

# NOVEL STIMULI AND SELF-PRIORITISATION: AI GENERATED ART

Connor Malby<sup>1</sup>, Dr. James Strachan<sup>2</sup>, Dr. Merryn Constable<sup>1</sup>

<sup>1</sup>Northumbria University, <sup>2</sup>University Medical Centre Hamburg-Eppendorf



## Introduction

Self-prioritisation manifests in faster response times toward stimuli associated with oneself relative to those associated with another person (Sui et al., 2012). Experimental tasks typically use individual or small sets of familiar stimuli (e.g. pictures of one's own face or sets of geometric shapes). It is unclear if self-prioritisation can be found with a category of novel abstract stimuli. That is, stimuli that vary within the category rather than an exemplar stimulus.

### AIM

To investigate if self-prioritisation effects emerge for stimuli when the association with the self is made at a categorical level that applies to a broad range of unfamiliar stimuli.

### HYPOTHESIS


It was hypothesised that participants can form self-associations with abstract art concepts. Furthermore, there will be a generalisation of the self-prioritisation effect to previously unseen exemplars of the self-relevant art style at test phase, as indicated by faster reaction times and increased accuracy.

## Method

All images generated using DALLE-2 image generator.

**Participants**  
48 subjects (Mean Age = 21.6, SD = 2.55)

**Art Training (n = 100, minimum 90% accuracy)**



If the art style is Cubist press 'W'.  
If the art style is Expressionist press 'O'.

Feedback was provided on accuracy for each trial.

Participants were then randomly allocated to be associated with either the cubist or the expressionist paintings.

**Identity Mapping (n = 8, minimum 87.5% accuracy)**

Who does this style represent?

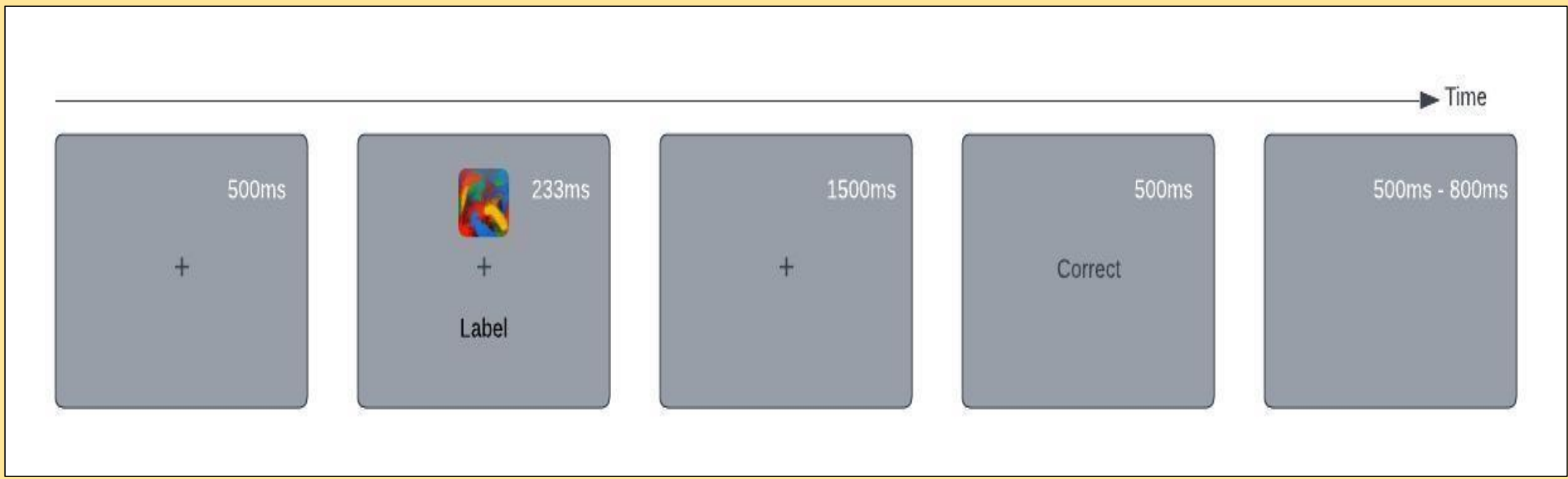
cubism

Yourself = 'Z'  
Stranger = 'M'

Participants needed to indicate which style matched the stranger and which style matched themselves.

This mapping check was performed to ensure participants had made the appropriate associations indicated.

