

Neural plasticity in high-level visual cortex underlying object perceptual learning

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Abstract With intensive training, human can achieve impressive behavioral improvement on various perceptual tasks. This phenomenon, termed perceptual learning, has long been considered as a hallmark of the plasticity of sensory neural system. Not surprisingly, high-level vision, such as object perception, can also be improved by perceptual learning. Here we review recent psychophysical, electrophysiological, and neuroimaging studies investigating the effects of training on object selective cortex, such as monkey inferior temporal cortex and human lateral occipital area. Evidences show that learning leads to an increase in object selectivity at the single neuron level and/or the neuronal population level. These findings indicate that high-level visual cortex in humans is highly plastic and visual experience can strongly shape neural functions of these areas. At the end of the review, we discuss several important future directions in this area.

Keywords

Introduction

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Psychophysical evidence: specificity and generalization in object perceptual learning

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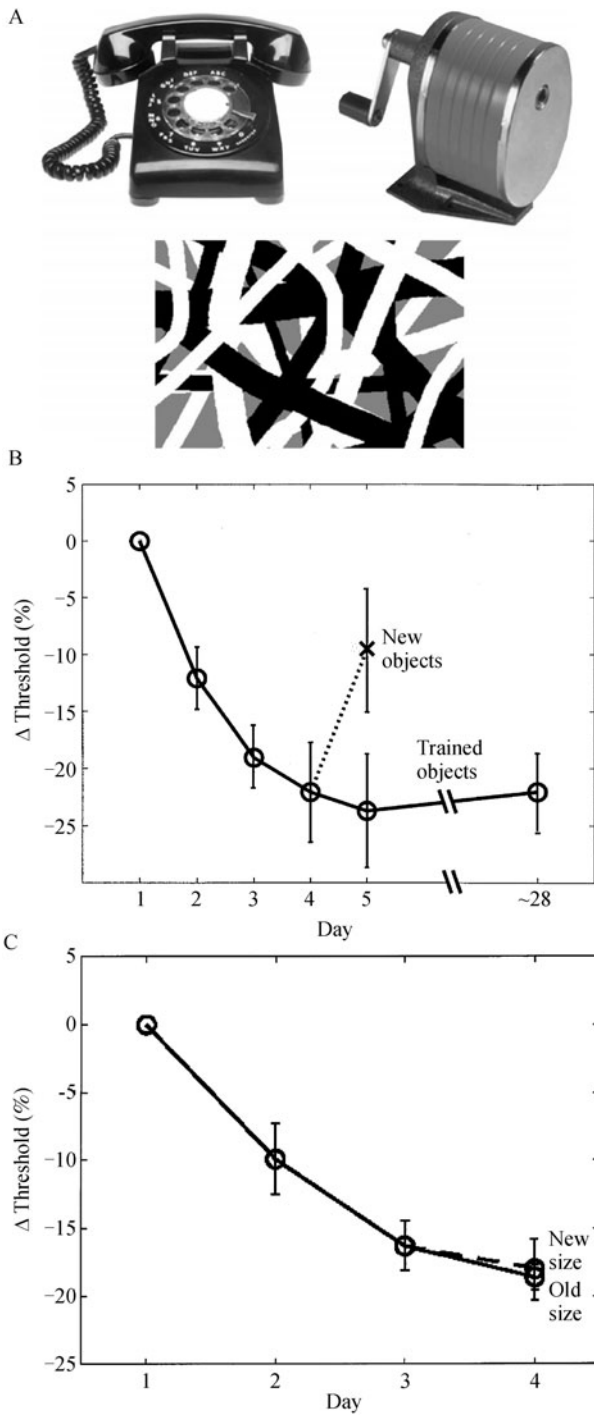


Figure 1

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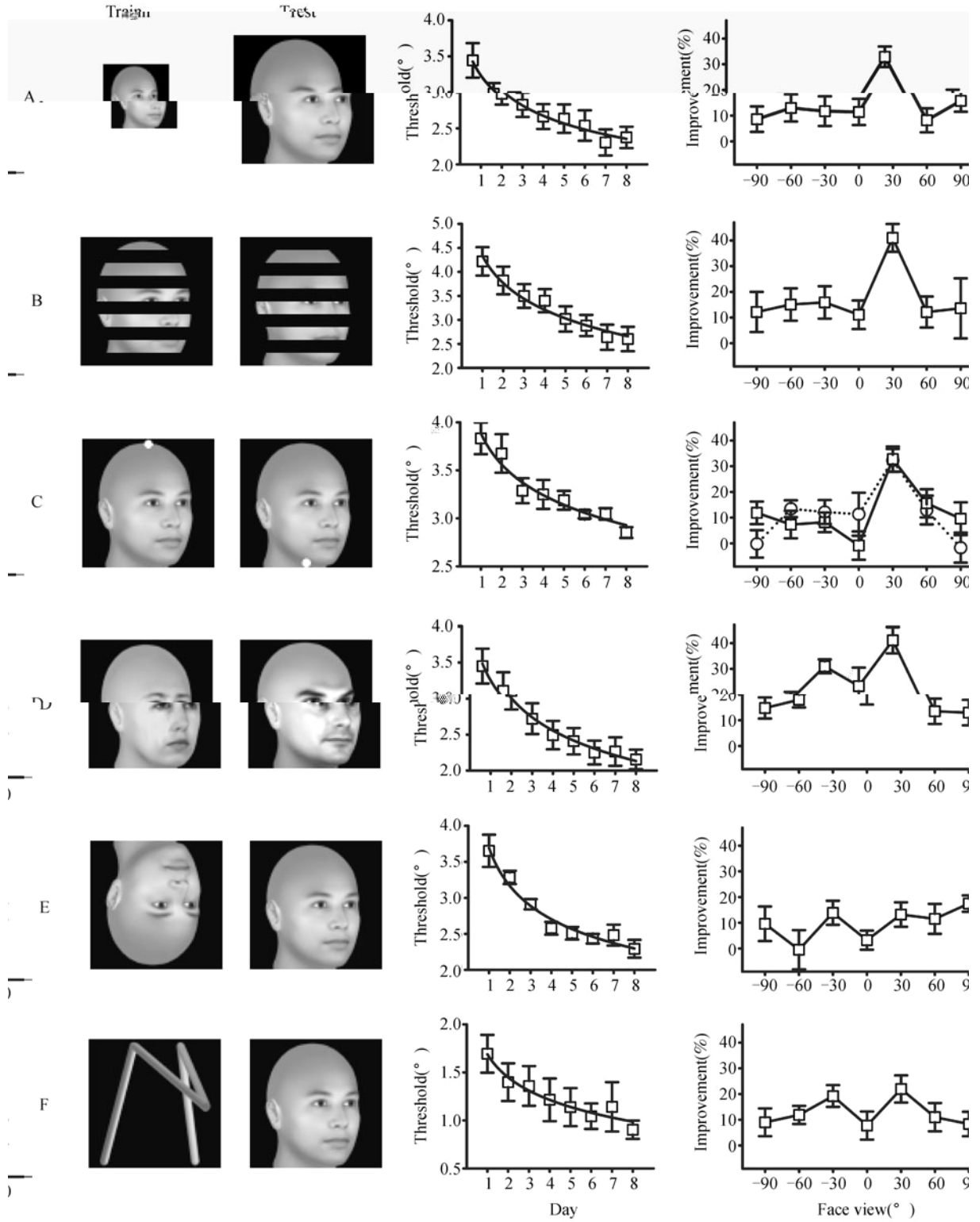


