

What Mechanism Underlies the Irrelevant Speech Effect: Phonological Processing or Rehearsal?

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ABSTRACT

The disruption of visual-verbal serial recall performance through task-irrelevant background speech is called the irrelevant speech effect (ISE). This effect, according to the changing state-account, results from sound-induced impairments of the serial rehearsal process that participants use to maintain the item sequence. In a series of experiments, we explored role of rehearsal in the ISE. To do so, we minimized rehearsal use through rapid visual presentation of the list items. In contrast to the prediction of the changing state account, the ISE was not abolished or diminished with a rapid when compared to a slow presentation rate. We argue that irrelevant speech does not specifically affect serial rehearsal, but impairs phonological processing in general. In the current experiment, we investigate the ISE in the standard serial recall task, and in a phonological processing task that does not require serial order retention and strongly discourages a rehearsal strategy. This allows direct comparison of the ISE on both tasks. The results will be compared with those from earlier experiments, and implications for dominant accounts of the ISE are to be discussed.

Keywords: Irrelevant Speech, Background noise, Working Memory, Rehearsal, Phonological processing