People with Autism: Lineup Identification and Facial Recognition Memory

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Introduction

- People with Autism Spectrum Disorder (ASD) are often highly vulnerable, and may become victims of crimes. This emphasizes the importance of understanding how people with ASD interact with criminal investigations.
- Studies have investigated links between autism spectrum (AS) traits in typically developing (TD) persons and lineup performance (Jones, Scullin, & Meissner, 2011; Andersen, Carlson, Carlson, & Gronlund, 2014). These found relationships between the AS traits of attention-switching and attention to detail and response bias and ID rates on lineups.
- Furthermore, people with ASD have general facial recognition deficits compared to TD individuals (Weigelt, Koldewyn, & Kanwisher, 2012).
- The present study aimed to examine the performance of both individuals with ASD and TD individuals on lineup identification and facial recognition memory tasks adapted from Baldassari (2014). The AS traits of both groups were measured using three personality inventories.

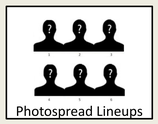
Methods & Materials

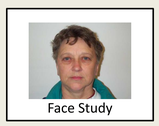
- In this study, 219 TD individuals and 14 ASD individuals completed a face recognition test, an eyewitness photospread identification task, and three measures of AS-related traits: the Autism Spectrum Quotient (AQ; Baron-Cohen et al., 2001), the Multidimensional Social Competence Scale (MSCS; Yager & Iarocci, 2013), and the Liebowitz Social Anxiety Scale (LSAS; Fresco et al., 2001).
- In the face recognition test, participants first viewed 50 photos of faces presented one at a time on a computer screen; later they were shown pairs of faces and they judged whether either face was presented in the study phase (chance = .33). Images were obtained from Minear & Park (2004).
- In the lineup task, participants first viewed 5 brief crime videos and then took a photospread lineup test for each crime. For 50% of subjects, each lineup included the culprit and five foils (Culprit Present, CP) and for other subjects each lineup consisted of six foils (Culprit Absent, CA).

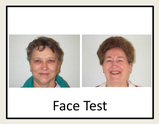

5 crime videos


3 AS measures

Image credit: Minear & Park (2004)

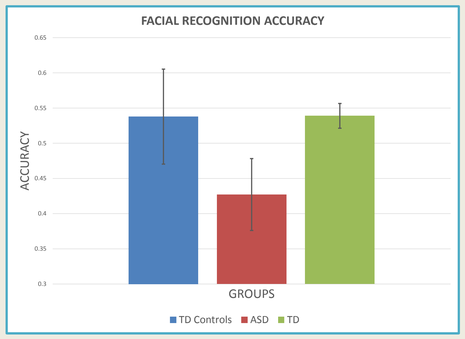

Photospread Lineups


Face Study


Face Test

Results

- Facial recognition accuracy was significantly lower for participants with ASD (M = .43, SD = .09) than TD controls (M = .54, SD = .12), p <.01.
- Correlations were detected between social competence (as measured on the MSCS and AQ, including subscales and domains) and accuracy on the face test and lineups. Correlations with the MSCS were positive while correlations with the AQ were negative.



- Participants with ASD (M = 27.43, SD = 9.13) had significantly higher AQ scores compared to TD controls (M = 16.50, SD = 4.50), p = .001.
- Participants with ASD (M = 252, SD = 39) had significantly lower MSCS scores than TD controls (M = 298, SD = 16), p = .001.

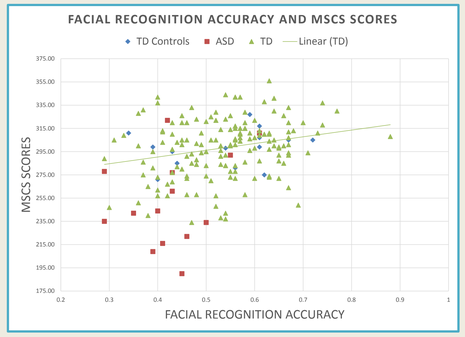
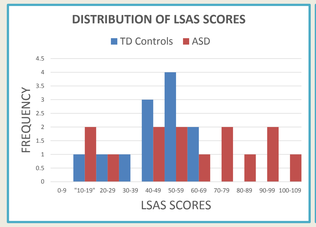
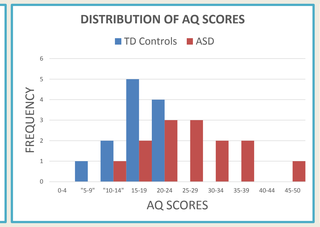
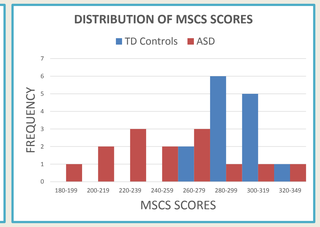


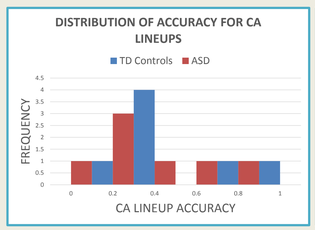
Table 1. Selected Correlations

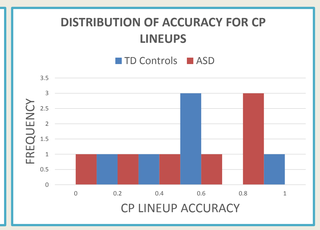
CA Lineup Acc. (M = .39, SD = .25)	MSCS Scores (M = 295, SD = 27)	r = .21, p = .05, n = 90
CP Lineup Acc. (M = .49, SD = .24)	MSCS Scores (M = 295, SD = 27)	r = .06, p > .05, n = 103
Face Test Accuracy (M = .52, SD = .12)	MSCS Scores (M = 295, SD = 27)	r = .25, p < .001, n = 193
Face Test Accuracy (M = .52, SD = .12)	AQ Social Skills Scores (M = 2.49, SD = 2.24)	r = -.16, p = .03, n = 195
Face Test Accuracy (M = .52, SD = .12)	AQ Scores (M = 17.7, SD = 6.26)	r = -.12, p > .05, n = 194











Discussion

- While previous studies identified relationships between attention-switching and attention to detail on measures of AS traits and response bias and response IDs in lineups, the present study found correlations between lineup and facial recognition accuracy and measures of social competence.
- Directionally, it appears that higher social competence was associated with superior performance on the lineup and facial recognition tests. Higher MSCS scores indicate greater social competence, while lower AQ scores indicate the absence of AS traits such as impaired social competence.
- The causal direction of this relationship is unclear, and it could be a topic for future investigation.
- Interestingly, the relationship between MSCS scores and lineup performance was only present in the CA condition. CP accuracy was not related to social competence.
- There were significant differences between participants with ASD and TD controls in average scores on the MSCS and the AQ, but distributions of the observed scores show considerable overlap between groups. This confirms that none of the measures should be conceived of as a diagnostic tool.
- Although differences in facial recognition accuracy were observed between ASD and TD participants, no significant difference was found in the lineup task, and the magnitude of the difference in the facial recognition task was fairly small. Given that persons with ASDs are extremely vulnerable to violent crimes, it is important to emphasize that AS-related impairments in facial recognition abilities do not appear to impact lineup performance to a meaningful degree.

References

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