

Introduction

- Typically developing individuals with anxiety exhibit physiological changes in response to direct eye contact but do not avoid gaze (Wieser, Pauli, Alpers, & Mühlberger, 2009).
- Since individuals with autism spectrum disorder (ASD) often have difficulty with social skills (Maddox & White, 2015), it raises the question as to whether anxiety influences their gazes differently in social situations.

Purpose

This study seeks to understand variability in how social anxiety presents itself by looking at how gaze patterns in autistic adults differ from those of neurotypical individuals in a simulated social situation.

Methods

Participants: 36 adults (15 ASD, 21 neurotypical).

Measures: Social anxiety was measured using the Liebowitz Social Anxiety Scale (LSAS), which is a self-report measure of social phobia. Gaze was recorded using the Eyelink 1000 eye tracker and an image set with a group of faces. This study looked particularly at the delayed self-directed gaze conditions.

Analysis: Correlations among LSAS scores and looking times were explored. Correlations between the different groups were compared using Fisher's z .

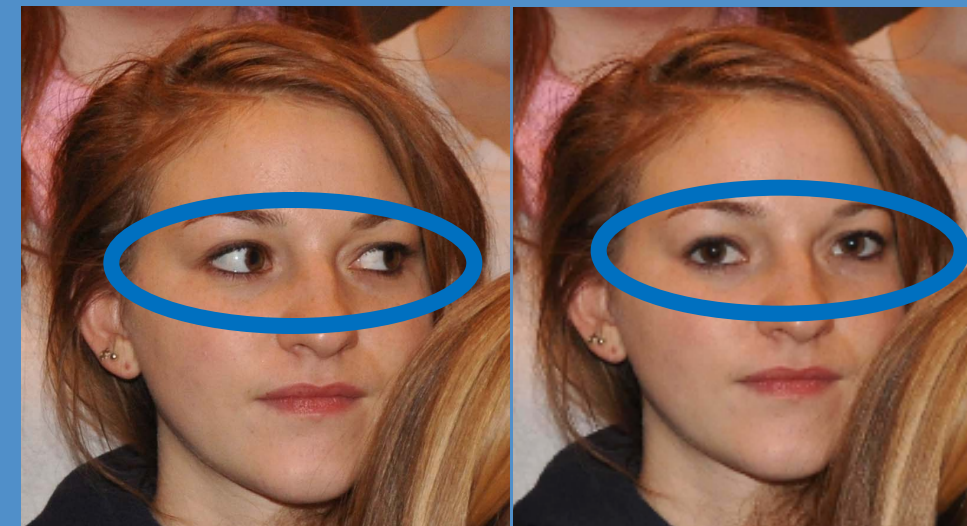


Figure 1. Example delayed self-directed gaze condition. Interest areas are marked in blue.



Figure 2. Example visual stimuli for the simulated social situation

anxiety	none	mild	moderate	severe
	0	1	2	3
avoidance	never (0%)	occasionally (1-33%)	often (34-67%)	usually (68-100%)
	anxiety		avoidance	
1	telephoning in public			
2	participating in small groups			
3	eating in public places			

Figure 3. Sample questions from the LSAS

Results

Second Looking Time Only

- No significant correlation between levels of reported social anxiety and second fixation time in the “getting caught” paradigm ($r = -0.20, p = 0.124$).
- LSAS is correlated with the second looking time for participants with ASD ($r = -0.63, p = 0.006$).
- These results were not reflected in the neurotypical group ($r = 0.26, p = 0.128$).
- The difference in correlations between the two groups was statistically significant ($p = 0.004$).

Difference Between First and Second Looking Time

- No correlation was found between LSAS scores and the difference between first and second looking times ($r = 0.33, p = 0.096$).
- A significant correlation was found between LSAS and the difference in first and second looking times for the autistic adults ($r = -0.71, p = 0.01$).
- The same correlation was not found in the neurotypical group ($r = 0.33, p = 0.096$).
- The difference in correlations between the two groups was calculated as significant ($p = 0.0037$).

