

## Introduction

## Methods

## Discussion

### Background

Children with autism spectrum disorders (ASD), attention-deficit/hyperactivity disorder (ADHD), specific learning disability (SLD), and co-morbid anxiety, have been shown to have difficulty with social functioning (Caillies et al., 2014; Verduin & Kendall, 2008). Research indicates that social functioning is positively correlated with social cognition, suggesting that difficulty with social functioning is related to social cognitive impairment (Bishop-Fitzpatrick et al., 2017). Social cognition refers to the cognitive abilities needed to process and interpret social-emotional information in oneself and in others (Penn et al., 1997). Children who are gifted and have a diagnosis or disability are considered to be twice exceptional. These gifted children also have the same impairments as children with disorders who are not gifted (Foley-Nicpon & Assouline, 2015). Therefore, twice-exceptional children who have diagnoses that often display social functioning difficulties may have impaired social cognition. The presentation of twice-exceptional children is heterogenous; strengths may mask disabilities and disabilities may mask strengths (Reis et al., 2014). There is little research available for this twice exceptional population.

### Participants

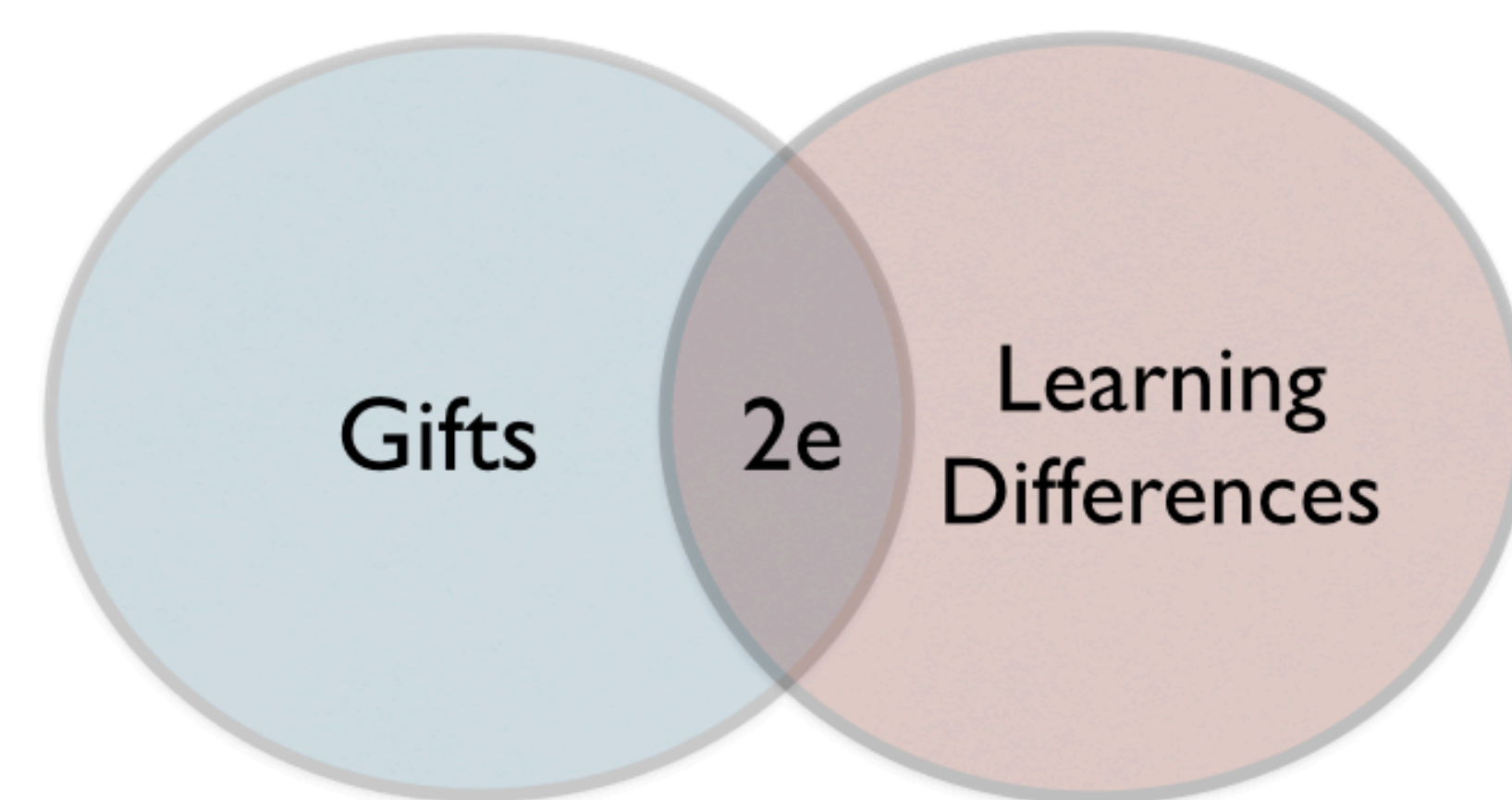
**Child A:** 10-year-old male diagnosed with ADHD

