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3 Verbal and Spatial Acquisition as a Function of Distributed Practice  
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5 and Code-Specific Interference  
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## Abstract

Theories of memory must account for memory performance during both the acquisition (i.e., ongoing learning) and retention (i.e., following disuse) stages of training. Whereas the retention advantage for spaced over massed practice is well accounted for by current theories of memory, the same theories predict massed, rather than spaced, acquisition advantages, often with appeal to a trace decay mechanism. In a series of three experiments, we show that massed acquisition advantages occur only in the presence of code-specific interference (defined as the engagement in two alternating tasks that both emphasize the same processing code, such as verbal or spatial processing codes; e.g., learning letter-number pairs and reading text), whereas spaced acquisition advantages are observed when code-specific interference is absent. These results present a challenge for major theories of memory. Furthermore, we argue that code-specific interference is important for researchers of the spacing and interleaving effects to take into consideration, as the relationship between the alternating tasks used has a substantial impact on acquisition performance.

*Keywords:* spacing effect, interleaving, acquisition, interference, memory