Introduction

Definite NPs are preferred to precede indefinite NPs. One particular case is the ditransitive construction. (1) is better than (2) (Bresnan et al., 2007):

(1) The woman sent the author a letter about how much she enjoyed his latest book.

(2) The woman sent an author the letter about how much she enjoyed his latest book.

Do these preferences affect comprehension? In particular:

- Do comprehenders implicitly learn the statistical distribution of definites?
- How fine-grained is such implicit statistical knowledge? Is it conditioned on syntactic context?

Approach

- Use corpus data to estimate the surprisal (in bits) associated with definites in their syntactic context.
- Investigate whether this predicts processing difficulty.

Corpus Study

- Annotated ditransitive corpus from Bresnan et al. (2007).
- Assess definiteness ordering preference for verbs we plan to use in reading experiment (give, loan, mail, send, offer, bring).

<table>
<thead>
<tr>
<th>Surprisal of Definiteness Order by Syntactic Structure</th>
<th>Preference for the definite-indefinite order in double object (DO) syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Object</td>
<td>Significant over and above other factors (animacy, discourse givenness, weight)</td>
</tr>
<tr>
<td>Prepositional Dative</td>
<td>Consistent across verbs</td>
</tr>
</tbody>
</table>

Word-by-word self-paced reading

2 phases:

- Exposure Phase: 24 critical sentences; all the same order within a participant
- Test Phase: 12 critical sentences; half in definite-indefinite order, half in indefinite-definite order within a participant

<table>
<thead>
<tr>
<th>Exposure Order</th>
<th>Test Order</th>
<th>Exposure Phase</th>
<th>Test Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definite-Indefinite</td>
<td>... the ... a ...</td>
<td>... the ... a ...</td>
<td>[x 6]</td>
</tr>
<tr>
<td>Indefinite-Definite</td>
<td>... a ... the ...</td>
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Results: Exposure Phase

- Reading time preference for definite-indefinite order across critical sentence regions.
- Consistent across verbs (not shown here).

Results: Test Phase

- Exposure to the unexpected order causes reduced RT preference for expected order.

Conclusion

- Production preference is reflected in comprehension.
- Preferences not just based on linear order, but sensitive to syntactic context.
- This preference is malleable (see also Fine et al., 2013).

References


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