**Child B:** 9-year-old male diagnosed with ADHD, social pragmatic communication disorder, SLD with an impairment in spelling and reading decoding, fluency, and comprehension

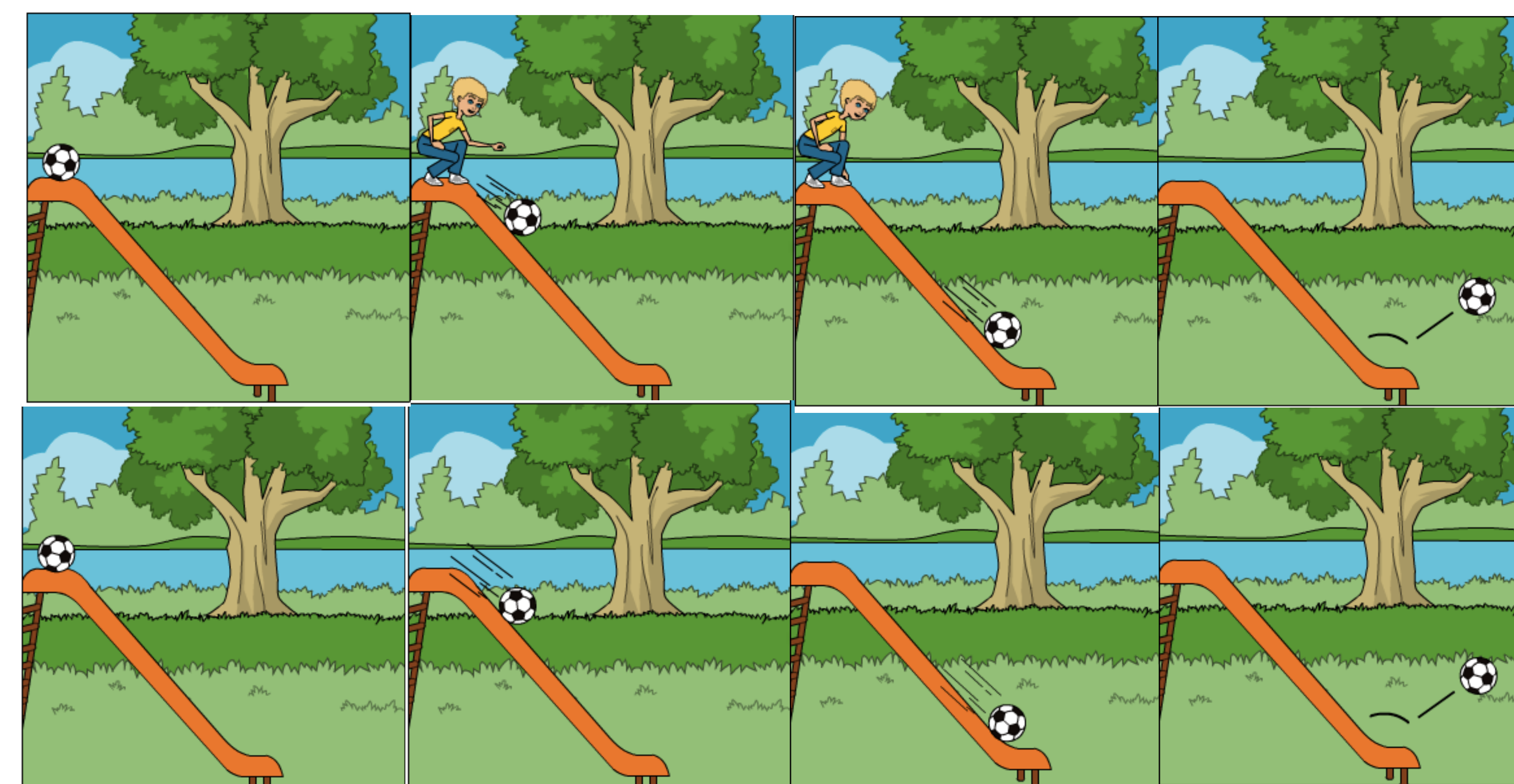
### Procedure

Participants completed two social cognition tasks: a novel picture sequencing task and the child version of the RMET. The picture sequencing task is comprised of six total sequences, three of which are paired where one excludes social information and the other includes social information. The picture sequences are also created to assess three different types of understanding: