Abstract

Problem Statement
Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by impairment in social communication and unusually repetitive behaviors that emerge within the first few years of life (American Psychiatric Association, 2013). One deficit seen in individuals with ASD is poor emotion identification when viewing emotional faces, and this deficit persists throughout the lifetime (Lozier, Vanmeter, & Marsh, 2014). The most common explanation for this deficit relates to facial processing. A recent study related eye fixation time to emotion identification, and found that less time spent fixating on the eyes when examining emotional faces was correlated with poor emotion identification in children with autism (Kirchner et al., 2011). In this study, we hypothesize that children who meet the criteria for ASD on the CBCL-ASD profile will exhibit a lower percentage of total fixations on the eye region compared to children who do not meet the profile when viewing emotional faces. We also hypothesized that a lower percentage of total fixations on the eye region will be negatively correlated with accurate emotion identification.

Methods
Children were classified as autistic or non-autistic using a single parental report measure, the Child Behavioral Checklist (CBCL). Fixations were measured using an eye-tracking device while subjects viewed images of emotional faces and identified the emotions portrayed.

Results
While we found a trend-level significant difference in fixations in the eye region between the two groups, it was the result of age and not ASD status. A correlation analysis revealed a significant relationship between fixations in the eye region of faces and accurate emotion identification.

Conclusion
Although our hypothesis about fixation counts in the eye region differing between the ASD-profile and non ASD-profile children was not supported, these data did confirm that fixation count is significantly related to emotion identification accuracy.