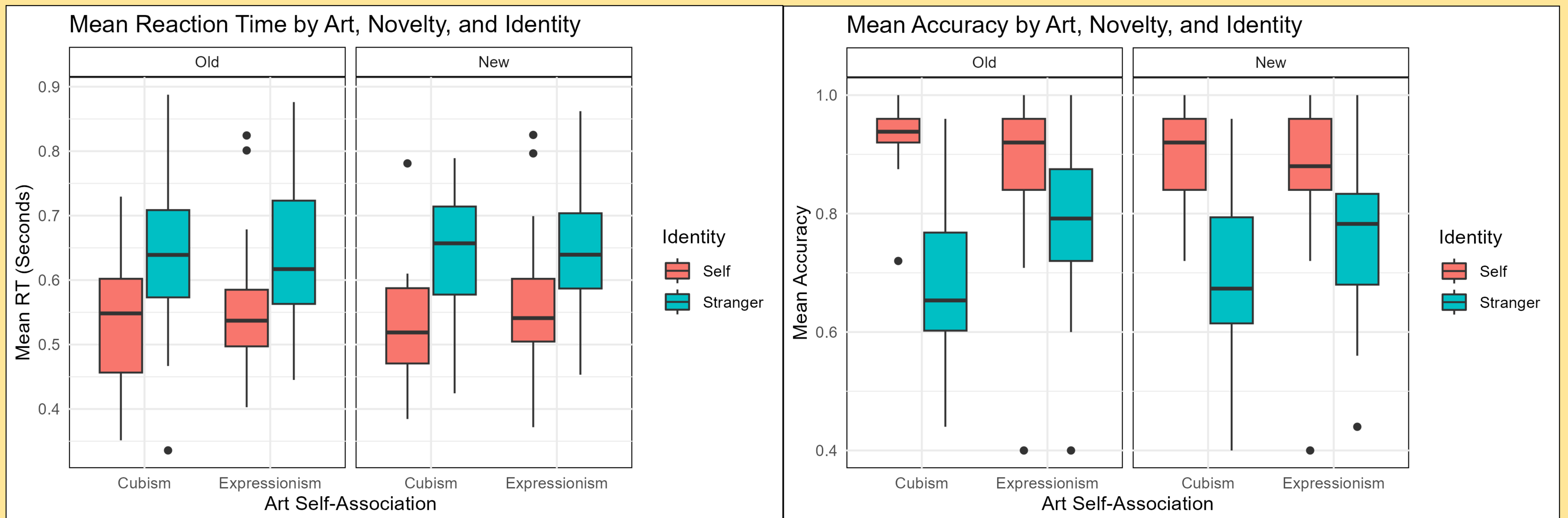
**Matching Task (n = 200)**



Participants were required to indicate if the art style (Cubism/Expressionism) and the label ('Yourself'/'Stranger') presented were congruent or incongruent based on previously indicated associations. Over 200 trials, participants had to achieve a 65% accuracy rating to be included in the final analysis. 23 participants were removed based on this criterion.

100 of the artworks presented were ones that were seen before in the Art training phase. 100 of the artworks presented were ones that had not been seen before.

## Results



## Discussion

Our findings indicate that self-associations can occur at the categorical level and can be applied to novel stimuli. This suggests that self-associations can be readily and rapidly applied to diverse new stimuli, and these stimuli can benefit from prioritized processing.

Art style did not significantly affect participant reaction times; however, accuracy rates were higher when participants associated themselves with Cubism. It is possible that this represents a preference effect, whereby self-prioritization is enhanced for positive stimuli (Constable et al., 2021). Alternatively, processing fluency and preference may interact with this effect (Constable et al., 2013).

## References

Constable, M. D., Bayliss, A. P., Tipper, S. P., & Kritikos, A. (2013). Self-generated cognitive fluency as an alternative route to preference formation. *Consciousness and Cognition*, 22(1), 47–52. <https://doi.org/10.1016/j.concog.2012.11.006>

Constable, M. D., Becker, M. L., Oh, Y.-I., & Knoblich, G. (2021). Affective compatibility with the self modulates the self-prioritisation effect. *Cognition and Emotion*, 35(2), 291–304. <https://doi.org/10.1080/02699931.2020.1839383>

NightCafe Studio. (2024). *NightCafe Creator*. Retrieved June 13, 2024, from <https://creator.nightcafe.studio/>

Sui, J., He, X., & Humphreys, G. W. (2012). Perceptual effects of social salience: Evidence from self-prioritization effects on perceptual matching. *Journal of Experimental Psychology: Human Perception and Performance*, 38(5), 1105–1117. <https://doi.org/10.1037/a0029792>