

Automatic capture of attention by the onset of motion

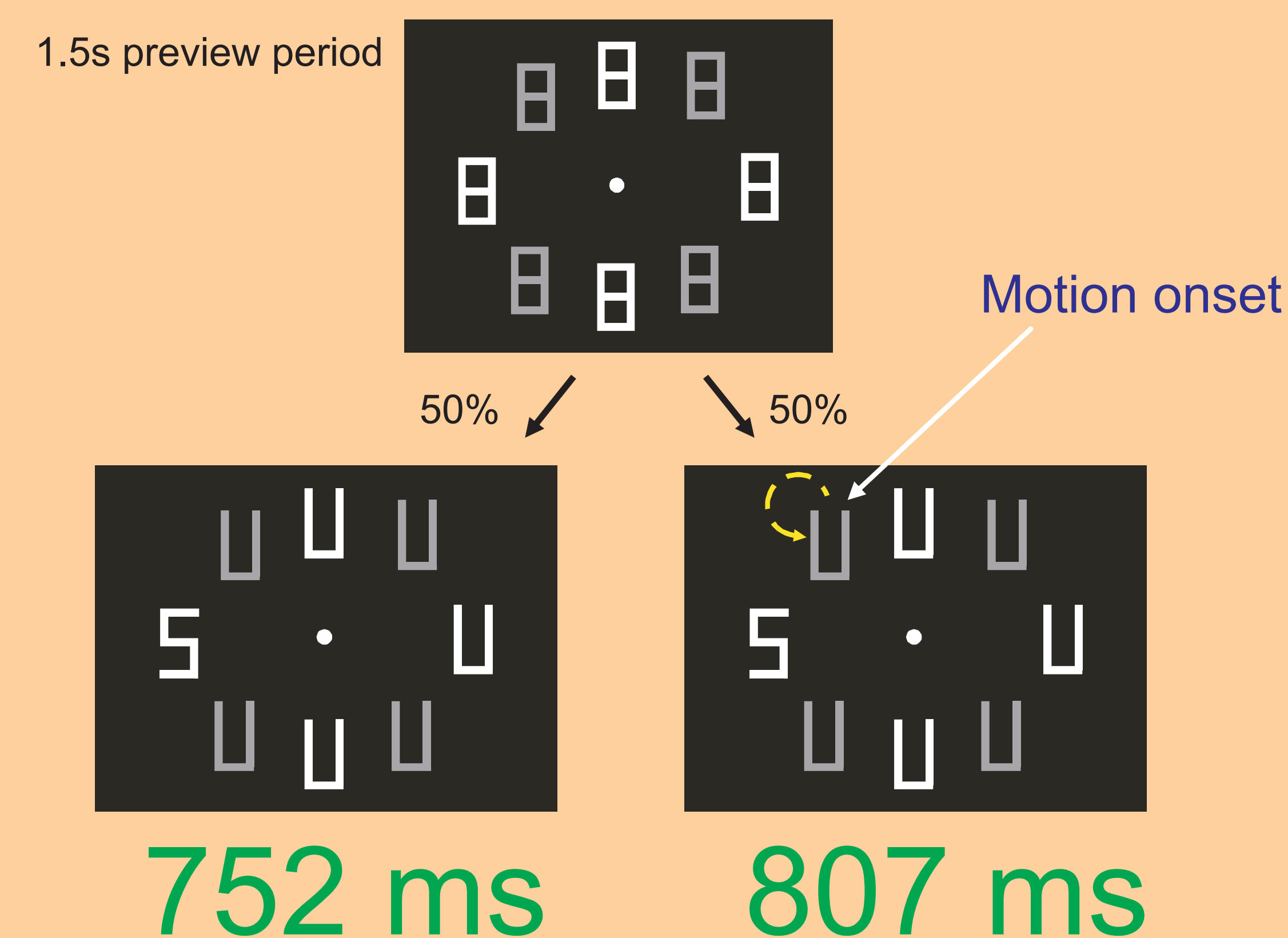
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Experiment 1

Irrelevant motion onsets capture attention

We have recently shown that the onset of motion captures attention. In the present study we asked whether capture by motion onset could be resisted when it was known to be irrelevant.

In our first experiment, subjects indicated whether an S or an H had been presented among distractor letters. They knew that the **gray elements would never contain the target letter**, but the gray elements might contain a motion onset.

