Learning effects in peripheral vision

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Résumé

While there is a large body of evidence for perceptual learning in central vision, the possibility of perceptual learning in the discrimination of basic features in peripheral vision appears more equivocal. We conducted three experiments evaluating perception of the size (Expt. 1), feature orientation (Expt. 2) and temporality (Expt. 3) of simple stimuli visually presented in the periphery. After a familiarization session, points of subjective equivalence (PSEs) or simultaneity (PSSs) as well as discrimination sensitivity (JNDs) were assessed in three successive blocks of trials. Learning effects were visible in each experiment, in that JNDs decreased over the blocks i.e., sensitivity increased (and PSEs remained stable). In Experiment 3, because the bias in temporal order judgements disappeared (PSS_~0), and because other studies failed to show any learning effect, we rather attribute the performance improvement to non-perceptual processes (e.g., familiarity with the procedure or stimuli). We are nevertheless confident that a true perceptual learning occurred in the experiments on object size and feature orientation (Expts. 1 and 2). Our findings add further evidence that such learning in peripheral vision can occur on a short time scale.

Mots-Clés: psychophysics, size perception, temporality perception, orientation perception, learning effect, peripheral vision

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