



Lie-Telling, Theory of Mind, and Verbal Ability in Children with ASD

Annie S. Li^{1*}, Elizabeth A. Kelley¹, Angela D. Evans², Kang Lee²

¹Department of Psychology, Queen's University, Canada

²Institute of Child Study, University of Toronto, Canada



Introduction

- Lie-telling reflects real-world applications of children's theory of mind
- Previous studies found that antisocial lie-telling behaviours are related to performance on false belief tasks in typically developing (TD) children (Polak & Harris, 1999; Talwar, Gordon, & Lee, 2007)
- Though many studies have demonstrated that individuals with ASD have a deficit in theory of mind (ToM), researchers have just begun to examine lie-telling behaviours in children with ASD
- Past research did not consider the possible contribution of verbal ability to the relation between ToM and lie-telling despite the well-established relation between ToM and language ability in both children with ASD and TD children (Fisher, Happé, & Dunn, 2005; Milligan, Astington, & Dack, 2007)
- Current study examines the interrelations among children's antisocial and prosocial lie-telling behaviours, ToM, and verbal mental age (VMA)

Research Questions

- How are lie-telling behaviours, ToM understanding, and VMA interrelated in children with ASD?
- Does the relation between antisocial lie-telling behaviours and ToM understanding in TD children remain after controlling for VMA?
- Is ToM understanding or VMA related to prosocial lie-telling behaviour?

Method

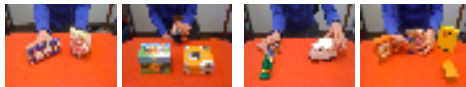
Participants

- 15 children with ASD (3 females; CA: $M = 8.01$, $SD = 1.39$; VMA: $M = 6.79$, $SD = 1.91$)
- 28 TD children (7 females; CA: $M = 7.15$, $SD = .69$; VMA: $M = 7.29$, $SD = .95$)
- ASD group is significantly older than TD group, $t(17.79) = 2.23$, $p = .04$
- No significant difference between groups on VMA, $t(17.81) = -.95$, $p = .36$

Materials

- Confirmation of diagnosis: *Autism Diagnostic Observation Schedule-Generic* (Lord, Rutter, DiLavore, & Risi, 2002)
- VMA: core language battery of the *Clinical Evaluation of Language Fundamentals—Fourth Edition* (Semei, Wiig, & Secord, 2003)
- ToM understanding:

First-order false belief tasks Second-order false belief tasks



Smarties (Gopnik & Astington, 1988) Maxi (Wimmer & Penner, 1983) Ice Cream Van (Penner & Wimmer, 1985) Chocolate Bar (Hogrefe, Wimmer, & Penner, 1986)

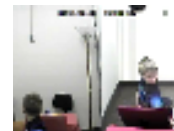
- Lie-telling behaviours:

Temptation Resistance Paradigm

E1: "I'm going to put a toy behind your back and play a sound. Without turning around and looking at the toy, I want you to guess what the toy is. Are you ready for the sound? **What do you think the toy is?**" Following 2 easy practice trials, E2 interrupts with a request and E1 has to leave the room. E1: "While I'm gone, don't turn around to look at the toy." E1 leaves the room for 1 minute. E1 asks the antisocial lie question: "Did you turn around to look at the toy while I was gone?" To examine children's ability to exercise semantic leakage control (SLC)—that is, maintain consistency between their initial lie and subsequent statements—E1 asks the SLC questions: "What do you think the toy is? Why do you think that?"



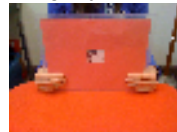
What do you think the toy is?



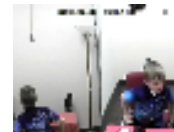
Did you turn around to look at the toy while I was gone?

Undesirable Gift Paradigm

In E1's absence, E2 shows the child 4 toys + a bar of soap from a basket. E2 asks, "Which one do you like the best? Which one don't you like?" in order to be sure the child does not like the bar of soap. When E1 enters the room, E2 quickly leaves. E1: "I'm going to show you a part of a picture and I want you to guess what the whole picture is. If you get 5 correct, I'll give you a prize from that basket. **What do you think this is a picture of?**" When the child is about to win the game, E2 interrupts again and E1 has to leave the room. E1: "Wow you got 5 correct! I forgot to ask **E2 what you like so I'm going to give you this as your prize. Open it up while I'm gone.**" E1 gives the child a wrapped bar of soap and leaves the room for 1 minute. E1 asks the prosocial lie question: "Do you like the prize that I gave you?"



What do you think this is a picture of?



Do you like the prize that I gave you?

Contact Information
6asm@queensu.ca

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Results and Discussion

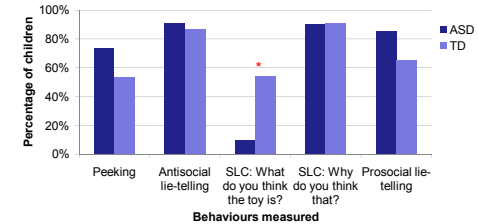


Figure 1. Percentage of children who peeked, told an antisocial lie; exercised SLC when asked what they think the toy is, $\chi^2(1) = 4.79$, $p = .03$; exercised SLC when asked why they think that; and told a prosocial lie in each group.

| | ToM understanding | | | |
|------------------------|--------------------------|------|---------------------------|------|
| | First-order false belief | | Second-order false belief | |
| | ASD | TD | ASD | TD |
| Antisocial lie-telling | .32 | -.30 | .17 | -.20 |
| SLC to what question | -.36 | .46 | -.31 | .70* |
| SLC to why question | .27 | .41 | .14 | .53* |
| Overall SLC | .12 | .46 | -.21 | .63* |
| Prosocial lie-telling | .26 | .34 | .21 | .09 |

* $p < .05$, $\dagger < .10$

Table 1. Correlations between lie-telling behaviours and ToM understanding with VMA controlled for.

- High-functioning children with ASD have little difficulty telling antisocial lies and prosocial lies
- In children with ASD, lie-telling behaviours are not significantly related to ToM understanding or VMA
- In TD children, SLC is related to second-order ToM understanding, even when controlling for VMA
- Children with ASD may be using different processes than TD children when deciding how to deceive others
- Children's ability and propensity to tell prosocial lies may depend on factors other than those examined in this study

Acknowledgments

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