# Looking beyond the shapes
## Intact animacy perception during chase detection in adolescents with ASD

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# INTRODUCTION

### BACKGROUND

Individuals with Autism Spectrum Disorder (ASD) interpret social cues differently compared to Typically Developing (TD) individuals (Rutherford et al., 2006; Vanmarcke et al., 2015)

TD individuals make implicit social inferences during a dynamic chase detection task consisting of geometrical stimuli, suggesting intact animacy perception, i.e. objects interacting in social relationships, in TD individuals (Gao et al., 2009)

### OBJECTIVES CURRENT STUDY

- Replicating finding of Gao and colleagues (2009) that chasing subtlety influences performance on chase detection in TD adolescents
- Extending this finding to adolescents with and without ASD, and investigating whether a social or non-social cue can improve performance

# METHODS

### PARTICIPANTS

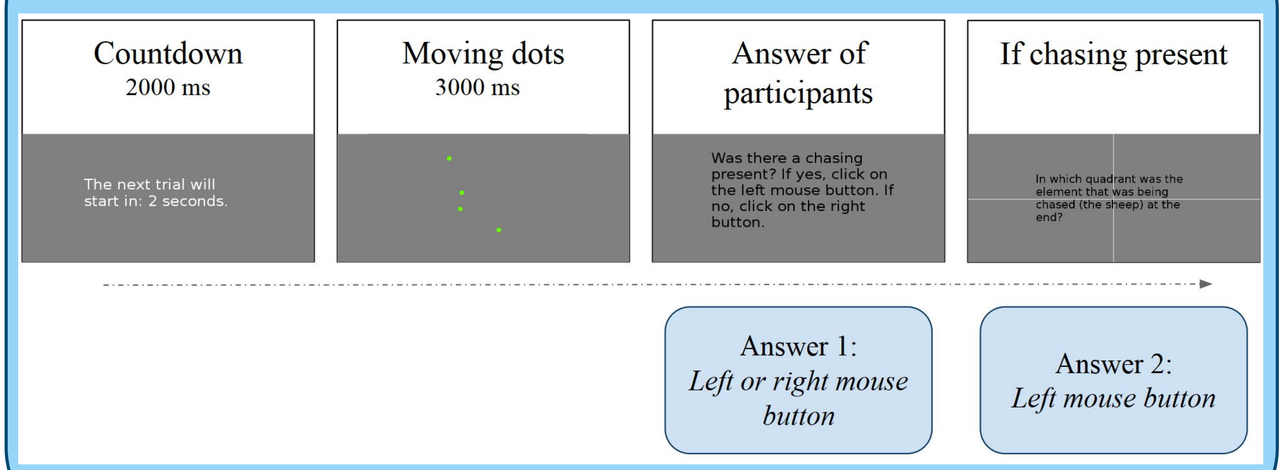
24 adolescents per group, matched on age, gender and IQ

Mean age: 14.08 (ASD) and 14.33 (TD)

### PROCEDURE

- 3 conditions: baseline, social, frequency
- 3 chasing subtleties: 15º, 45º, 75º
- Counterbalanced, within-subjects manner
- 18 practice trials with visual feedback
- 225 experimental trials

