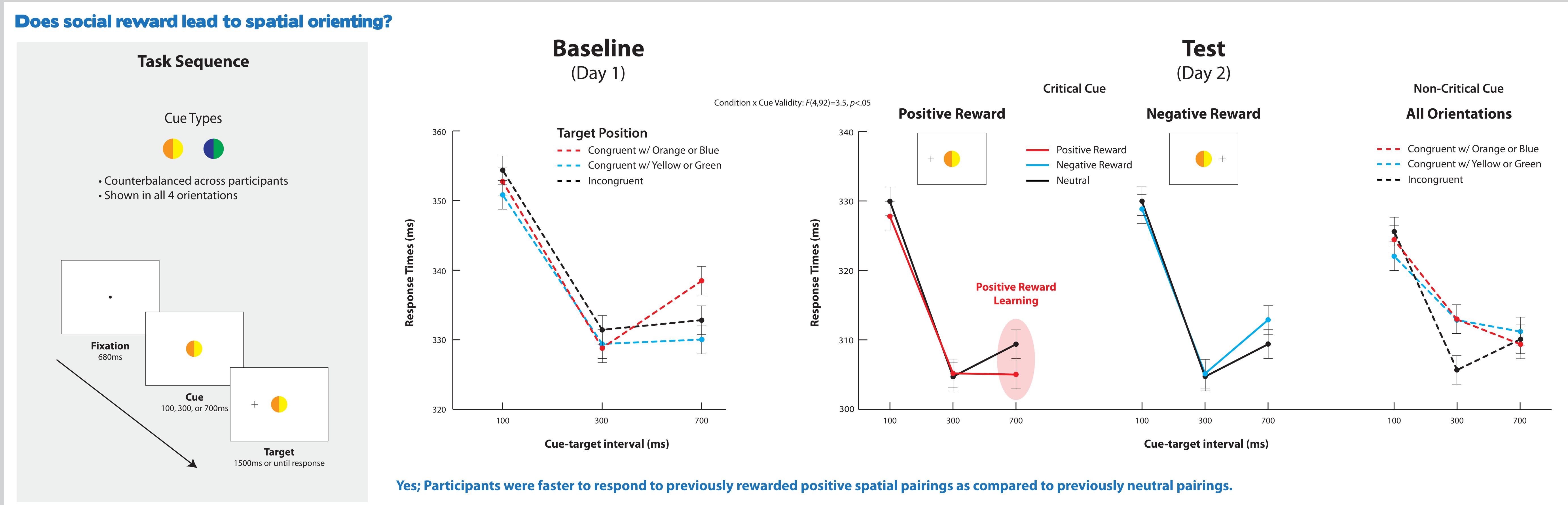
