

Klinikum rechts der Isar Technische Universität München



# Temporal Stability of Semantic Predictions in Subclinical Autistic and Schizotypal Traits



Studienstiftung des deutschen Volkes

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# Background

- Language impairments as core symptoms of Schizophrenia (SSD) and Autism Spectrum Disorder (ASD)
- Central role of semantic predictions in guiding effective language processing → Predictive Coding



- as explanatory framework
- Impairments in SSD and ASD during the formation process and during the integration with sensory evidence

#### **Research Question**

Is the temporal stability of semantic predictions altered in subclinical variants of ASD and SSD?



# **Results: Generalized Linear Mixed Models**

stable<sub>SPQ</sub> ~ sentence predictability<sub>(low, medium, high)</sub>\*SPQ\*sentence recall<sub>(hit, miss)</sub>
+ (1lsubject) + (1lsentence)

stable<sub>AQ</sub> ~ sentence predictability<sub>(low, medium, high)</sub>\*AQ\*sentence recall<sub>(hit, miss)</sub>
+ (1lsubject) + (1lsentence)



## **Discussion**

- Gradual influence of sentence predictability on temporal stability of semantic predictions
   → higher predictability → greater stability
- Gradual influence of sentence recall on temporal stability of semantic predictions

#### $\rightarrow$ poorer sentence recall $\rightarrow$ greater instability

 Increasing schizotypal and autistic traits associated with reduced temporal stability of semantic predictions in highly predictable contexts
 Effect could not be explained by impaired memory performance

### Conclusion

Individuals with subclinical variants of ASD and SSD struggle to form stable, lasting semantic predictions, especially in highly predictable contexts.

	INTERPRETER	
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