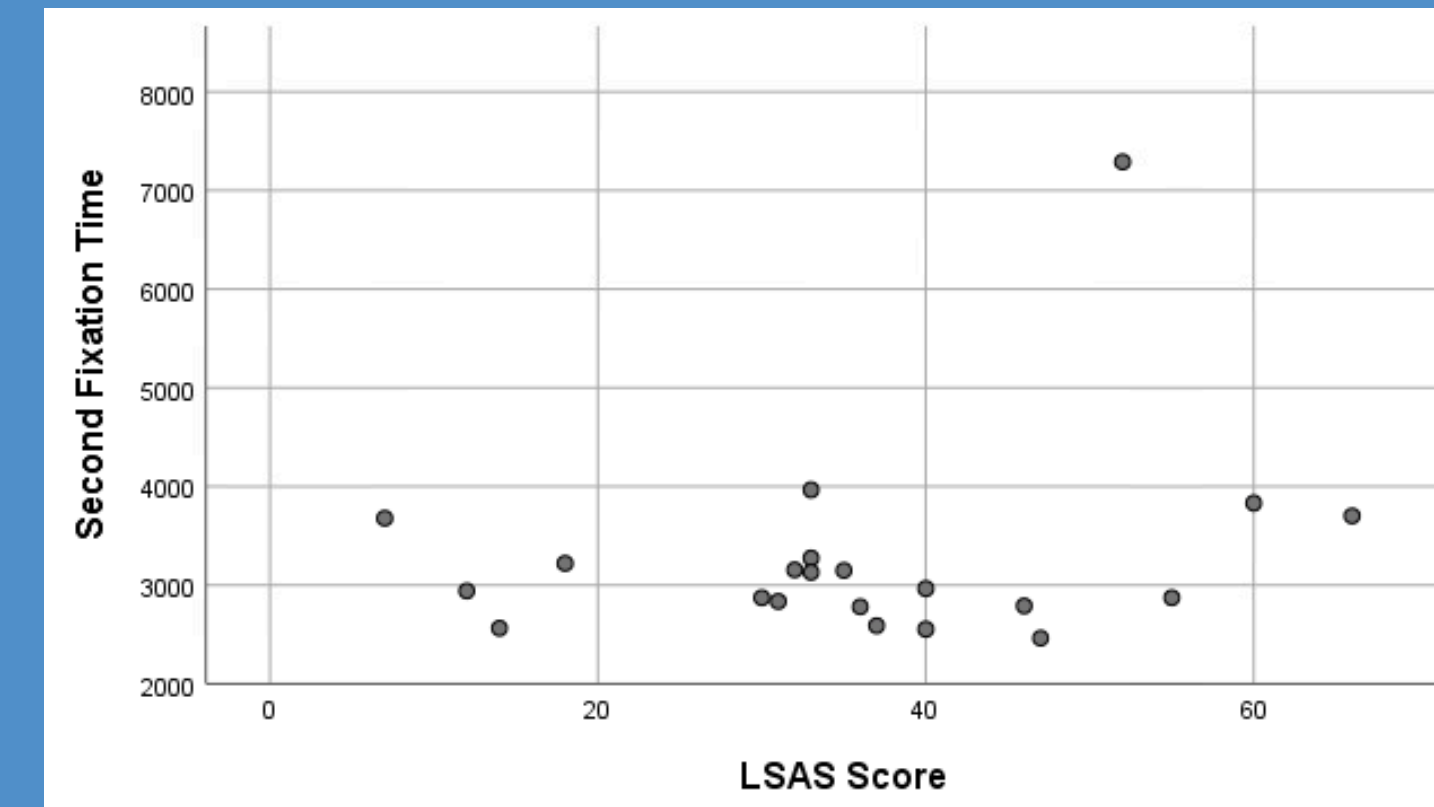


Figure 4. Correlation between LSAS score and second fixation time for neurotypical participants