mechanical, behavioral and intentional. There are two sets of the sequencing task (Set A and Set B).

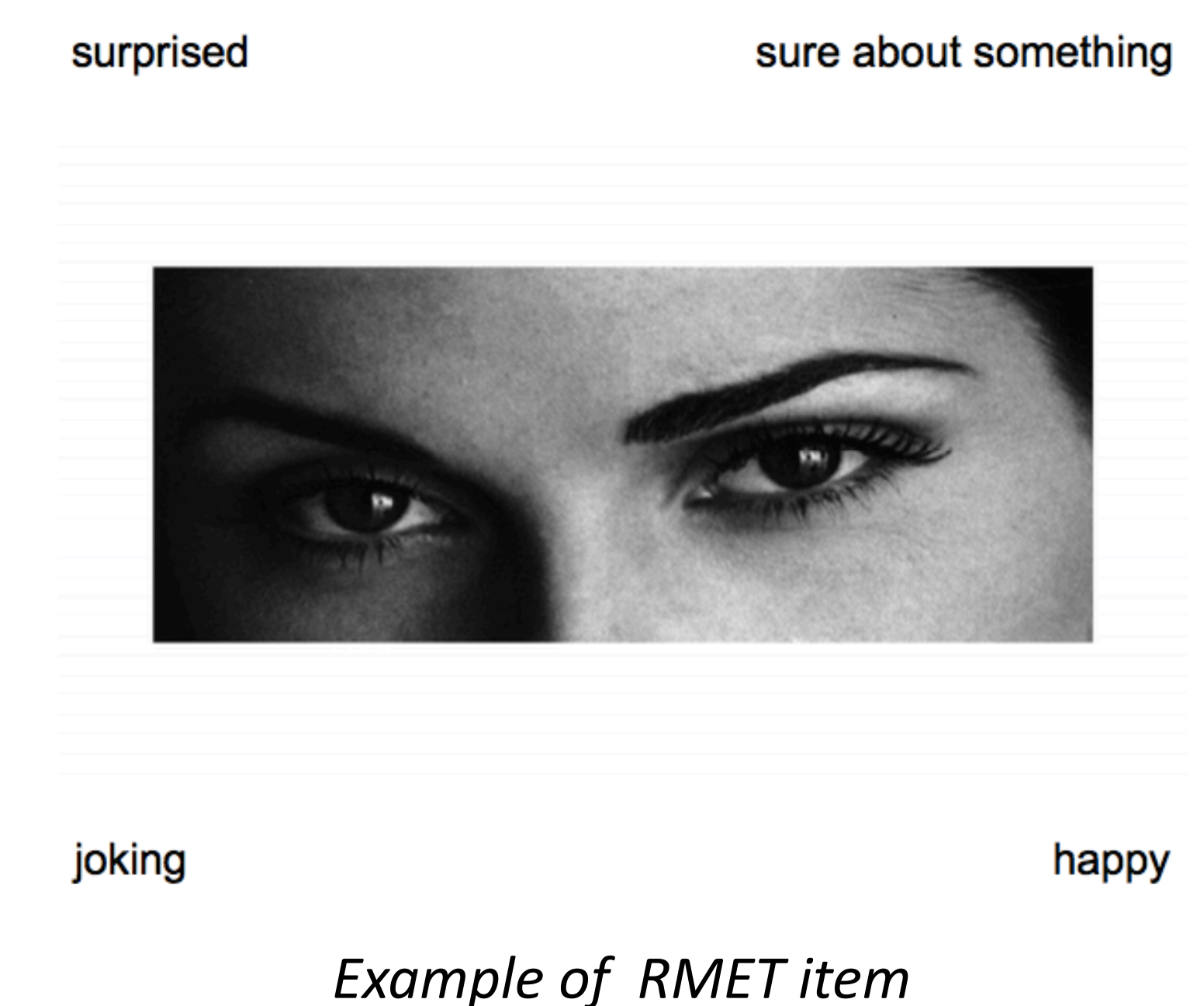
- No evidence for social cognitive deficits based on performance on the picture sequencing task
- Results could possibly be attributed to simplicity of novel task or twice-exceptional profile
- On the Eyes Test, both Child A and B responded correctly on more items than the average of the original ASD group. Child A responded incorrectly more frequently compared to the average of the original TD group. Child B responded correctly more than the average of the TD group.



