The magnitude of syntactic self-priming and comprehension-to-production priming

Cassandra L. Jacobs, Duane G. Watson
University of Illinois at Urbana-Champaign

Introduction

• Speakers are primed by the linguistic environment
• May optimize communication (Pickering & Garrod, 2013; Jaeger & Snider, 2013)
• Repetition of syntactic structures might maximize production ease (MacDonald, 2013)

Research questions:

• What counts as input from the environment?
• Is priming in production different when the input is internal (self-produced) or external (comprehended)?

Experimental Design

360 English speakers: Amazon Mechanical Turk
  • Dative alternation
    • Double object dative (DO): The librarian is handing the book to the boy
    • Prepositional object dative (PO): The librarian is handing the boy the book

Three phrase study (production-comprehension-production)

Experimental Procedure

Production phase 1
  • 7 ditransitive trials
  • Typed productions

Comprehension Phase
  • Rated truthfulness of spoken image descriptions
  • 1 prime

Production phase 2
  • 7 ditransitive trials
  • Typed productions

Rates of usage of different syntactic structures before and after comprehending a double object dative prime

Figure 1

β = -0.24, t = 8.57, p < .001

% DO
% PO
% other

Before
After

Rate of usage of syntactic structure

Figure 2

β = -0.11, t = -3.04, p < .01

Rate of repetition of the first structure produced over the course of the experiment

Figure 3

β = -0.07, t = -2.07, p < .05

Effect of DO preference on usage of DO in the second production phase

Figure 4

Proportion of trials containing a DO dative

Analysis and Results

Figure 1: Do people produce the primed structure more often after hearing it?
  • DO rate ~ Phase 1 or Phase 2
  • INCREASE in DO usage (***)

Figure 2: Do people increasingly repeat the same structure they produced on the very first trial?
  • Same as First Structure ~ Trial 2-7
  • DECREASE over first half (**) •

Figure 3: Do PO-first speakers change more after hearing a DO construction?
  • DO rate ~ Phase 1 or Phase x Preference
  • Priming effects larger for PO-first (*)

Conclusions

• Speakers
  • are sensitive to what they comprehend
  • do not self-prime
• are strongly influenced when they hear a form they did not tend to produce themselves
• alternatively, may avoid repeating themselves (Healey et al., 2014)
• Evidence supports an error-driven learning account of syntactic adaptation (Chang et al., 2016; Jaeger & Snider, 2013)
• Little to no error from one’s own productions → no self-priming

References