

RESOLVING THE CONFLICT BETWEEN THE DISCRETE-SLOTS AND  
DISTRIBUTED-RESOURCES MODELS OF WORKING-MEMORY CAPACITY

Jonathan Thiele

Dr. Jeffrey Rouder, Thesis Supervisor

ABSTRACT

It is generally accepted that Working Memory is limited in capacity. However, there has been substantial debate over whether this limit in capacity is best described as a finite limit on the number of items that can be stored or a decline in the precision of memory as the number of memoranda increases. In an attempt to resolve this debate, ten mathematical models that incorporate the above assumptions were fit to the data from six experiments, encompassing 155 participants, using Maximum Likelihood Estimation. Measures of fit derived from the maximized likelihoods were used to compare the two descriptions of capacity. Overall, Working-Memory Capacity seems to be more accurately described as a limit on the number of items that can be held in memory.