

### Literature Review: Priming

Christianson, K., Luke, S. G., & Ferreira, F. (2010). Effects of plausibility on structural priming. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 36(2), 538-544. doi:10.1037/a0018027

- The purpose of the article was to determine how the plausibility of sentences (plausible, implausible, non-reversible anomalous, or reversible) influence the syntax (passive sentences, subject-cleft sentences, or object-cleft sentences) of subject produced responses and the accuracy of the responses. The researchers found that command prompts that were deemed plausible (the mouse ate the cheese) were more likely to elicit passive voice responses than implausible prompts (the cheese ate the mouse). However, the plausibility of the command prompts did not influence the accuracy of responses.
- "...It must be stressed that even when both word order and plausibility point away from the correct interpretation (as in the passive, implausible condition), accuracy rates were better than chance (about 74%), indicating that the language processor is generally quite good at resolving the conflicting information sources" Pg. 542
- "Participants tend to produce sentences in which the order of the thematic roles is the same as that of the prime sentence." Pg. 543
- The sample was composed of 75 University of Illinois at Urbana-Champaign students.
- How well did it match the topic? 2
- How well done was the research? 4

Meyer, A. S., & Konopka, A. E. (2014). Priming sentence planning. *Cognitive Psychology*, 73, 1-40. doi:10.1016/j.cogpsych.2014.04.001

- The purpose of the first experiment was to determine how the codability ("easy" or "hard") influences the recall of either a sentence spoken or characters in a photograph. When primed, subjects who had sentences with more fixation points (i.e. sentences with truncated passives, intransitive sentences, and those with indefinite pronouns) delayed the encoding agents. However, this effect was not seen with those who were presented with "easy" scenarios (fewer fixation points).
- "First fixations predicted selection of starting points (Fig. 1a): speakers produced .12 more actives if they looked first at the agent than if they looked first at the patient" Pg. 13
- "The lexical primes influenced sentence form only in events with "harder" agents (Fig. 2b): speakers produced fewer actives after patient primes than other primes (agent and neutral primes) to describe these events, while events with "easier" agents were less amenable to priming" Pg. 13
- The sample was composed of 48 women and 6 men who were native Dutch speakers, the majority of whom were university students.
- How well did it match the topic? 1

- How well done was the research? 4

Mulligan, N. W., & Dew, I. T. Z. (2009). Generation and perceptual implicit memory: Different generation tasks produce different effects on perceptual priming. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 35(6), 1522-1538. doi:10.1037/a0017398

- The aim of this research was to determine how rhyming cues primed an individual to produce rhyming words when left to complete word stems, word fragments, or perceptual identifications. The researchers found that rhyming cues (being shown pairs of words such as (child-mild) before being asked to complete these tasks resulted in rhyming words being produced, however that this was not directly caused by the rhyming cue.
- "The present experiments indicate that generating from a rhyme cue produces as much perceptual priming as does reading" p.1522
- "Visual lexical decision is affected by aspects of phonology, such as the presence of long or short spoken vowels, even when orthography is matched across words" Pg. 1534
- The sample was composed of undergraduate students in an introductory Psychology Course at the University of North Carolina. The sample size for the 10 experiments were as follows: 24 subjects, 24 subjects, 42 subjects, 30 subjects, 24 subjects, 24 subjects, 42 subjects, 36 subjects, 24 subjects, and 40 subjects.
- How well did it match the topic? 2
- How well done was the research? 3

Woltz, D. (2010). Long-term semantic priming of word meaning. *Journal of Experimental Psychology-Learning Memory and Cognition*, 36(6), 1510-1528. doi:10.1037/a0021039

- The purpose of the experiment was to determine whether there is a difference in recall of synonyms when given semantic primers and when given repetition priming. The researchers found that repetition priming was more effective than semantic priming, which they believe is because repetition priming accesses non-declarative memory unlike with semantic priming.
- "Whereas semantic priming magnitude conformed to a typical forgetting function, repetition priming magnitude changed in the opposite direction." Pg. 1517
- "That is, prior retrieval of word meanings related to those of target trial words produced almost the same facilitation as prior retrieval along with a comparison of the retrieved meanings" Pg. 1521
- "the semantic priming effect appeared to reflect strengthening of abstract memory for meaning that generalized to semantically similar words" Pg.1525
- How well did it match the topic? 2

- How well done was the research? 5

Arrington, C. M., Weaver, S. M., & Pauker, R. L. (2010). Stimulus-based priming of task choice during voluntary task switching. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 36(4), 1060-1067. doi:10.1037/a0019646

- The purpose of the research was to determine how given pairings of a stimulus affect what task subjects performed on the stimulus when given a choice. The researchers found that the task on the first exposure (regardless of whether they chose the task or the researchers prompted them to perform this task) was the task that was most often chosen subsequently.
- "The reactivation of an event file increases activation of one of the possible tasks in response to a stimulus...which... makes that task more available and biases the subjects' task selection under conditions when either task is equally appropriate given the higher order instructions" Pg. 1065
- "...past experience may lead to a predisposition to categorize specific items on dimensions with which they have been associated more strongly in the past" Pg. 1065
- Experiment 1 was composed of 26 undergraduate students with normal/corrected vision. Experiment 2 was composed of 26 undergraduate students with normal/corrected vision *who did not participate in Experiment 1*.
- How well did it match the topic? 3
- How well done was the research? 4

