Social effects on code-switching: An ERP study

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Research on event-related brain potentials (ERPs) of bilinguals processing sentences with code-switches found that code-switches elicit a negativity over left fronto-central sites, and a posterior and frontal positivity (e.g., Moreno et al., 2002). However most of this research ignores the fact that code-switching is a social phenomenon, and is only licensed in contexts where all conversation partners are bilingual.

The aim of the current study is to investigate whether a bilingual processes a code-switch differently in the presence of a monolingual than a bilingual. We test Spanish-English bilinguals in an ERP reading task in the presence of an English monolingual confederate in one half of the session, and in the presence of a test Spanish-English bilingual confederate in the other half (cf. Rueschemeyer, 2014 for a similar paradigm related to semantic processing rather than codeswitching). Participants read English and English-Spanish sentences (see Table 1) silently while their EEG is recorded. The order of the type of confederates is counterbalanced, and materials are Latin-Squared over the four conditions (Mono/bilingual confederate x Switch/No-switch).

Our critical comparison is between the ERPs starting from the onset of the code-switch and those to the comparable non-switch word in the English-only condition. We expect to find a larger switching effect for code-switches when the participant is in the presence of a monolingual than in front of a bilingual. Data collection is ongoing, but the data collected thus far suggest that processing code-switches in front of a monolingual elicits a larger posterior positivity than in front of a bilingual (Figure 1). This modulation of the positivity was absent in a control study presenting the same materials, but without confederates present. Should these results hold with more participants, this would suggest that comprehension of code-switches is sensitive to the language knowledge of others present.
References


Table 1. Examples of the experimental conditions. The critical word is underscored for purpose of illustration.

<table>
<thead>
<tr>
<th>Confederate</th>
<th>Type</th>
<th>Example sentence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monolingual/Bilingual</td>
<td>No Switch</td>
<td>The soccer player scored the winning goal in the last minute of the game.</td>
</tr>
<tr>
<td>Monolingual/Bilingual</td>
<td>Switch</td>
<td>The soccer player scored the winning goal en el último minuto del partido.</td>
</tr>
</tbody>
</table>

Figure 1: ERP results at the critical word for CPz for the control study (left) and study with confederates (right)