Learning adjective meaning through variable exemplars
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Introduction

- Common assumption: Word learning proceeds by making associations between lexical forms and visually presented referents.
- Logical problem: Visual referents are variable, not lending themselves on “absolute” meanings e.g., full = holding maximum quantity without spilling.

Paradigm

An artificial adjective learning study: Teach Mturkers a novel adjective, pelty roughly meaning “tight-fitting”, and either give contextual explanations (With-Explanation) or detailed, but non-explanatory, information (No-Explanation).

Exposure: Video presentations of 6 kinds of objects with narrations

possibility 2: causal reasoning?

Learners can extrapolate absolute meaning by causally attributing visual variability to contextual factors. “Explaining away” of visual information, (e.g., glass not 100% full; otherwise it will spill)

Hypothesis absolute meaning is learnable primarily through ambiguous referents if presented with context.

Experiments

Exp. 1: Can learners infer absolute meaning using contextual explanations?

<table>
<thead>
<tr>
<th>Stimuli</th>
<th>With-Explanation</th>
<th>No-Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unambiguous</td>
<td>(…) This shoe is pelty.</td>
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<tr>
<td>Ambiguous</td>
<td>“I wanted to wear these shoes with large socks. This shoe is pelty.”</td>
<td>“I only wear this shoe in summer because I don't want it to get muddy from spring rain. This shoe is pelty.”</td>
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<td>Tightly fitting</td>
<td>“I'm doing a lot of walking today, and don't want my shoes to slip on and off. This shoe is not pelty.”</td>
<td>“This shoe is pretty popular. A lot of my friends have it. This shoe is not pelty.”</td>
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Test: “Select the pelty one” (3AFC task based on Syrett et al., 2009)

Unambiguous trial

Ambiguous trial

Tighter Not-tighter Neither Tighter Not-tighter Neither

More “Neither” responses in the ambiguous test trials in the With-Explanation condition.

Conclusion: Learners inferred an absolute meaning from variable examples only when given contextual explanations.

Exp. 2: Is prosody a parameter when inferring from contextual explanations?

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Unambiguous trial

Ambiguous trial

Tighter Not-tighter Neither Tighter Not-tighter Neither

Certain and uncertain prosody did not alter “Neither” trend of Exp. 1, but saw increased “Tighter” responses in ambiguous test trial in No-Explanation condition.

Conclusion: Prosodic cues helped learners infer a relative meaning when there was no contextual explanation.

Exp. 3: Are unambiguous exemplars necessary to infer an absolute meaning?

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Test: “Select the pelty one” (3AFC task based on Syrett et al., 2009)

Unambiguous trial

Ambiguous trial

Tighter Not-tighter Neither Tighter Not-tighter Neither

More uncertainty in the learned meaning. No difference in “Neither” responses across conditions.

Conclusion: Absolute exemplars are necessary to constrain word meaning hypotheses.

Conclusion: Learners causally reason about context, generated explanations, and extrapolate an absolute meaning from visually variable exemplars