Baron-Cohen and Frith's (1986) study examined social cognition through a picture sequencing task. Within this study, there was a focus of completion and narration of three different types of understanding: mechanical, behavioral, and intentional. They found that children with ASD performed better on sequences with mechanical understanding, but experience a deficit in understanding the intentional states of others, which is indicative of social skill deficits (Baron-Cohen & Frith, 1986).



Example of mechanical picture sequence, social and non-social sequences



Example of RMET item

### Aims

The focus of this preliminary presentation is a case study of two school-age twice exceptional students. As literature suggests, children with ASD, ADHD, and SLD may all experience social cognitive deficits. Performance on two tasks aimed to examine social cognition are highlighted. Participants completed a novel picture sequencing task based on Baron-Cohen & Frith's (1986) study and the child version of the "Reading the Mind in the Eyes" Test (RMET).

### Hypotheses

- Expected performance on the picture sequencing task is incorrect placement of sequences that include social information, and correct placement on sequences that are non-social for the behavioral and intentional pairs and correct placement on the mechanical sequences.
- For the Eyes Test, scoring 9 or more is considered to be above chance. The original study of the child version of the RMET showed that males with ASD answered correctly on an average of 12 out of 28 times and typically developing males between 8-10 years old answered correctly 18 out of 28 times (Baron-Cohen et al., 2001). In respect to the present study, since children with ADHD, SLD, and comorbid anxiety are also shown to have impairments in social functioning, it is thought that this will impact responses on the RMET.

- One parent and teacher of each child were asked to complete two online measures (Child Behavior Checklist and Autism Treatment Evaluation)
- The RMET includes 28 pictures of Eyes with four emotion words placed randomly around the image.
- Order of the tasks were randomly assigned, set of sequencing task was randomly assigned, and picture order was randomized.

## Results

### Child A

Picture sequencing task: Correct completion on all three sequences  
Eyes Test: 15/28 correct

### Child B

Picture sequencing task: Correct completion on all three sequences  
Eyes Test: 20/28 correct

- ### Limitations
- Preliminary case study, only two participants are examined
  - Both participants are twice-exceptional with a diagnosis of ADHD, helpful to examine individual differences with others with other diagnoses

### Future Directions

- Run the study with a TD group and compare findings
- This study has possible implications for furthering the understanding of how twice-exceptional gifts and disabilities present

## References

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