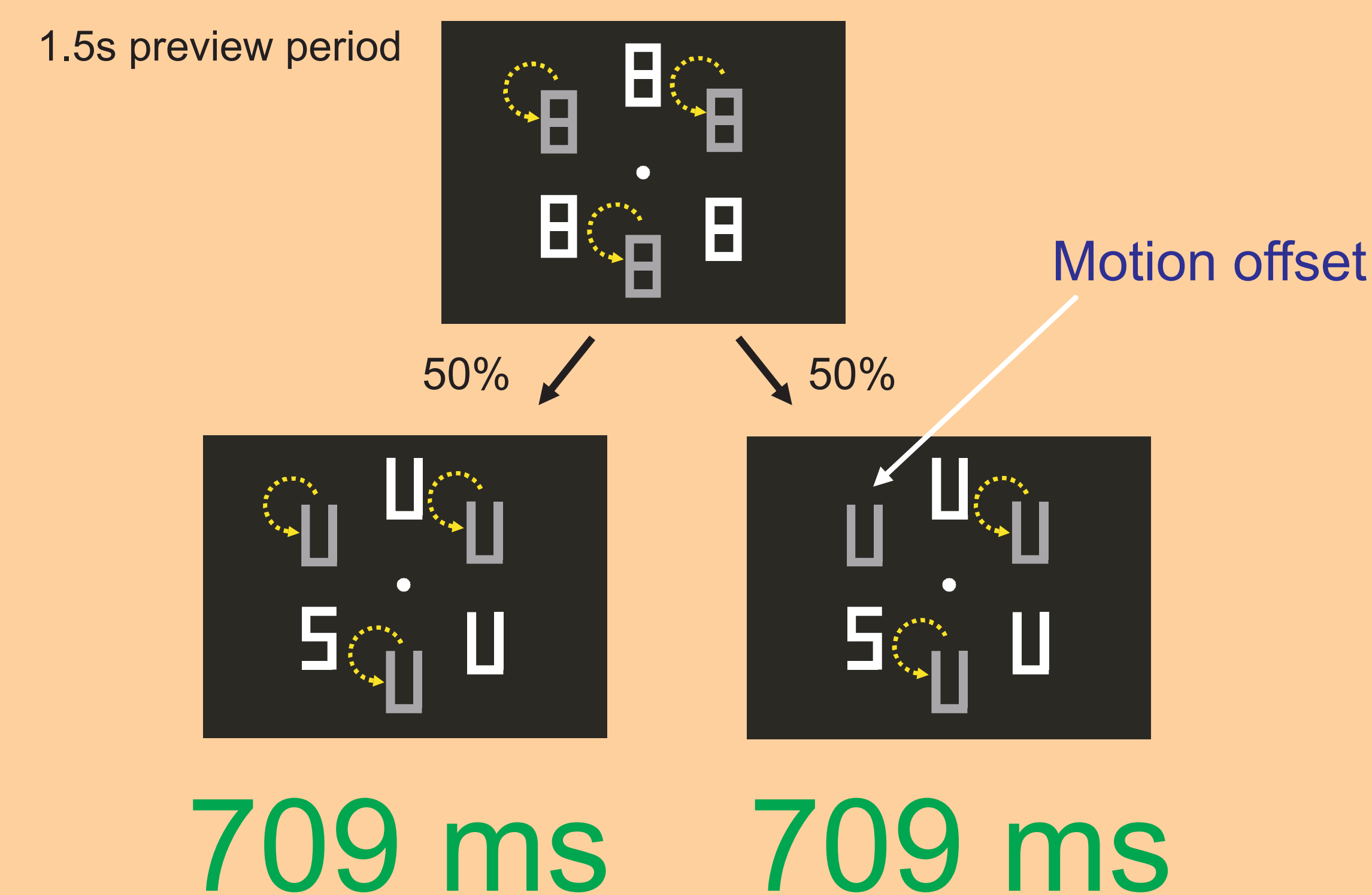


Latencies to identify the target letter were slower in the presence of a motion onset indicating that subjects were unable to suppress the effects of the onset. We infer that the onset captured attention.

Experiment 2

Irrelevant motion offsets do not capture

It is possible that the distracting effect of the motion onset in Experiment 1 was due not to capture of attention by the motion onset per se, but instead due to capture by the **transient event** that accompanied the onset. To test that possibility we repeated the experiment but with a motion offset as the transient event.

