

LEARNING TYPES DURING INTERPRETATION BIAS TRAINING TO TREAT IRRITABILITY. TH Trujillo (MD, SOM), J Stoddard, SP Haller, MA Brotman, M Jones, Children's Hospital Colorado, Anschutz Medical Campus.

A potential treatment target for chronic irritability is hostile interpretation bias, a tendency to interpret ambiguous stimuli as threatening, which may be targeted and changed via a computer-based interpretation bias training (IBT). The goal of this study was to apply a principled, model-based analysis of categorical learning to identify learning types during IBT. A session of IBT learning was assessed in 63 transdiagnostic youth with irritability and anxiety. Participants judge a continuum of facial expressions and train in IBT towards less angry and more happy judgments of ambiguous faces. A computational model of categorical learning, ALCOVE, was applied to each person's training data. We assessed two model parameters: 1) learning rate with higher values representing a greater speed at which individuals change their associations to faces, and 2) generalization with higher values reflecting a lower precision of applying feedback to a specific face on the morph continuum. We assessed associations with anxiety and irritability and then empirically assessed for types of learners. In multivariate linear modeling, individuals with higher generalization tended towards anxiety ( $b=1.7$  (0.9),  $p=.05$ ) and were younger ( $b=-0.5$  (0.2),  $p=0.02$ ). Learning rate was reduced with both anxiety and irritability ( $b=-0.11$  (0.04),  $p=0.01$ ). Generalized mixture modeling identified two learning types, those with very high generalization and those with lower generalization. Younger individuals were more likely to be in the high generalization group (Cohen's  $d=0.66$ ,  $p=0.01$ ). The model-based analysis empirically detected distinctive pathology and age associated learning styles. Understanding learning will improve the ability to identify learning types, improving precise prescription of IBT.