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

Lammertink, I.L.; Bazioni, M.; Verhagen, J.; Rispens, J.E.; Raviv, Limor

Publication date
2022

License
CC BY-NC

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
Learnability Effects in Children: Are Languages with more systematic structure Easier to Learn?

Imme Lammertink1,2 Mary Bazioni3,4 Josje Verhagen1 Judith Rispens1 Limor Raviv3,5

1) Amsterdam Centre for Language and Communication, University of Amsterdam, 2) Royal Dutch Kentalis 3) Max Planck Institute for Psycholinguistics 4) Donders Institute, Radboud University Nijmegen 5) Centre for Social, Cognitive and Affective Neuroscience, University of Glasgow

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.

Low structure
keuw (30º)
pofo (45º)
Kuim (0º)
Goom (315º)

Medium structure
kome (60º)
woesiko (45º)
woesio (0º)
kemet (315º)

High structure
quaso (45º)
waso (30º)
festi (0º)
festui (315º)

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