Word Processing in Picture-Word Interference May Be under Cognitive Control

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Abstract: Picture-word interference (PWI) is often attributed to automatic word processing that results in competition between the picture name and the meaning of a simultaneously presented distractor word. We present evidence from two PRP experiments that the interference effect is not as automatic as often claimed. Both experiments consisted of a PWI task and a tone classification task. In Experiment 1, the PWI distractors never named the picture, whereas in Experiment 2, a congruent condition was added in which the distractors named the picture in 1/3 of the trials.

We found that the PWI effect was strongly modulated by the presence or absence of the congruent condition. We hypothesize that the inclusion of a congruent condition lead to a different strategy, in which the distractor word is attended more. Using cognitive modeling, we attribute the difference in PWI to the different amounts of competition in subsequent memory retrievals during the task.