



# Eye Movements, Attention, and Stable Perception

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Although we experience a stable visual world, the retina is in almost constant motion as our eyes move around. I will describe several lines of research supporting the notion that the spatial attention system predicts the sensory consequences of eye movements, and discuss some of the ways in which this prediction can promote perceived stability. I will begin with experiments demonstrating that the experience of making an eye movement precedes the eye movement itself by around 40-60ms. I will also demonstrate that a visual pattern mask placed in the expected future retinal coordinates of a target just before an eye movement interferes with target identification. Finally, I will describe results from hemianopic patients, whose sensitivity to a dim stimulus in the sighted field is enhanced by the presence of a blind-field stimulus shown in the same spatial location before the eye movement. Together these findings suggest that information about an impending eye movement can be used to track the expected change in the retinotopic location of attended information in the visual field. Anticipating the retinal consequences of a saccade bridges the representation of objects from one fixation to the next, to form a single, uninterrupted representation.



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