Making *wh*-Questions Bounded: Artificial Language Learning of a Novel Grammatical Marker

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**INTRODUCTION**

**Goal of the Study:** Investigate the learning (and use) of a novel grammatical marker that generates a specific prediction using an artificial language learning paradigm

**Filler-Gap Dependencies**

1. The *book* that the author wrote the article about ___ …

   **Example Production:**
   - filler, gap

   **Cues to Gap Positions**
   - Filler cues are cues to the presence of a gap with no details about gap position
   - (*I*/*he*-agreement = morphological marker on verb that unambiguously indicates the gap position (e.g., direct object gaps in Chamorro [1]))

**Online Processing**

- Active completion of filler-gap dependencies → gap predicted in first possible syntactic position (i.e., the direct object position) without bottom-up evidence (e.g., [2,3])
- No active completion of the direct object gap in Chamorro when the *wh*-agreement marker is absent [1]

**Main Questions:** Can participants learn a new cue that is informative about the gap position? What do they learn about this cue, and can they use it in their real-time processing?

**RESULTS: OFFLINE COMPREHENSION**

**Grammatical sentences** = 80.1% accurate (SD = 3.3%)

Participants learned the word order as well as the meaning of *zub* & *po*

- Learned the position of *ka*, but poor at rejecting incorrect uses & noticing when it is missing from required contexts

**RESULTS: ONLINE COMPREHENSION**

**Design** Question-after-story design [3]

- 15 stories; AC question types (5 each)

**RESULTS: PRODUCTION**

**DO Questions:** 12 participants use *ka* correctly ≥ 50% of their productions

**PO Questions:** 23 participants use *ka* incorrectly ≤ 25% of their productions

- 10 participants at the intersection
- 5 participants derived *opposite* interpretation

**DISCUSSION & CONCLUSION**

**Main Findings** Participants learned the meaning of a *wh*-agreement marker with limited exposure, but this knowledge is somewhat unstable as they are poor at rejecting incorrect usages of the marker & demonstrate variable production rates.

**Significance**

- New grammatical markers are learnable from limited input
- 1/3 of participants demonstrated appropriate knowledge in their productions
- But, some participants derived *opposite* interpretation

Not good at using this knowledge to generate acceptability judgments

- Poor at rejecting incorrect uses of the marker & recognizing when it is absent

Evidence of *immediate* online comprehension effects (see also [8])

- DO & PO questions treated differently
  - Active gap filling → delayed in DO questions
  - ...diminished in PO questions
- Greater effects for *ka* knowers → participants that use marker appropriately
- Some transfer of processing routine in PO questions
- Stronger response to presence of marker

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