

# The Effect of Pre-Trial Event Stimulus Properties on Timing in the Peak Interval Procedure

by

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In the peak interval procedure, intruded conditioned stimuli produce shifts in peak/middle time towards later values, regardless of whether these stimuli are presented prior to or during the timing signal. Although the effects of during-trial stimulus properties—temporal location, duration, and salience—have been previously reported, no research exists on how before-trial stimulus properties influence the extent of shifts in middle time. In the present study, we manipulated within-subjects both the temporal location and type (i.e., cue alone, response-independent reinforcer alone, or cue and response-contingent reinforcer together) of the pre-trial event. An individual-trial analysis suggested that the type of stimulus event governs the extent of the shifts in middle time, with larger shifts observed on trials preceded by a reinforcer, either alone or in conjunction with a conditioned cue, than on trials that were preceded by the conditioned cue alone. These results indicate that reinforcers can disrupt timing by means other than a reset of working memory—an account that is common in prior investigations of reinforcers in timing tasks. In addition, we found a time-dependent effect of the event, with larger shifts in middle time engendered by events more contiguous to the timing signal, suggesting that the postcue effect dissipates following the offset of the event.