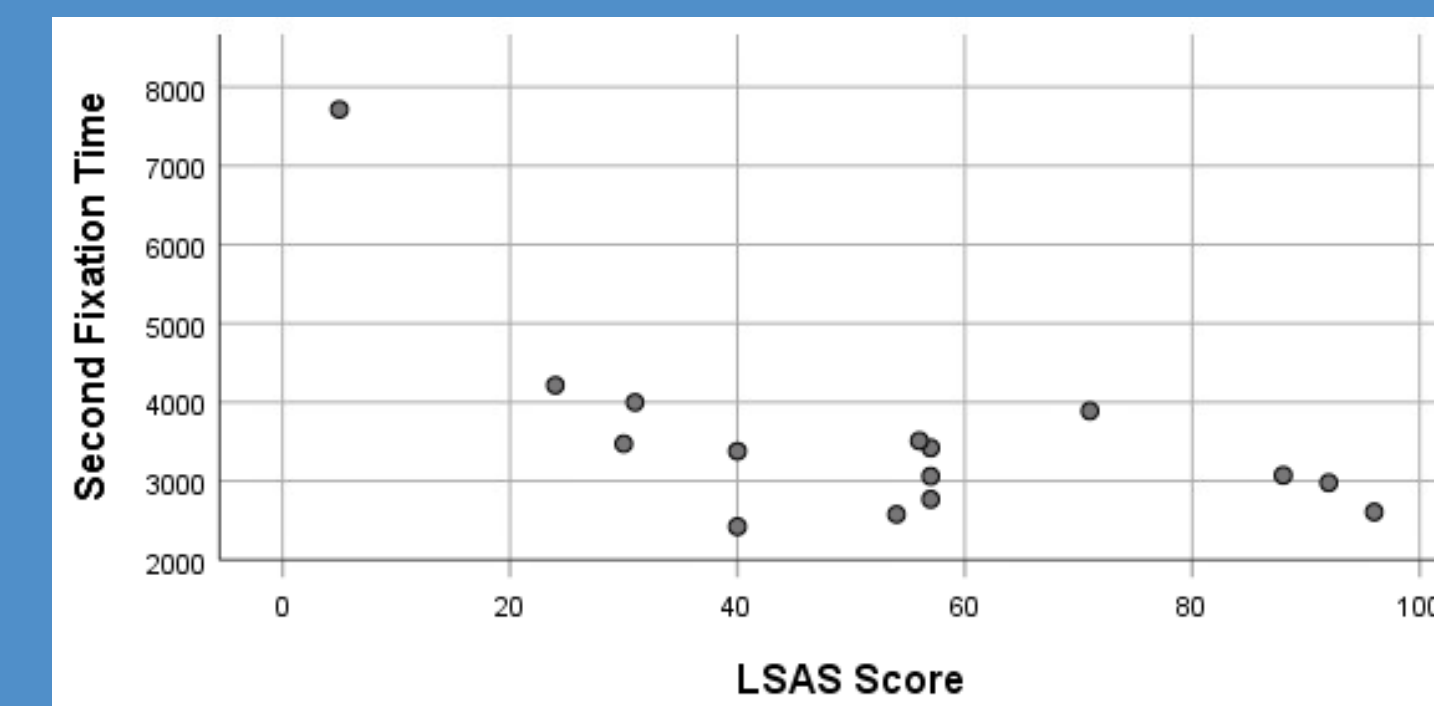


Figure 5. Correlation between LSAS score and second fixation time for autistic participants

Conclusions

This study provides evidence that social anxiety mediates gaze patterns in adults with ASD but not neurotypical individuals. Specifically, adults with ASD display significantly longer avoidance of eye contact with an individual who has caught them staring. Among the neurotypical participants, there was no significant correlation between LSAS and gaze.

Limitations

Because of the small sample size, further studies with a larger number of participants could obtain different results and achieve greater external validity.

Next Steps

Results suggest that social anxiety presents differently in ASD. This may indicate a need for new social anxiety testing measures specific to autistic individuals. Further research should look to address the potential need.

References

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