We store vast amounts of knowledge within memory, including information about familiar events, states and facts (1,2,3), as well as their likely relationships (4,5,6,7).

How quickly can we draw upon this type of knowledge to predict upcoming events during word-by-word sentence comprehension? And what happens if we predict wrongly?

**Design**

<table>
<thead>
<tr>
<th>Condition Name</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event-related Coherent</td>
<td>Second event is causally related to the first.</td>
<td>Kristen had insecticide applied to her house because there were cockroaches in her kitchen.</td>
</tr>
<tr>
<td>Event related Incoherent</td>
<td>Reversible discourse. Events are temporally related to one another but the discourse connector, ‘because’, renders their causal relationship incoherent.</td>
<td>There were cockroaches in Kristen’s kitchen because she had insecticide applied to her house.</td>
</tr>
<tr>
<td>Lexically related Incoherent</td>
<td>Events are unrelated but the critical word is semantically related to lexical item(s) in the first clause.</td>
<td>Kristen had insecticide applied to her house because it was brown and metal throughout.</td>
</tr>
<tr>
<td>Unrelated Incoherent</td>
<td>Events are completely unrelated.</td>
<td>Kristen had insecticide applied to her house because she had a meal with her friends.</td>
</tr>
</tbody>
</table>

- 180 quadruplets of two-_clause sentences. Fully counterbalanced and randomized.
- 45 sentences/condition ERPs time-locked to critical words: (underlined in examples)
  - Never sentence-final.
  - 189 nouns, 266 verbs, 265 adjectives.
  - Matched on frequency, length, orthographic density.
  - Conditions 1-3: matched on semantic relatedness with ‘bag of words’ in context, using LSA.

**Results**

- N400: larger to critical words in Unrelated Incoherent than Event related Coherent sentences.
- N400 also larger to critical words in Lexically related Incoherent than Event related Coherent sentences, despite being matched on LSA.
- BUT some N400 attenuation to critical words in the Event related Incoherent sentences.

**Conclusions**

1. We use stored relationships between events, beyond simple lexical semantic relationships, to predict upcoming events during comprehension, even in non-lexically constraining contexts (see also ref 8).
2. Event predictions can influence semantic processing of incoming words, ahead of these words being fully integrated into their context.
3. Event predictions can also influence later stages of processing: if full integration of an incoming word into its context yields an event representation that disconfirms these predictions, and this error is detected, the parser commits to additional analysis or realanalysis of the input (9).

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