

TITLE: HOW THE LEVEL OF FAMILIARITY WITH AN IMAGE INFLUENCES VISUAL SEARCH PATTERNS

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Abstract

Learning, by definition, is observed by behavior change. However, what continues to elude scientists is how the process of learning occurs in the brain. We propose that one way to study learning may be to use visual search patterns. This project explores whether subjects' visual search patterns change with experience with select images. Our theory is that when a person sees an image multiple times, they should recognize an image faster due to experience and therefore examine the image less thoroughly for less time. We hypothesized that the duration of viewing an image and the number of fixations (moments when the eye rested on a location in the image) would decrease as subjects see an image repeatedly. We also hypothesized that the durations of these fixations would increase with experience.

Subjects from the general population were tested using an eye-tracking device that tracked a subject's visual gaze pattern. Subjects were shown a series of four repeated images, as well as other images that were not repeated.

We conducted graphical and statistical analyses across subjects and per individual subjects and found no statistically significant results to uphold our predictions. However, nonstatistically significant trends supported our hypotheses that viewing duration decreased with repeated viewings and that the number of fixations per image decreased with repeated viewings. Future experiments are currently being planned to refine this study.