
Saccadic "Adaptation" at Late Target Reappearance

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Résumé

According to literature, saccadic adaptation in humans is disrupted when the presentation of the post-saccadic target is delayed, and disappears at delays around 600ms. This generally accepted result is however based on two small research samples (6 subjects in total). In this study, to establish the exact time window of saccadic adaptation, we examined the effect of various temporal delays of target displacements on the amount of adaptation. Because an increased delay leads to the perception of displacements, adaptation should differ in nature. Recent works suggest that distinct learning processes can contribute to the modification of saccadic amplitude: an implicit learning (automatic and slow) and an explicit learning (voluntary and fast). In this study we evaluated both components by measuring reaction times, saccades' variability and stabilization, learning and retention rates for each tested delay. Preliminary results show that saccades' amplitude is modified up to a 1200ms delay, and still visible in large proportion up to 600ms. Our visual system continues to "adapt" eye movements even when target displacements can be attributed to a change in the environment and not to saccadic errors anymore. Our results, however, do not allow us to differentiate the exact nature of the mechanisms involved yet.

Mots-Clés: Saccadic Adaptation, Target delay, Strategy/Motor learning

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