SOLAB

Structural Priming across Cognitive Domains: From Action Sequences to Relative Clause Constructions

Amirabbas Rafiee Fazel[1*], Arsalan Golfam[2], Hayat Ameri[2], Sahar Bahrami-Khorshid[2]

1. PhD in Cognitive Science-Linguistics, Department of Linguistics, Faculty of Humanities, Tarbiat Modares University, Tehran, Iran
2. Associate Professor of Linguistics, Department of Linguistics, Faculty of Humanities, Tarbiat Modares University, Tehran, Iran

Abstract

One of the major areas of inquiry in neuropsychological research on language is whether syntactic mechanisms interact with a domain-general hierarchical processor or operate independently of other cognitive domains. Following theoretical proposals concerning the existence of structural similarities between the syntax of language and actions, the current study focuses on the relative correspondence between sentences with extraposed and center-embedded subject relative clauses (RCs) and complex actions with linear and nonlinear sequences, respectively. In a series of cross-domain structural priming experiments, therefore, we investigated whether the abstract structures of actions influence participants' processing speed during the grammaticality judgments of RCs. To this end, 31 native Persian speakers, aged 18 to 32 years, voluntarily participated in this study. We manipulated participants' exposure frequency to complex actions across linear and nonlinear sequences under three experimental conditions: execution, observation, and reading of means-end sentences. The results of pooled data from all experimental conditions revealed a suggestive structural interaction between the linguistic and nonlinguistic domains. Moreover, the overall analysis of the data by linear mixed-effects models also indicated a main effect of the experimental condition. Specifically, the speed of participants' performance on the grammaticality judgments of sentences in the execution condition significantly differed from their processing speed in the other two conditions. This indicates that participants could benefit more effectively from the prime actions during their execution. However, we found no remarkable evidence for priming effects separately within each experimental condition.

Keywords: Structural priming, Embodiment of syntax, Relative clause constructions, Action sequences, Persian

Email: A.rafieefazel@modares.ac.ir

doi.org/10.30514/icss.27.0.3