Measuring implicit morphosyntactic knowledge by means of visual world eye-tracking
Koch, Eva Marie; Housen, Alex; Godfroid, Aline

Publication date:
2018

Citation for published version (APA):
Measuring implicit morphosyntactic knowledge by means of visual world eye-tracking

Eva Koch¹, Aline Godfroid², Alex Housen¹
¹Vrije Universiteit Brussel, ²Michigan State University
eva.marie.koch@vub.be

Research question
Can native speakers (NS) and non-native speakers (NNS) of German use the morphosyntactic information encoded in the stem vowel of strong verbs to make predictions about upcoming input in real-time sentence processing?

The target
Stem-vowel alternations in German strong verbs

<table>
<thead>
<tr>
<th>Strong verbs: marked, older</th>
<th>Weak verbs: unmarked, regular</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF graben (to dig)</td>
<td>jagen (to hunt)</td>
</tr>
<tr>
<td>1SG ich grabe</td>
<td>ich jage</td>
</tr>
<tr>
<td>2SG du grabe</td>
<td>du jagst</td>
</tr>
<tr>
<td>3SG erlief/es grabe</td>
<td>erlief/es jagt</td>
</tr>
<tr>
<td>1PL ihr grabe</td>
<td>ihr jage</td>
</tr>
<tr>
<td>2PL ihr grabe</td>
<td>sie jagen</td>
</tr>
<tr>
<td>3PL sie grabe</td>
<td></td>
</tr>
</tbody>
</table>

The technique
Visual world eye-tracking to measure prediction
In L1 comprehension, we constantly integrate lexical, grammatical, pragmatic and contextual information to predict upcoming input.High. The visual world paradigm (VWP) is a framework to measure prediction. It builds on the eye-mind link: What we hear influences where we look. Prediction presupposes the presence of implicit (unconscious, automatic) knowledge. Thus, VWP could be used to measure implicit knowledge.

The design
Sentence-picture matching task (2 pictures, 1 auditory sentence)
Item types:
- 32 critical (strong verbs)
- 32 control (weak verbs)
- 32 fillers (weak verbs)

4 conditions:
- Number of agents (picture):
  - Number of referent (audio):
    - singular / plural
    - different / same

Faster looks to the target in different vs. same condition

Critical items
- Grab denn der Blaupinsel Loch? (dig)
- Steht denn der Blaupinsel vor dem Loch? (stand)

Control items
- Grab denn ihr Blaupinsel Loch? (dig)
- Steht denn ihr Blaupinsel vor dem Loch? (stand)

Procedure
Background questionnaire
Vocabulary size test
Familyization with action verbs
Main task (VWP eye-tracking)
Implicit knowledge test ➔ timed auditory GJT?
Awareness interview
Explicit knowledge test ➔ oral production?
Working memory test
Phonological memory test ?
Prior verb knowledge assessment

Implications
If we find prediction in both L1 and L2 speakers:
- Method is successful measure of implicit morphosyntactic knowledge
- Proof that L2 speakers can use morphosyntactic cues
If we find prediction in L1 group only:
- Confirms processing differences between L2 and L1 speakers
- No proof for absence of implicit knowledge! (triangulation results)
Future possibilities:
- Add instruction conditions ➔ can they influence the outcome?

References