

HONOURS BACHELOR OF SCIENCE (2007)  
MCMASTER UNIVERSITY  
Hamilton, Ontario

TITLE: A Direct View of the Facial Regions Used in Face Discrimination in Autism Spectrum Disorders (ASD)

AUTHOR: Diana Carbone

SUPERVISOR: Dr. A.B. Sekuler

NUMBER OF PAGES: ix, 62

## Abstract

Face discrimination relies primarily on the eye region (Sekuler, Gaspar, Gold & Bennett, 2004). Individuals with Autism Spectrum Disorders (ASD) may process faces differently. Rutherford, Clements and Sekuler (in press) identified two subclasses of ASD observers, one that performed similar to controls and another that exhibited an impairment in processing the eye region. This study makes use of the reverse correlation technique to more directly examine the regions used in face discrimination in both groups of ASD observers and controls. This technique presents stimuli in noise and outputs a classification image that indicates those regions that consistently bias an observer's response (Sekuler et al., 2004). One of every four pixels of the original stimuli used in Sekuler et al. (2004) was subsampled. The number of trials necessary to generate stable classification images was also reduced. The identification efficiency as indicated by contrast thresholds was indistinguishable between ASD and community controls. Both groups showed use of the eye region when discriminating faces. Groups did not significantly differ in the amount and location of stimulus used. Additionally, the degree to which different regions were weighted appropriately for the task as indicated by normalized cross correlations was not significantly different between groups. This study could not conclude whether ASD observers from Rutherford et al. (in press) performed in a similar manner in this study due to small sample size. The findings of this study suggest that ASD and typically developed individuals may not differ in the way in which they discriminate faces.