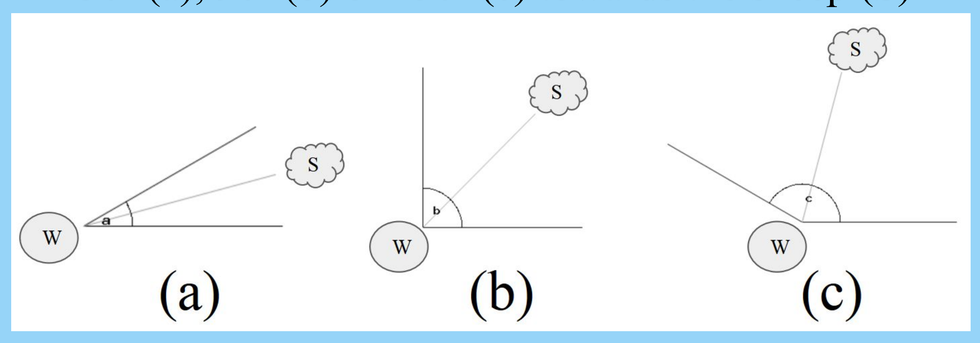
# DESIGN




# STIMULI

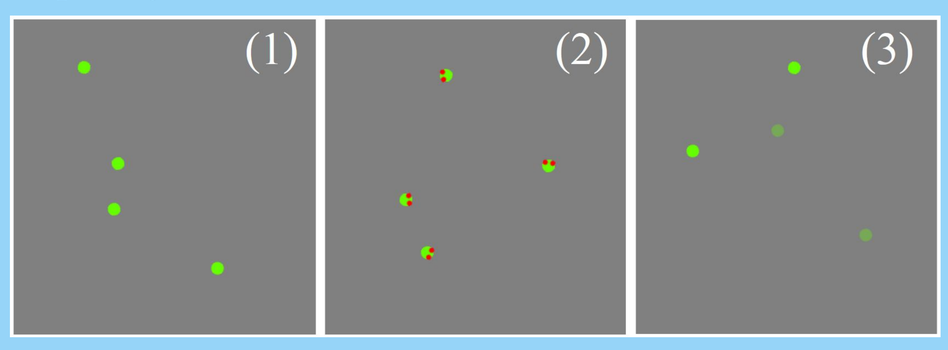
### Chasing subtlety

Wolf (W) can move within a window of 30º (a), 90º (b) or 150º (c) towards the sheep (S)

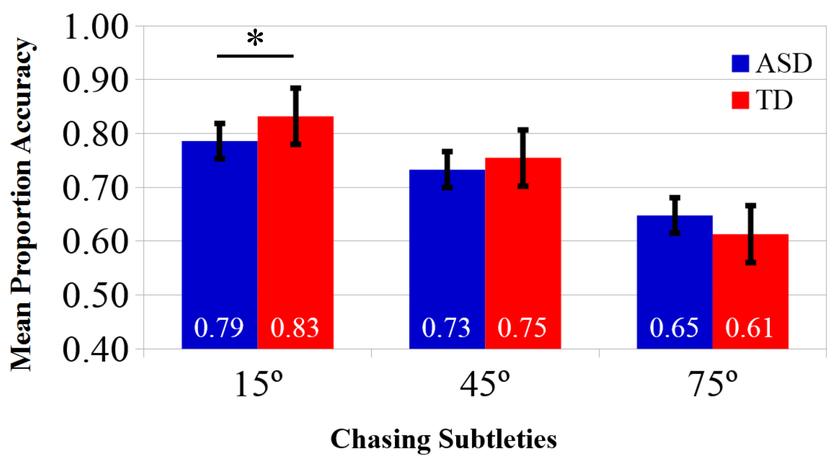



### Conditions

(1) Baseline condition: manipulation of chasing subtlety
(2) Social condition: social cue added to baseline dots
(3) Frequency condition: non-social cue added to baseline dots



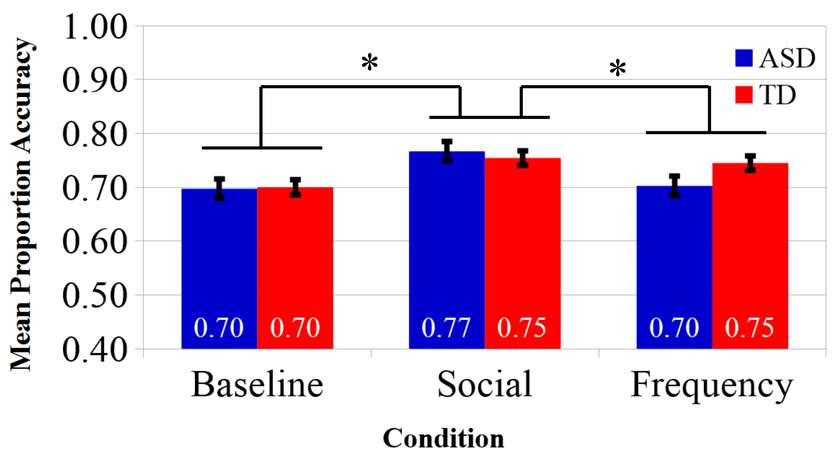

# RESULTS




1. Main effect of **Condition**
*Social cue improved performance compared to other conditions*

2. Main effect of **Chasing Subtlety**
*Decrease in performance for higher chasing subltety*

3. **Interaction** effect between Chasing Subtlety and Group
*ASD worse for 15º, but less affected by higher Chasing Subtlety*




# CONCLUSION & FUTURE RESEARCH

- Successful replication of previous findings, i.e. chasing subtlety indeed triggers animacy perception
- Animacy perception in adolescents with ASD is intact
- Adolescents with ASD less influenced by higher chasing subtleties
- No strong differences between adolescents with and without ASD

➡ Target neuronal mechanisms
➡ Include both irrelevant and informative chase dectection cues, with varying reliabilities

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