

## Introduction

Current theories on how we select and orient to social information – jointly termed social attention – suggest that we have specialized mechanisms that respond to faces. Research on attentional selection has found that faces and eyes attract and retain attention. However, research on attentional orienting has proved to be less robust, calling into question whether attentional engagement by social information is unique.

Some researchers argue that this inconsistency stems from differences in methodological approaches that: (i) only examine social cues in isolation without allowing for free selection, (ii) do not control for low-level properties in the stimuli, and (iii) do not differentiate between overt (with observable eye movements) and covert (without eye movements) attentional measurement.

Another inconsistency is whether attentional selection varies based on familiarity, as most studies have typically only presented a few faces as stimuli, making the faces familiar over time. Thus, it is important to examine whether social information is preferentially selected over non-social information under a covert attentional paradigm, when stimuli properties are controlled.

We hypothesize that:

- Social information (faces) will be preferentially covertly selected over non-social information (houses).
- Eyes will be preferentially selected overall.
- Familiarity with faces will elicit different degrees of attentional selection.

## Acknowledgements



## Methods

32 participants completed a modified dot-probe task, where they were asked to keep their eyes fixated on a central cross and to covertly discriminate a yellow target shape (circle or square).

We manipulated cue familiarity (familiar, novel), cue orientation (upright, inverted), face position (left visual field, right visual field), stimulus onset asynchrony (SOA; 250, 360, 560, 1000ms), target shape (square, circle), and target location (eyes, mouth, top house, bottom house). All conditions were equally and randomly distributed throughout the experiment.

