SOLAB

Effect of Forced Prediction on Syntactic Priming in Neurologically Intact Middle-Aged and Older Adults

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Abstract

Syntactic priming (reusing recently processed sentence structures) can enhance sentence production and holds therapeutic promise for aphasia. However, priming has been less studied in middle-aged and older adults, which is the most appropriate comparison group for people with aphasia. Drawing on accounts of error-based implicit learning, we asked whether forced prediction (explicitly guessing an upcoming structure) would magnify priming relative to the classical repetition priming task. Sixty-four neurologically intact English speakers aged 40–91 years (M = 60) completed two sessions in either a Guessing Game (GG) condition, predicting how a virtual interlocutor "Paul" would describe pictures before hearing each dative prime, or a Control condition (CC) that repeated the prime. Both used a picture description task, alternating between double-object (DO) and prepositional-object (PO) datives across the baseline, priming, immediate post-test, and one-week delayed post-test phases. Mixed-effects logistic regression assessed changes in DO production (short-term priming and longer-term adaptation) and explored age effects. Contrary to predictions, there were no significant immediate priming effects, no between-condition differences in short- or longer-term adaptation, and no age–priming correlations. Numerically, the GG condition showed a modest, non-significant increase in DO production relative to CC. Explicit prediction did not enhance syntactic priming in this age range. Possible explanations include (i) engagement of declarative processes that interfered with implicit learning, (ii) reduced priming due to lack of lexical overlap, and (iii) minimal linguistic insecurity in native speakers compared with L2 learners who previously showed enhancement. Future work with people with aphasia will determine whether forced prediction can still be leveraged to strengthen treatment-oriented priming.

Keywords: Syntactic priming, Error-based learning, Forced prediction, Aphasia therapy

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