

TEMPORAL CHARACTERISTICS OF SHIFTS OF COVERT ATTENTION

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Our brain cannot handle all the incoming information simultaneously. So, we first attend to the most important information and then we shift attention to the next sequentially. To examine the temporal characteristics of shifts of attention, we trained one rhesus monkey in a behavioral task, which required the subject to pay attention covertly to one object and another sequentially. All experimental procedures complied with the Guide for the Care and Use of Laboratory Primates, Kyoto University. The task started when the monkey pressed a lever and fixated on a central fixation point. After 1 sec, a small red square cue appeared on the left or right of the fixation point. In 80 % of the trials, an upward or downward triangle probe appeared for 34 ms on the side opposite to the cue. The cue dimmed 34-1500 ms after the probe onset. If the probe was an upward triangle or did not appear, the monkey was required to release the lever within 600 ms after the cue dimmed. If the probe was a downward triangle, the monkey was required to hold the lever for 2 sec. The results showed 50-100 ms after the probe onset, the percentage of correct responses had decreased. The reaction time had increased during the same period and was longest at 67 ms after the probe onset. The results indicated that the attention had disengaged from the cue by 67 ms after the probe onset, and soon thereafter the attention had come back to the cue.

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