

The Oddball Effect Extends to Dynamic Stimuli

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The oddball effect (OE) is a temporal illusion, according to which, rare stimuli (oddballs) are perceived as having a longer duration than more frequent stimuli (standards) of the same duration. A typical design is to present multiple stimuli sequentially with oddballs defined by having a physical feature that is distinctly different from that of the standards (e.g. size, color, shape). Tse et al. (2004) showed that dynamics can modulate the OE. Specifically, oddballs that were defined by a dynamic increase in size among static standards induced a larger OE than did static oddballs among dynamic standards. This suggests that dynamics might play a special role in the OE. To test this, we measured the OE under conditions in which all stimuli were dynamic, thereby reducing the contrast of a dynamic oddball compared to when it is among static standards. Stimuli were disks that continuously changed color. The oddball was a dynamic increase in size that either began immediately when the stimulus onset (Experiment 1) or after a delay of ## ms (Experiment 2). Robust OEs were found in both experiments, confirming that the (1) the OE occurs even when comparing two dynamic stimuli — i.e. stimuli which have at least one, feature which is constantly changing and (2) that the oddball does not need to be recognized as such from the outset — i.e. a stimulus can be identified as an oddball after the onset of stimulus presentation via the introduction of an unexpected feature change.