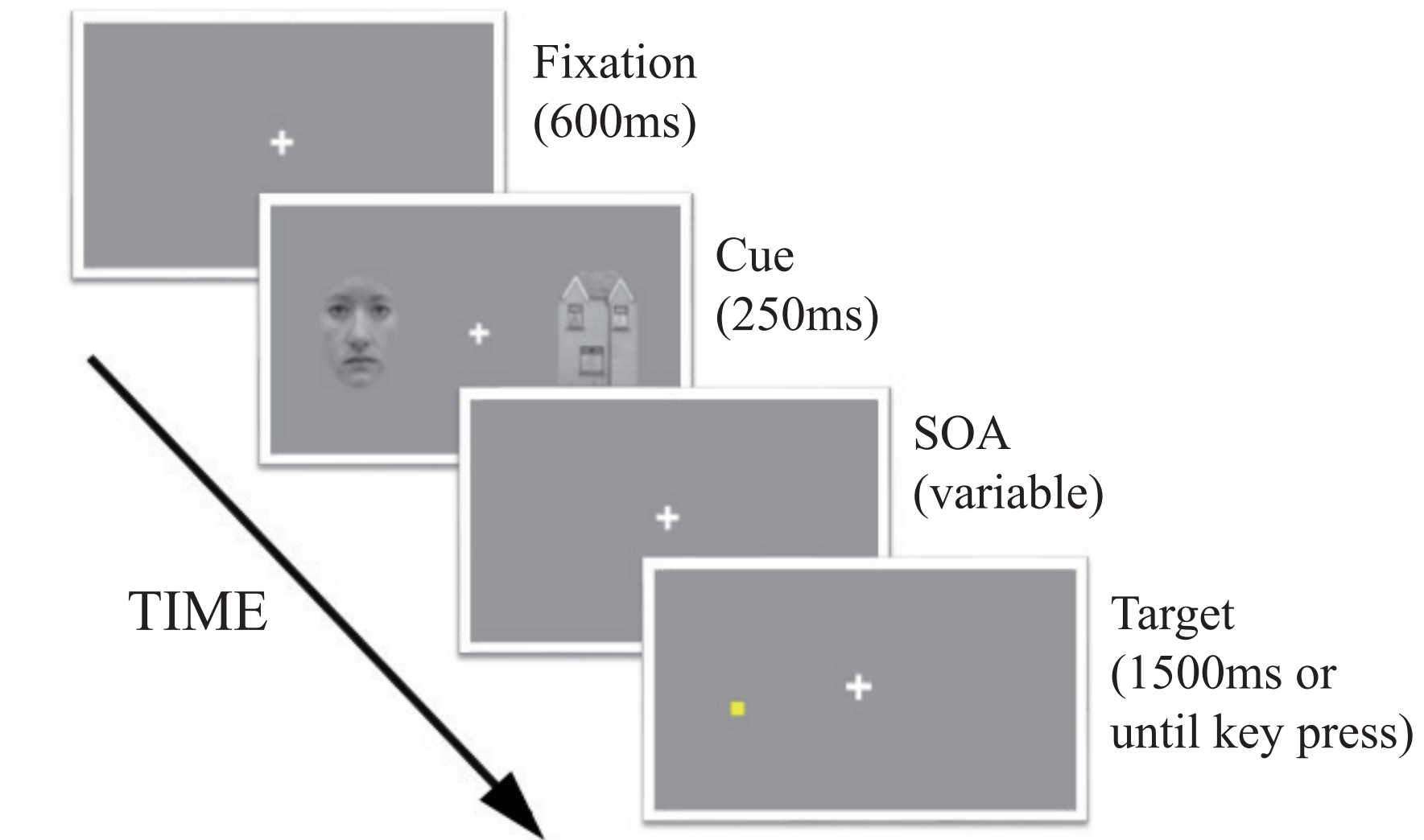


Figure 1: Sample Trial sequence.