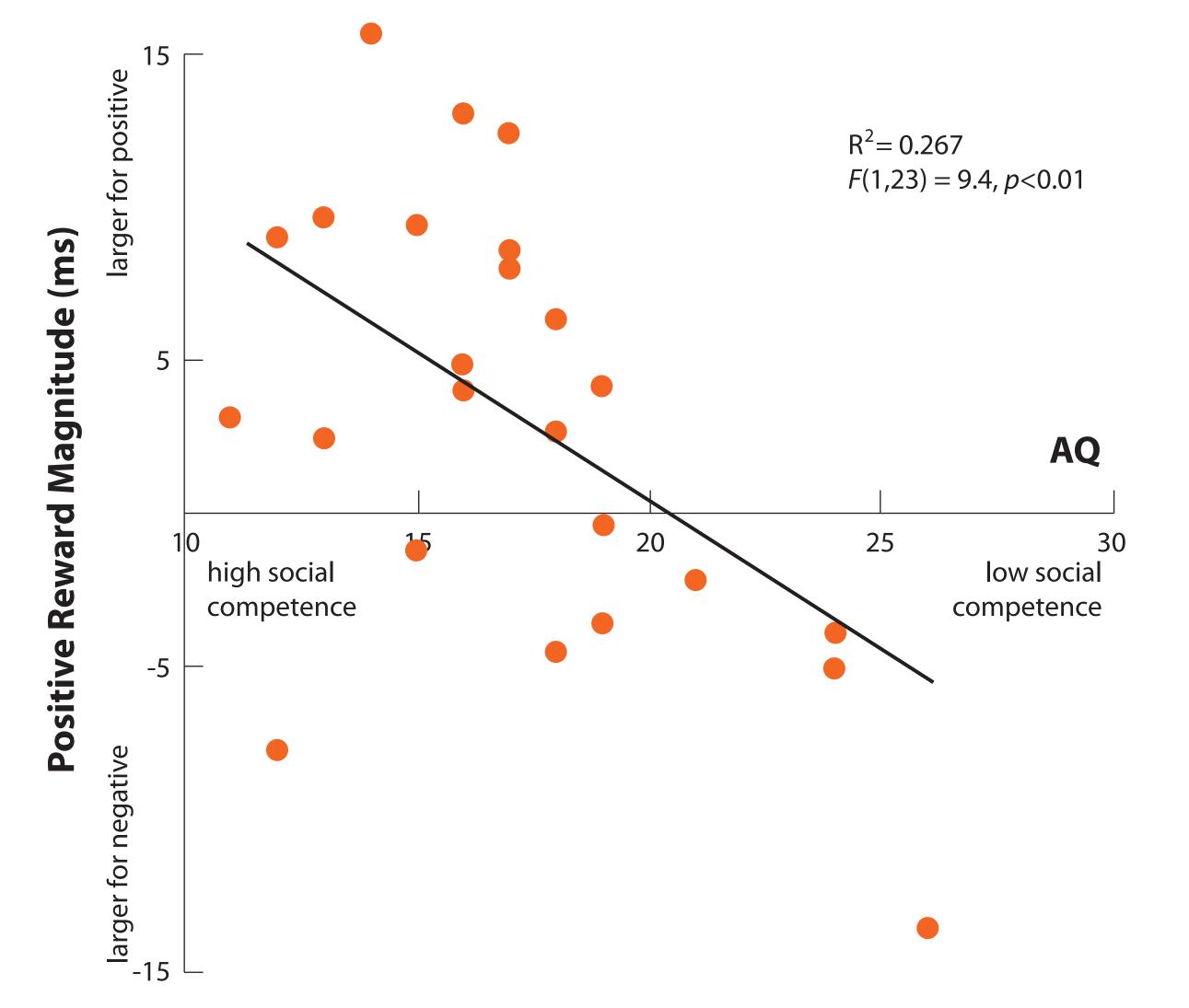


