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Authors
Yim, Hyungwook
Savic, Olivera
Unger, Layla
et al.

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Can Paradigmatic Relations be Learned Implicitly?

Hyungwook Yim
The University of Melbourne, Melbourne, Australia

Olivera Savic
The Ohio State University, Columbus, Ohio, United States

Layla Unger
Ohio State University, Columbus, Ohio, United States

Vladimir Sloutsky
The Ohio State University, Columbus, Ohio, United States

Simon Dennis
The University of Melbourne, Melbourne, VIC, Australia

Abstract

A wealth of statistical learning research has provided evidence that regularities in which items co-occur (referred to here as syntagmatic) can be learned implicitly. However, it is not known whether higher-order relations can also be learned implicitly. Here we present two experiments that investigate whether regularities, where items do not co-occur but instead share co-occurrence with each other (referred to here as paradigmatic), can be learned implicitly. In Experiment 1, we used a traditional auditory statistical learning paradigm where participants passively listened to an auditory stream containing syntagmatic and paradigmatic regularities and found evidence only of syntagmatic learning. In Experiment 2, we instructed participants to attend to items during the training session and found evidence of learning paradigmatic relations in participants who demonstrated high-level of syntagmatic learning. The results are discussed in terms of the limits of implicit learning and the role of attentional mechanisms in learning higher-order statistical regularities.