Carminati, M., & Knoeferle, P. (2013). Effects of Speaker Emotional Facial Expression and Listener Age on Incremental Sentence Processing. *PLoS ONE*. Retrieved November 16, 2015, from <https://mindmodeling.org/cogsci2013/papers/0365/paper0365.pdf>

- The purpose of this experiment was to determine how the facial expression of a person affects sentence attribution and comprehension. Subjects were shown an individual's face and then heard the individual say a sentence describing a picture; finally, they were asked whether the person's face was congruous with the sentence. The researchers found that the younger the participants were the more likely negative sentences primed the subject to look to the negative pictures, however those in the older cohort were more influenced by positive primes.
- "A central tenet of socioemotional selectivity theory is that emotion regulation improves with age and that the positivity effect occurs because older people are capable (consciously or unconsciously) to selectively regulate their emotions in order to enhance positivity and well-being." Pg. 1981
- "... the integration of the visual context with facial and linguistic information occurs early and that the time course of this integration does not substantially differ between the two age groups. " Pg. 1980
- The subjects in group 1 were 32 individuals aged 60-72 years old. The subjects in group 2 were 32 individuals aged 19-29 years old.

- How well did it match the topic? 3
- How well done was the research? 4

Miller, C. A., & Deevy, P. (2006). Structural priming in children with and without specific language impairment. *Clinical Linguistics & Phonetics*, 20(5), 387-399.  
doi:10.1080/02699200500074339

- The purpose of the experiment was to determine if structural learning impairments (SLIs) affect the demonstration of structural priming. Participants were shown characters on a laptop, and later asked to repeat a sentence about the characters (primer) and add their own sentence about the characters. The researchers found that all subjects (those with and without SLIs) were more likely to use transitive phrases when primed by transitive sentences, thus SLIs do not affect structural priming.
- "The effect found by subjects can be interpreted as indicating that we would likely observe a main effect of prime type with a different group of subjects, while the lack of an effect by items indicates that we would not likely observe a main effect of prime type with a different set of items." Pg. 396
- "For very simple transitive and intransitive sentences, structural priming was observed in young children with and without SLI. This finding confirms that structural priming can be used to explore production mechanisms in children, including children with SLI." Pg. 397
- The sample was composed of 54 children, 18 of which had an SLI. The subjects ranged in age from 4 years old to 6 years old.
- How well did it match the topic? 4
- How well done was the research? 4

Hupp, J., & Jungers, M. (2009). Speech priming: An examination of rate and syntactic persistence in preschoolers. *British Journal of Developmental Psychology*, 27(2), 495-504.  
doi:10.1348/026151008X345988

- The purpose of this experiment was to determine whether the rate at which sentences were presented and the syntax of the sentences influenced the rate and syntax of subject produced sentences. Participants were shown a picture, told a sentence (the rate at which it was said, and syntax of which were manipulated as independent variables), asked to repeat the sentence, and then asked to create a new sentence about a different photo. Researchers found that the rate of repetition was consistent with the rate at which the sentence was told to the participants, but

was not consistent with the rate at which the subjects presented their sentences; there was a minimal link between syntax as well.

- "Children's productions revealed an abstract representation of rate and syntax that was not tied to particular lexical items" Pg. 501
- "As is necessary to successfully coordinate conversation, children's productions were directly related to the input that they received, and this changed as a function of age." Pg. 501
- "The difference between 4- and 5-year-olds' rate persistence suggests that the coordinative processes of conversational competence are developing in preschoolers." Pg. 502
- The sample consisted of 55 preschoolers (31 males, 24 females) aged 4.22-5.96 years old living in Ohio.
- How well did it match the topic? 2
- How well done was the research? 4

Hashimoto, N., McGregor, K. K., & Graham, A. (2007). Conceptual organization at 6 and 8 years of age: evidence from the semantic priming of object decisions. *Journal of Speech, Language, and Hearing Research*, 50(1), 161+. Retrieved from <http://go.galegroup.com/ps/i.do?id=GALE%7CA162242138&v=2.1&u=tall85761&it=r&p=HRCA&asid=92944ec2b031ece6e55a872ecb58bc60>

- The purpose of this experiment was to study children's awareness of semantic relationships. The researchers separated their subjects into a primed group (primes were either taxonomic, thematic, or perceptual) and an unprimed group and asked to make decisions about objects. The researchers found that there was not a significant difference among the 3 age groups in regards to priming or awareness of semantic relationships, however the 8 year olds were more able to comprehend taxonomic relationships than 6 year olds.
- "the 6-year-olds could identify the objects as real or not real at substantially better than chance levels"
- "Six-year-olds in the primed group performed significantly better than those in the unprimed group in the taxonomic condition ( $p = .007$ ), but not in any other condition ( $ps > .05$ ). There were no significant priming effects by condition for either the 8-year-olds or the adults."
- The sample consisted of 23 six-year-olds (11 girls, 12 boys), 26 8-year-olds (14 girls and 12 boys), and 26 young adults aged 18-35 (20 women, 6 men).
- How well did it match the topic? 4
- How well done was the research? 3

