A Multinomial Modeling Analysis of the Recognition-Failure Paradigm

William Batchelder

The recognition-failure paradigm has received much theoretical consideration, especially the Tulving-Wiseman function and its exceptions. We present a simple multinomial model based on retrieval-independence theory which is capable of measuring storage and retrieval processes in recognition failure. The model is used to conduct a meta-analysis of the recognition-failure paradigm and shows that violations of the Tulving-Wiseman function occur under conditions where weak storage is coupled with strong retrieval. In addition, if storage and retrieval are assumed to be positively correlated across conditions, the model produces a theoretically motivated, alternative equation to the Tulving-Wiseman function that provides a virtually identical fit to the data. We argue that research and theory on the recognition-failure paradigm has overlooked some basic theoretical and statistical issues, and instead has focused too strongly on complex theories and statistical artifacts.