Introducion

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]
  1. Proximity to Exposure: distinguishes between
     a) Short-term Priming: Rapid activation decay over time
     b) Long-term Priming: Implicit learning of syntactic structure not subject to rapid decay
  2. 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):
- Lag 1 (n=40): 1 Unrelated sentence between prime & target
- Lag 5 (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 Lag 1/Lag 5 version of study

4. Hypothesis & Predictions

Satisfaction not linked to priming
Satisfaction is like short-term priming
Satisfaction is like long-term priming

Targets = primes in both Lag 1 and Lag 5
Targets > Primes in both Lag 1 and Lag 5
Targets > Primes in both Lag 1 and Lag 5

Island repetition may provide bigger rating improvement than Unrelated repetition

Sent Rep Trial Example

<table>
<thead>
<tr>
<th>CNPC</th>
<th>Island</th>
<th>Prime (1a)</th>
<th>Who did Richard dispute the claim that the paparazzi stalked?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subj</td>
<td>Target</td>
<td>Target (1b)</td>
<td>Who did John deny the claim that the princess married?</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>CNPC</th>
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<th>Prime (1c)</th>
<th>Who did Richard deny the allegation that the paparazzi stalked?</th>
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</thead>
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<tr>
<td>Subj</td>
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<td>Target (1d)</td>
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<table>
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<tr>
<th>CNPC</th>
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<th>What did opponents of hang a giant banner at the capitol?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subj</td>
<td>Target</td>
<td>Target (2b)</td>
<td>What did opponents of start a violent riot outside the mall?</td>
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5. Lag 1 Results

Significant Sentence type effect
Marginal Trial type effect
Marginal Sentence x Trial interaction

- 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

Marginal effect of Sentence type

- 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 (Lag 1), but effects less clear when pairs were further apart (Lag 5)
- 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

1) 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
2) Subtler Facilitation Effects: Ongoing self-paced reading study tries to tap into potential effects undetected by acceptability ratings
3) Role of Learning in Satiation: Can satiation be induced by explicit learning about the structure of the island?

References