Variation in prosodic planning among individuals and across languages
Benjamin Swets, Caterina Petrone, Susanne Fuchs, Jelena Krivokapić

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Variation in prosodic planning among individuals and across languages
Benjamin Swets (Grand Valley State University)
Caterina Petrone (Laboratoire Parole et Langage)
Susanne Fuchs (Zentrum fuer Allgemeine Sprachwissenschaft)
Jelena Krivokapic (University of Michigan & Haskins Laboratories)

BACKGROUND

• Previous research (Swets et al., 2007; Petrone et al., 2011) found associations between working memory (WM) and the amount of prosodic material readers and speakers package together for comprehension and production.
  –Larger WM capacity seems to lead to larger prosodic packages during speech planning: Petrone et al. (2011) showed that the scope of incremental prosodic planning increased along with WM.
  –However, Petrone et al. did not distinguish WM effects from processing speed, and had participants read prepared utterances rather than plan their own speech.
  –Although previous studies have found associations between WM and planning scope in language production (Swets et al., 2014, Petrone et al., 2011) in different languages, no studies have assessed such effects cross-linguistically in the same study.
• RESEARCH QUESTIONS: Is the size of prosodic increments during language production, as measured by the occurrence of pauses, associated with individual differences in WM and speed of processing?

METHOD

French (n = 32), German (n = 31) and English (n = 30) speakers described 3-object arrays with similar-looking (contrast) or different (control) objects in Positions 1 and 3.

RESULTS

Mean speech onset time varied across languages, but did not vary as a function of WM or processing speed (SE in parentheses):

<table>
<thead>
<tr>
<th>Language</th>
<th>Contrast</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td>2.15 (.26)</td>
<td>1.45 (.09)</td>
</tr>
<tr>
<td>German</td>
<td>3.36 (.27)</td>
<td>1.82 (.09)</td>
</tr>
<tr>
<td>English</td>
<td>2.97 (.27)</td>
<td>1.80 (.09)</td>
</tr>
</tbody>
</table>

Although speed of prosodic planning decreased with contrast sentence pauses in French, this pattern did not hold in German or English:

CONCLUSIONS

• Individual differences in WM lead to differences in planning processes, such that higher WM supports the planning of larger prosodic “chunks”.
• Processing speed may be more useful in more “incremental” languages in which speakers begin speech more quickly and create smaller prosodic chunks, e.g. French.

REFERENCES