Learnability effects in children: Are languages with more structure easier to learn?

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Learnability Effects in Children: Are Languages with more systematic structure Easier to Learn?

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Background

Languages with **more regular and compositional grammars are easier to learn.** However, the causal relationship between the **degree of systematicity** and **language learning** have been tested insufficiently [1], let alone in child participants.

This study will answer the following **research questions:**

1. **Do children and adults** benefit from systematic structure in a **similar fashion?** Conceptual replication of [1]
2. **Is there any correlation between learning behavior and cognitive abilities** such as **working memory** and **selective attention?**

Methods: A preregistered study

**Artificial language learning:** 3 fantasy languages that vary in degree of systematicity (12 scene-label pairings). Guessing and production tasks assessing both memorization and generalization.

<table>
<thead>
<tr>
<th>Low structure</th>
<th>Medium structure</th>
<th>High structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>keuw (30º)</td>
<td>kome (60º)</td>
<td>guasoi (45º)</td>
</tr>
<tr>
<td>pofs (45º)</td>
<td>woesiko (45º)</td>
<td>wasoi (30º)</td>
</tr>
<tr>
<td>Kuim (0º)</td>
<td>woesiok (0º)</td>
<td>festi (0º)</td>
</tr>
<tr>
<td>Goom (315º)</td>
<td>kemet (315º)</td>
<td>festui (315º)</td>
</tr>
</tbody>
</table>

**Cognitive abilities:** Digit span working memory [2]; Map Search Selective attention [3,4]

**Participants:** 105 children (8-10 years; 35 per language); 105 adults (35 per language)

**Previous Findings**

Adults benefit from linguistic structure in a **nonlinear way** [1]

**Expected Findings**

1. **Regularity will benefit both children and adults**
2. **Children may benefit even more** compared to adults, since they’ve been found more biased and prone to regularities and generalizations
3. Participants with better **WM and selective attention** will better perform overall regardless of the level of regularity
4. Participants will **generalize better for the more regularized languages**


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Scan QR code for OSF-project page including our pre-registered report (in progress)