

Interference and Inhibition of Distractors

Hsuan-Fu Chao, Yei-Yu Yeh, and Ting-Ying Yang

Department of Psychology, National Taiwan University

The relationships among distractor activation, distractor interference, and distractor inhibition were investigated through a negative priming paradigm. Two issues were addressed in this study. First, the authors studied the relationship between distractor activation and distractor interference, to see what kind of distractors can produce a larger interference effect on target processing. Second, the effect of prime distractor interference and probe distractor interference on negative priming were examined, to see whether negative priming is contingent on distractor interference. In Experiment 1, assuming that the activation level of an item increases as it is repeatedly presented in one experimental session, the authors orthogonally manipulated activation level of prime target and prime distractor to be either high or low. The results indicate that distractor can produce a larger interference effect when it is in the same activation state as the target is. That is, when target and distractor are both in a state of high activation

or both in a state of low activation, the distractor interference effect on target processing is larger. Furthermore, negative priming is significant only when both prime distractor interference and probe distractor interference are large. Experiment 2 and Experiment 3 manipulated the activation level of prime target and probe distractor, and confirmed that negative priming manifests only when interference from both prime distractor and probe distractor is high. This study reveals how the interaction between activation level of target and activation level of distractor influences the dynamics of distractor interference, and indicates that interference in both prime trials and probe trials is critical to the manifestation of negative priming. Implications on models of negative priming are discussed.

Keywords: negative priming, interference, inhibitory process