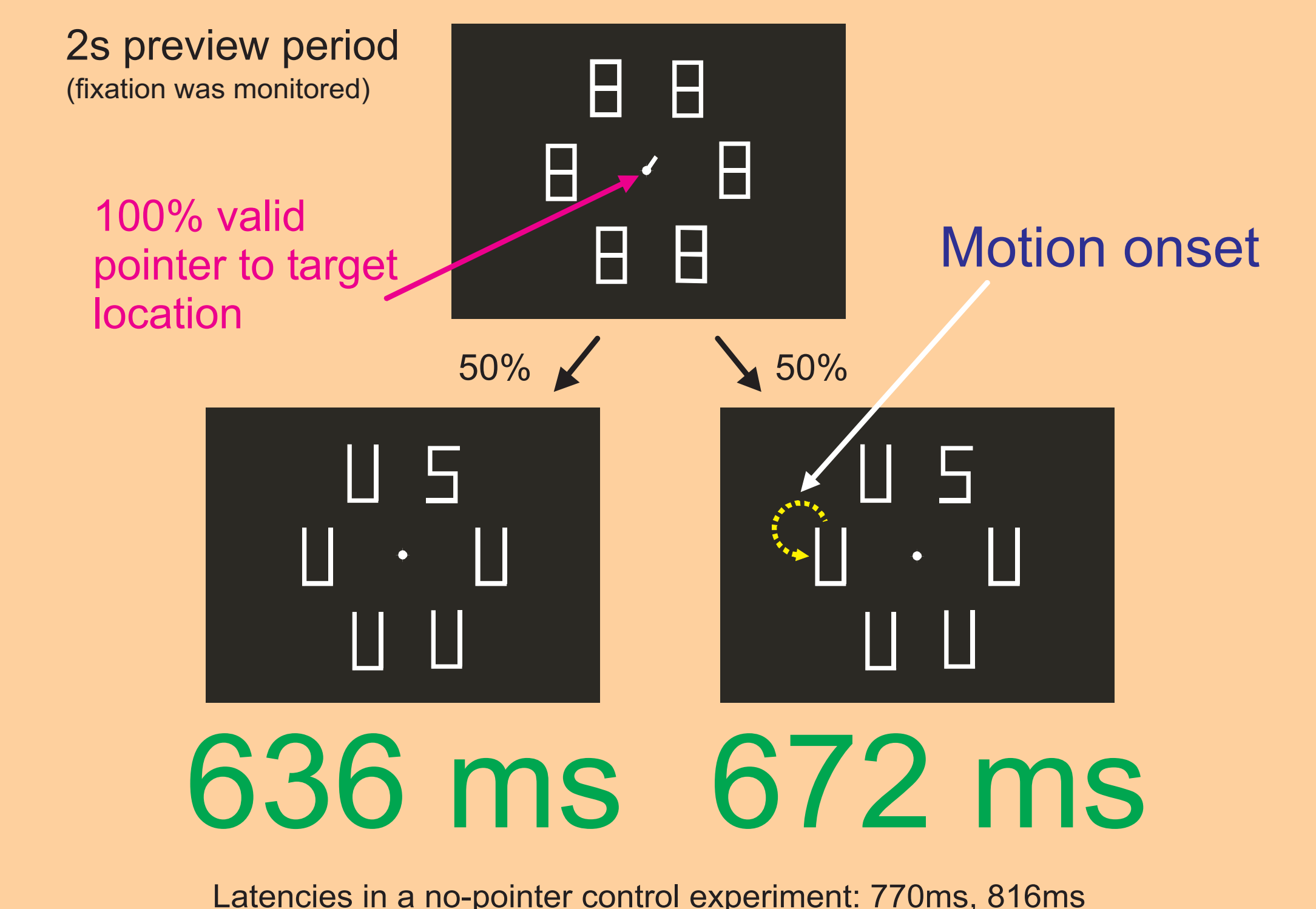


The motion offset did not affect target discrimination, suggesting that the results from Experiment 1 were due specifically to the capture of attention by the motion onset.

Experiment 3

Motion onsets capture outside the focus of attention

In Experiments 1 and 2 subjects did not know exactly where the target would be presented. As a result we presume that their attention was focused diffusely over the entire display--including the location that contained the motion onset. That might explain why the motion onset captured attention. In Experiment 3 we tested whether a motion onset would continue to capture attention even if the motion onset was outside the focus of attention.



Even when subjects knew exactly where the target would appear, they were adversely affected by a motion onset elsewhere in the display.

The results show that the onset of motion captures attention even under conditions in which subjects have their attention focused elsewhere in the display. **Thus, motion onsets may be unique in generating pure bottom-up capture of attention.** We believe that motion onsets are important because they are indicative of animacy--something that starts to move may be alive. And the ability to detect other nearby animals may be crucial for survival.