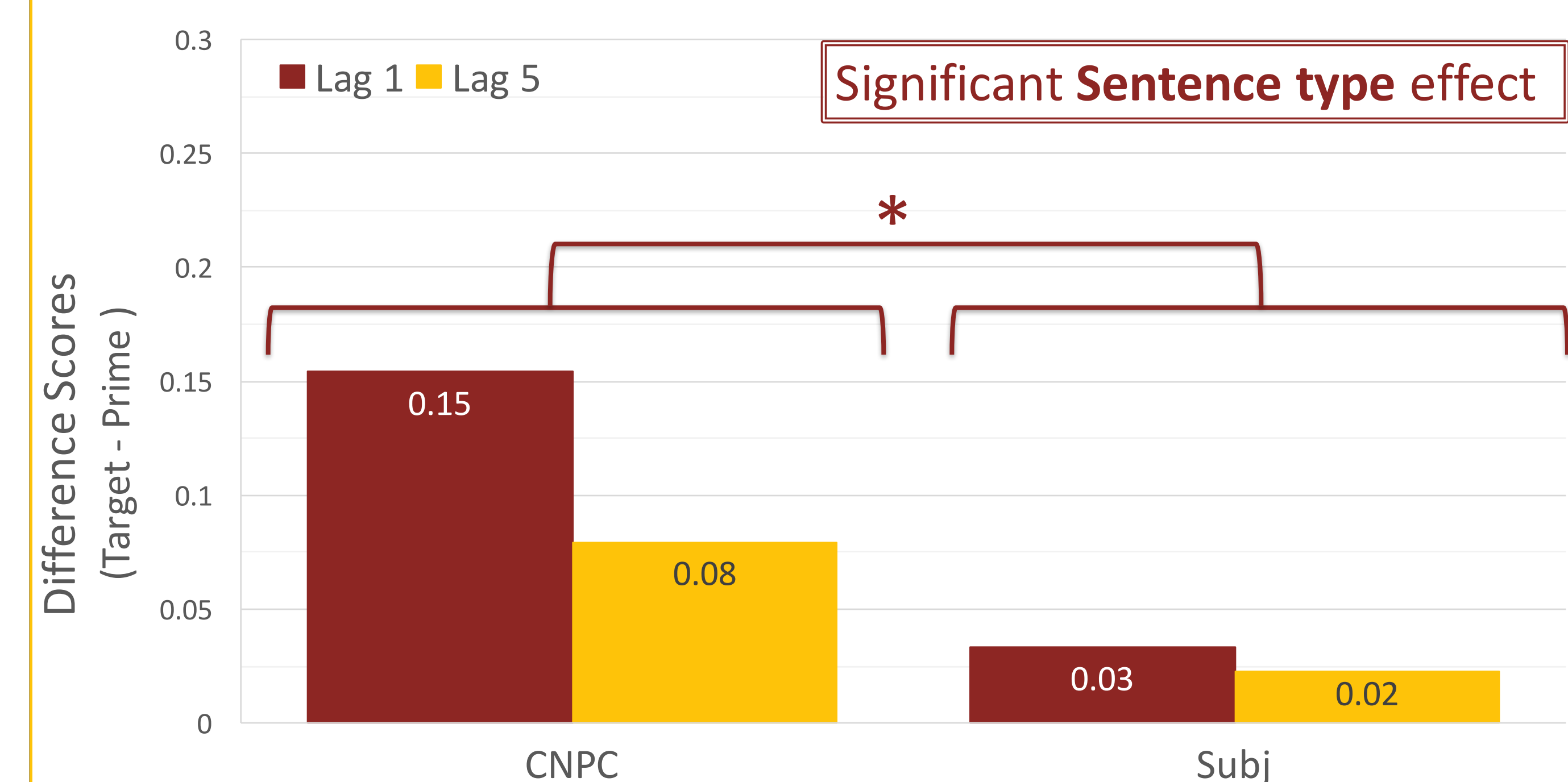
- CNPC Islands rated significantly better than Subject Islands ( $|t| = 2.82$ )
- Target rated significantly better than prime trials ( $|t| = 2.3$ )
- Significantly larger rating improvement for targets in CNPC Islands than in Subject Islands ( $|t| = 1.81$ )
- Repetition types did not differ from each other

## 6. Lag 5 Results



- CNPC Islands were rated marginally better than Subject Islands ( $|t| = 1.97$ )
- Targets and primes did not differ
- No difference in repetition types

## 7. Lag 1 vs Lag 5 Comparison



- Difference Scores:** Calculated by subtracting Target Score from Prime Score for each prime-target pair
- Differences sig. larger for CNPC than Subject Islands ( $|t| = 2.14$ )
- No differences in Lag type or Repetition type

## 8. Discussion & Conclusion

- Satiation is short-lived phenomenon akin to priming**
  - Priming possible when primes & targets very close (Lag1), but effects less clear when pairs were further apart (Lag5).
  - Suggests satiation involves lingering activation of structural representations that decays rapidly
- CNPC & Subject Islands are treated differently** in the minds of comprehenders
  - CNPC islands affected by priming manipulation & islands improved more regardless of prime-target proximity; Subject islands not affected at all.
  - Current work unclear on whether either of these islands can satiate. But, results lend further support to underlying difference between two island types (e.g. weak/strong island distinction)
- Proximity of prime & target predicts** if priming is possible, but **doesn't predict amount** of priming within prime-target pairs.

### Future Work

- Repetition Types:** Results here only show types of repetition don't differ, not if 'lexical boost' is present at all → Compare Island/Unrelated repetitions to a 'No-Repetition' baseline
- Subtler Facilitation Effects:** Ongoing self-paced reading study tries to tap into potential effects undetected by acceptability ratings
- Role of Learning in Satiation:** Can satiation be induced by explicit learning about the structure of the island?

## References

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- Bock 1986.** Syntactic Persistence in Language Production. *Cognitive Psychology*.
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- Sag et al 2007.** Processing Complexity in Subjacency Violations: The Complex Noun Phrase Constraint. Proceedings from the Annual Meeting of the Chicago Linguistic Society (cf. **Sprouse 2009.** Revisiting Satiation: Evidence for an Equalization Response Strategy. *Linguistic Inquiry*.)
- Chaves & Dery 2014.** Which Subject Islands Will the Acceptability of Improve with Repeated Exposure? Proceedings of the 31<sup>st</sup> West Coast Conference on Formal Linguistics (cf. **Jean Crawford 2012.** Using Syntactic Satiation to Investigate Subject Islands. Proceedings of the 29<sup>th</sup> West Coast Conference on Formal Linguistics)