

Effects of attention on perceptual learning

Marisa Carrasco
Psychology and Neural Science
New York University
marisa.carrasco@nyu.edu

Repeated practice can improve perceptual abilities of adult humans. This perceptual learning reveals sensory plasticity and results in better detection and discrimination of relevant visual information. Behavioral, neuroimaging and neurophysiological studies have shown that extensive training in a perceptual task often results in specific improvements in the trained task, stimuli and spatial locations. We have found, however, that covert attention can help generalize learning across space. Moreover, we have investigated whether perceptual learning transfers to the location of predictive remapping. Just before the eyes move, predictive remapping of visual attention facilitates perception at future relevant locations, providing a functional account of anticipatory responses in many retinotopic brain areas when an imminent saccade will bring a stimulus into a neuron's receptive field. We have found that perceptual learning transfers to the location of predictive remapping, whereas there is no transfer to equidistant, control locations. Thus, covert attention and presaccadic attention can help generalize perceptual learning.