COLGATE UNIVERSITY
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Institutional Review Board Proposal Cover Sheet

Title of Project: Does adaptation to an inverted face affect the facial aftereffect for rotated faces?

Anticipated number of participants: females: 20 males: 20 Approximate ages: 18-22

Submission date: xx/

Purpose of Investigation and Procedures

Facial recognition is the product of specialized neural mechanisms. Previous research suggests that the fusiform face area (FFA) in the human extrastriate cortex is specifically tuned to the recognition of faces (Kanwisher, 1997). Facial identification is also a feature- and identity-based process that involves multiple neural regions. In an attempt to model the mechanisms involved in facial recognition, Valentine (1991) proposed a framework in which a specific point in multidimensional space represented a unique facial identity. This "face space" includes a neutral or general face at its center with unique faces surrounding the center like spokes on a wheel (Valentine, 1991). Leopold and colleagues (2001) found that if individuals adapted to a particular facial identity in this "face space," their subsequent perception of neutral faces was altered in that faces previously judged to be neutral suddenly took on a new identity (i.e., the neutral face now looked like someone else), an effect that has been termed the "face aftereffect". Interestingly, the effect was shown for inverted faces, which are known to be processed by different neural mechanisms in addition to the FFA. These findings emphasize a difference between facial identity and object recognition mechanisms that may work in parallel during the identification of inverted faces.

What is currently unknown is the extent to which facial aftereffects transfer to different orientations (e.g., inverted faces, or faces rotated to an intermediate orientation). Specifically, if a participant adapts to an upright face, with that adaptation transfer to a neutral face positioned at a different orientation. In the current study, participants will sit in front of a computer monitor and learn a set of four faces. They will then view one of those four faces during an adapting phase (4000 mse(rte40lwitter an uprid)5ghtfor inse

Manner of Obtaining Participants

Everyone in the Psychology 150 class will be eligible to participate in this study, as well as any other interested Colgate students, faculty, or staff. Psychology 150 students will receive 1 hr of participation credit for participating in the experiment, and the experimenter will sign their cards after completion of the experimental task. All of the participants will read and sign the Certificate of Informed Consent before beginning the experiment. Upon completion of the experiment, participants will be verbally debriefed regarding the aim of the study.

References

Kanwisher, N., McDermott, J., & Chun., M.M. (1997). The Fusiform Face Area: A Module in Human Extrastriate Cortex Specialized for Face Perception. *Journal of Neuroscience, 17*, 4302-4311.

Leopold, D.A., O'Toole, A.J., Vetter, T., & Blanz, V. (2001). Prototype-Referenced Shape Encoding Revealed by High-Level Aftereffects. *Nature Neuroscience, 4(1)*, 89-94.

Valentine, T. (1991). A Unified Account of the Effects of Distinctiveness, Inversion, and Race in Face Recognition. *The Quarterly Journal of Experimental Pscyhology, 43A(2)*, 161 204.

Certificate of Informed Consent

Overview and Procedure. This is a study on visual perception and facial recognition. Participants