

Inductive Bias in Learning Morphology: Syntax or Phonology

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This study explores the inductive biases in morphology learning, focusing on the interplay between syntactic and phonological cues. Grounded in the debate between the primacy of syntactic versus phonological information, our research seeks to shed light on the mechanisms underlying the learning of morphological rules.

Research has shown a complex dynamic among linguistic cues. Children predominantly favor phonological cues over semantic ones (Culbertson et al., 2017, 2019). In contrast, adult learners exhibit a more nuanced approach, balancing phonological, semantic, and syntactic cues. This suggests a developmental trajectory towards a refined sensitivity to linguistic information (Brown et al., 2022; Gagliardi & Lidz, 2014). Syntactic cues have been somewhat overlooked, primarily because of the inherent difficulty in separating pure syntactic features from semantic contents. The study by Kastner and Linzen 2018 stands out for highlighting the significant yet underexplored impact of syntactic cues, showing adult learners' marked preference for these over phonological or semantic cues. This pivot underscores the need to further investigate the role of syntax and phonology in morphological learning and their general grammatical status in language acquisition.

To investigate these biases, we use an artificial language paradigm to isolate and manipulate syntactic cues (verb-subject agreement) and phonological cues (consonant harmony). Our study comprises two experiments, targeting 200 participants each, from native English and Mandarin Chinese speaking backgrounds, to consider the effects of linguistic environment on learning. The experimental design involves training participants with constructed languages that emphasize either syntactic or phonological rules, followed by testing phases designed to measure the preference for either cue type in novel linguistic scenarios.

We predict a modest but consistent inclination towards syntactic cues among learners, regardless of their native language background. This expected trend would highlight a potentially universal bias towards leveraging syntactic information in morphology learning, underscoring the integral role of syntactic cues. Moreover, given the sparse use of morphological markers in Mandarin, we hypothesize that these participants may demonstrate a more nuanced preference for syntactic cues.

Ongoing research will be crucial to validate these biases across linguistic contexts and further dissect the interplay of syntactic, phonological, and semantic cues. This study aims to enhance our understanding of language acquisition's cognitive processes and contribute to linguistic theory development.

References

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