What's that smile worth? Social reward influences spatial orienting



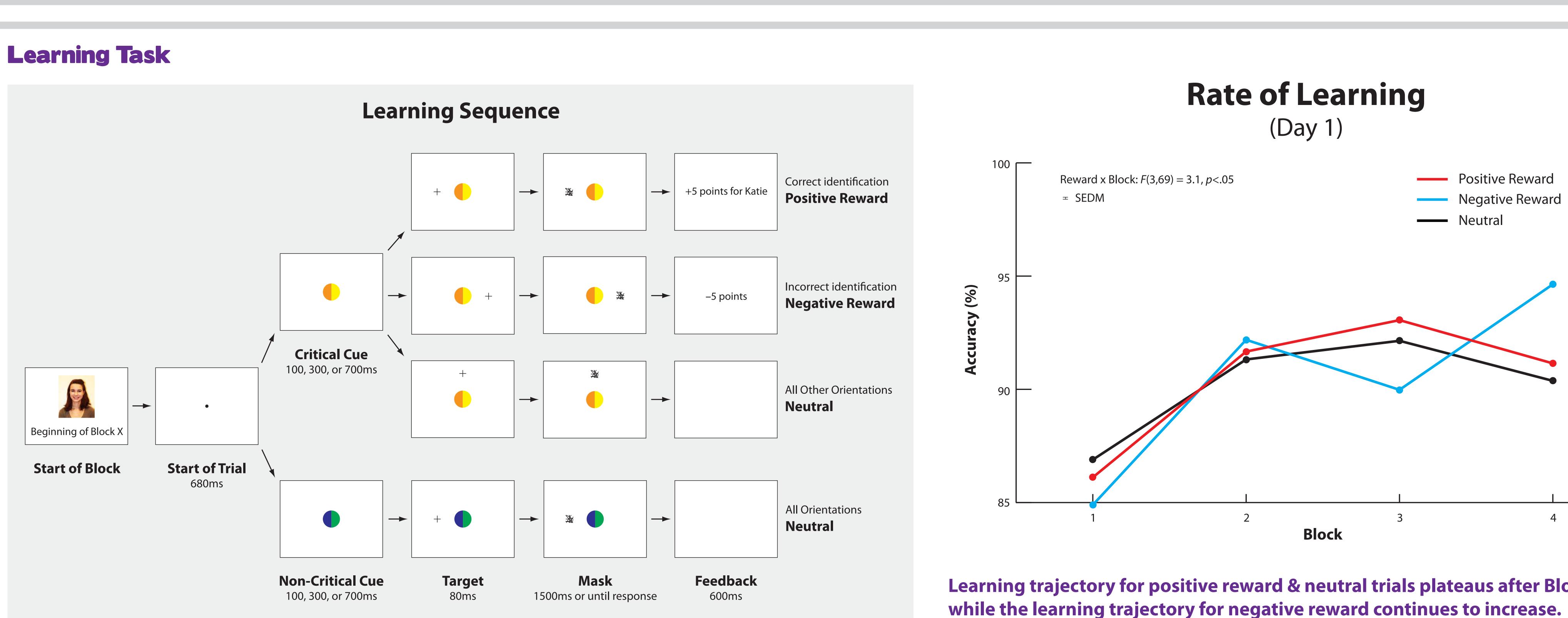
Does individual social competence matter?

Reward magnitude was calculated by subtracting the overall magnitude of orienting for positively rewarded trials from the overall magnitude of orienting for negatively rewarded trials.



Yes; Individuals high in social competence show larger magnitudes of orienting on positively rewarded trials.

Department of Psychology, McGill University



Start of Block

Dana A. Hayward, Effie J. Pereira, Todd A. Vogel, Kathleen E. Stewart, & Jelena Ristic

Learning trajectory for positive reward & neutral trials plateaus after Block 2, while the learning trajectory for negative reward continues to increase.



Introduction

Past research shows that implicit monetary reward leads to attentional capture by a rewarded singleton. However, it remains unclear if reward may also lead to the development of spatial associations between neutral cues and corresponding target locations, resulting in subsequent automatic spatial orienting. It is possible that such a learning mechanism may be responsible for the development of social attention, which may depend on forming spatial associations as a result of social reward.

In the present study, we investigated two questions:

- Does social reward lead to spatial orienting?
- Does individual variability in social competence mediate the degree of subsequent spatial orienting?

Methods

Twenty-four participants completed the experiment over two days.

DAY 1: Baseline (target detection task)

The presentation of bicoloured cues (orange/yellow or blue/green) was followed by a target appearing with equal probability in one of four possible locations (left, right, top, bottom).

DAY 1: Learning (target identification task)

One bicoloured cue was randomized to be the Critical Cue for reward-based learning. The Critical Cue had three outcomes:

• +5 points = correct identification in the positive reward location

–5 points = incorrect identification in the negative reward location

• 0 points = all other cue-target pairings

Social reward included socializing with the researcher and earning points for her project. The Non-Critical Cue was not linked to any reward.

DAY 2: Test (target detection task; same as Baseline) & Autism-**Spectrum Quotient Questionnaire (AQ)**

Conclusions

Social reward modulated the learning of spatial relations, i.e., participants oriented their attention in the direction of the positively rewarded cue, even though the cue had no predictive value about the target location. This effect was mediated by individual differences in social competence, whereby individuals with higher social competence showed larger magnitudes of orienting in response to positive social reward.

Together, these data suggest that reward can also influence the development of spatial orienting and that social reward may be a particularly powerful driving force in human attention.



