

# Socially Anxious Avoid Gaze, Don't They?



## The Effect of Gaze Camouflage and Social Anxiety on Attention and Autonomic Measures in Naturalistic Social Situations

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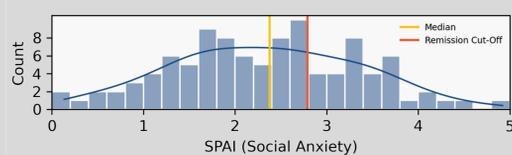


### 1 BACKGROUND

- Adaptive social approach and avoidance behavior is of substantial importance for social functioning. An imbalance in social approach and avoidance tendencies may constitute a risk factor for the etiology and maintenance of mental illness [1] such as social anxiety (SA).
- Previous studies have shown that SA is associated with differences in exploration behavior of social stimuli [2, 3], gaze avoidance [4, 5], as well as physiological reactions to social stimuli [6, 7].
- However, in natural social interactions, Rösler et al. [7] did not find correlations between SA and visual attention. The authors followed that the presence of another person induces norm-activating behavior which reduces the innate tendency of socially anxious people to avoid gaze.
- To reduce the pressure to adhere to social norms, we manipulated whether others were able to recognize the focus of visual attention using clear or shaded glasses [8].
- In this study, we investigated how trait SA and gaze camouflage influence gaze behavior, place preference, and autonomic responses (heart rate and skin conductance) using a naturalistic field-like experimental design.

### 2 METHODS

- Out of 500 pre-screened people, we recruited 104 participants to achieve a wide range of SA traits (mean age = 23.6 years,  $SD = 4.0$ ; 74.8 % female, 25.2 % male).



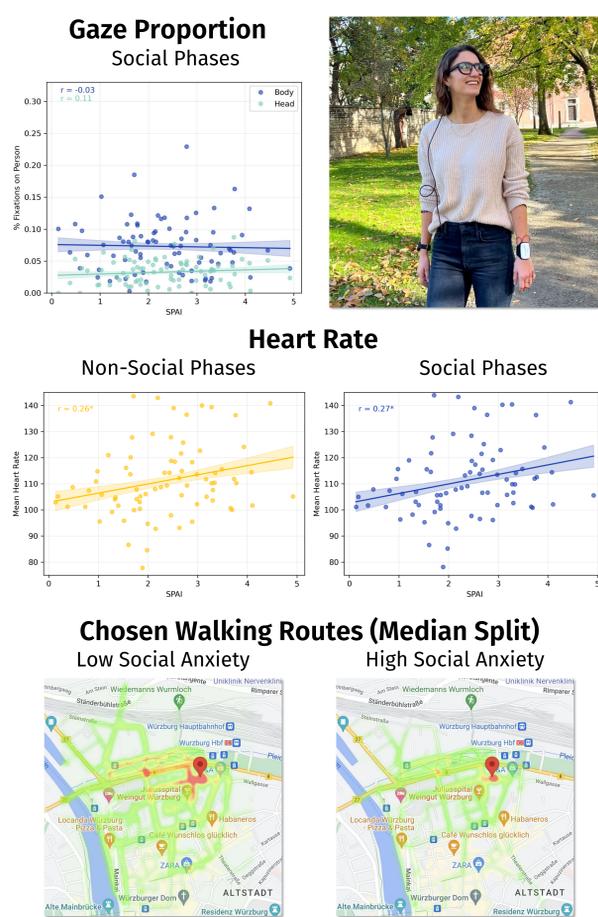
- 25 participants had to be excluded because of recording problems ( $n = 4$ ) or suspicion with our cover story ( $n_{ET} = 15$ ,  $n_{Conf} = 11$ ) resulting in a final sample size of  $N = 79$ .

- Study procedure:

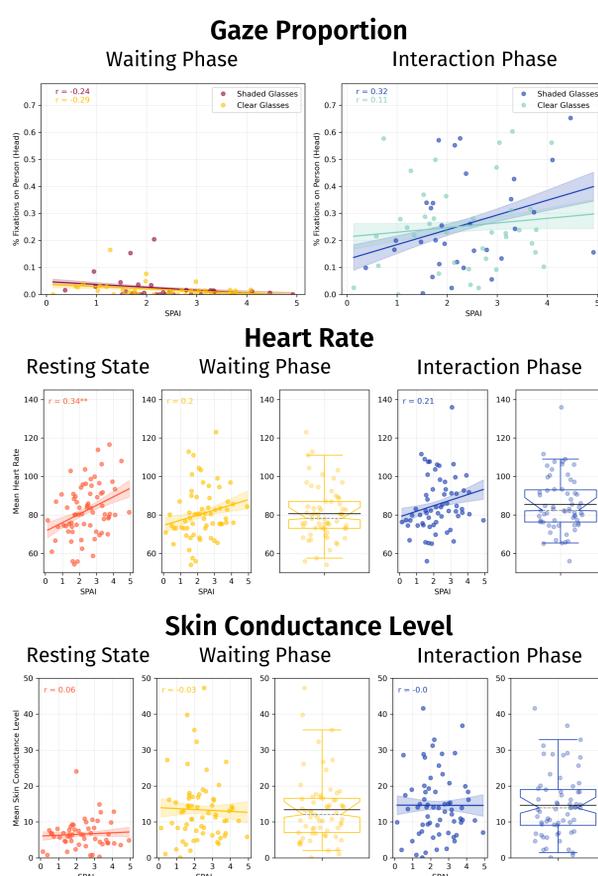


- Participants wore shaded or clear glasses (counterbalanced and matched on gender and SA pre-screening score).

### WALK



### INTERACTION



### 3 RESULTS & DISCUSSION

#### WALK

- During the walk, we only found an effect of the region of interest (passengers' head vs. body) on the gaze proportion,  $F(1, 84) = 79.19$ ,  $p < .001$ ,  $\eta_p^2 = .49$ . Independent of the SA, participants showed significantly more fixations on passengers' bodies than heads.
- Participants with higher SA had higher average heart rates during the walk,  $F(1, 74) = 5.80$ ,  $p = .019$ ,  $\eta_p^2 = .07$ . This effect was independent of the proximity to others.
- Descriptively, participants with higher SA seemed to show less exploration behavior.

#### INTERACTION

- During a staged social interaction, participants deployed more visual attention to their interaction partner during the interaction compared to the waiting phase,  $F(1, 67) = 332.52$ ,  $p < .001$ ,  $\eta_p^2 = .83$ .
- Especially participants with higher SA showed more fixations on the other person during the interaction phase,  $F(1, 67) = 8.03$ ,  $p = .006$ ,  $\eta_p^2 = .11$ .
- There was a significant positive correlation between SA and heart rate in the resting state ( $p = .004$ ), but not in the other phases.
- We only found a main effect of phase with the interaction phase leading to higher heart rates,  $F(1, 58) = 37.4$ ,  $p < .001$ ,  $\eta_p^2 = .39$ , and skin conductance levels,  $F(1, 56) = 11.26$ ,  $p = .001$ ,  $\eta_p^2 = .17$ .
- No other effects were significant.

### 4 CONCLUSION

- Based on these preliminary results, we conclude that gaze camouflage does not have a consistent effect on visual attention in naturalistic social situations.
- We found no gaze avoidance in socially anxious participants, but rather more looking towards an interaction partner.
- Overall, trait SA was positively associated with participants' heart rates.

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