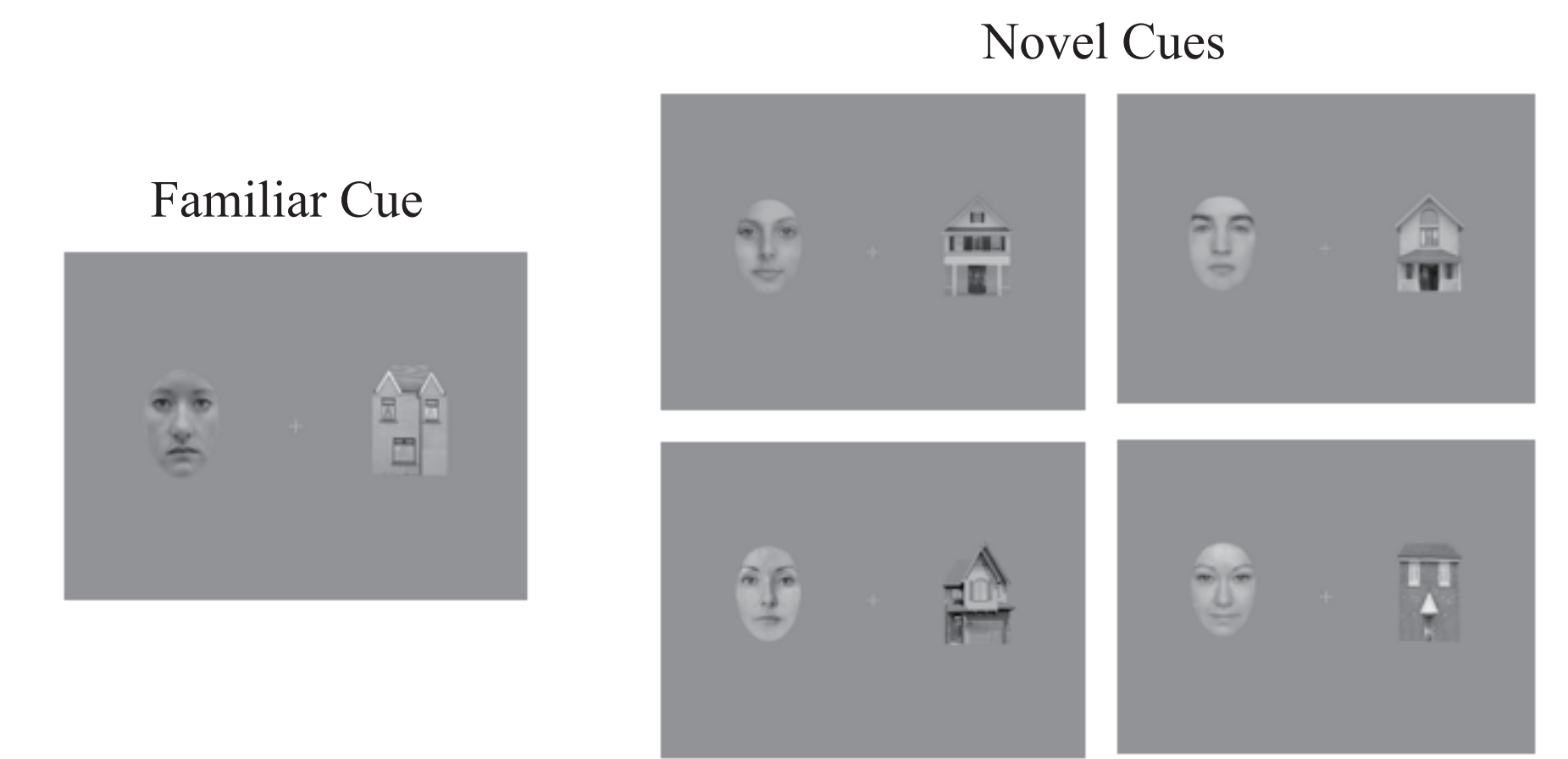
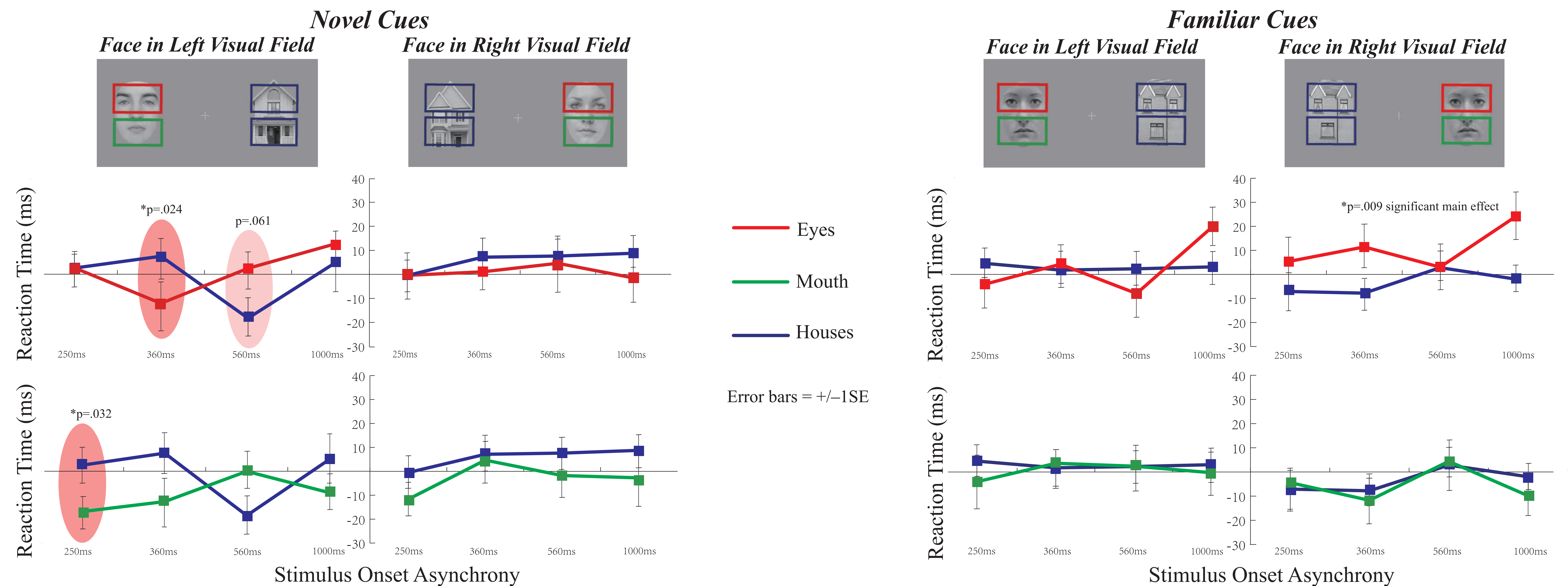


Figure 2: Sample cue familiarity screens.

## Results



Baselined reaction time was calculated by subtracting each participant's raw RTs for upright trials from their respective raw RTs for inverted trials.

## Summary

For novel faces, we found early inhibition and late facilitation for eyes in the left visual field, which suggests that eyes may not be preferentially selected all of the time. Together with our findings of early inhibition for the mouth, it suggests that the effects of attentional selection for faces and eyes tend to vary over the time course of attention, contradicting previous findings of robust facilitation for faces.

For familiar faces, we found facilitation for eyes over houses across all SOAs only in the right visual field, which is different from the attentional selection effects found for novel faces. This suggests that familiarity affects how we select and attend to faces, and that there might be different attentional mechanisms underlying the perception of familiar and novel faces.

Further studies can investigate the selection of social information when presented in complex or naturalistic contexts to examine how attentional selection functions in the real-world.