

“Oregon Animation Test for Social Reciprocity”

PI: Gareth Lahvis

Abstract

Autism Spectrum Disorders (ASD) feature deficits in social interaction, communication and repetitive interests. Drug and behavioral treatments for ASD are undergoing rapid development, yet our diagnostic tools are not suitable for efficacy assessment. The Autism-Diagnosis Observational Schedule (ADOS) is a clinical interview with the child and the gold standard for diagnosis. However, this test is subjective, course grained and costly, precluding repeated tests of the same child to assess treatment efficacy and large-scale control assessments of typically developing (TD) children. For these reasons, the ADOS can impede imaging and genetic research.

In light of these concerns, the Oregon Animation Test for Social Reciprocity (OATS) will be developed to evaluate distinct autistic behavioral phenotypes, including joint attention, empathy, imitation, and lack of narrative coherence. The main idea of OATS is that animated characters and social scenarios are presented on a computer screen while the responses of the child are recorded by video camera, microphone, and eye-tracking equipment. Animations are used to test each behavioral phenotype of autism. The long-term vision for OATS is to evaluate behavioral and physiological responses of autistic children, including heart rate variability, pupil dilation, and EEG. Our first objective is to use existing animations to build an OATS "Prototype" that discriminates autistic from normal children (Aim 1). From these results, and use of a defined library of still frame posed images, we will design our own animation platform to assess differences between autistic and normal children (Aim 2).