Figure 2

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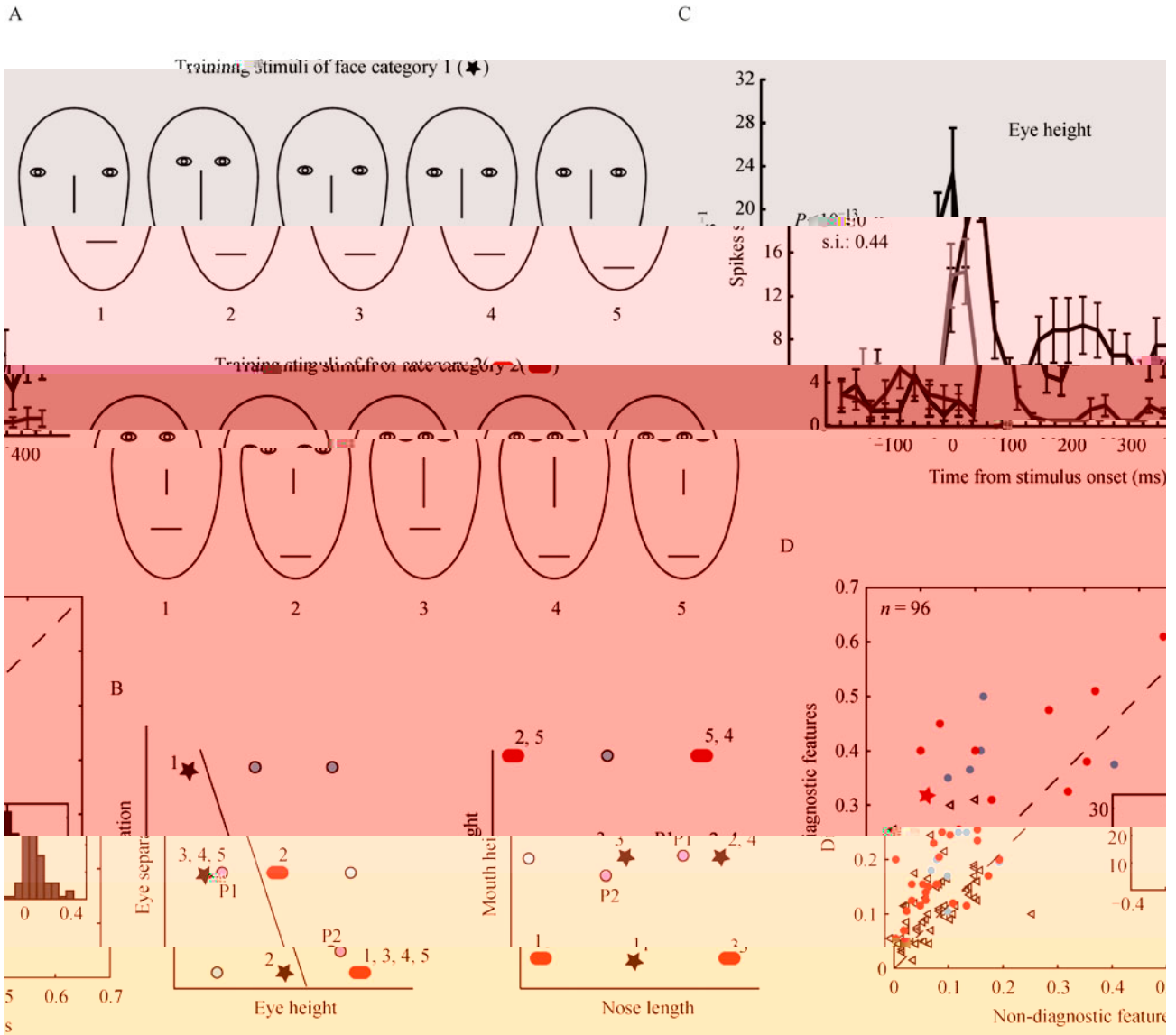


Figure 3

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