



About Faces:

- Detected very fast by the brain (~100 ms)
- Detected and attended more than other objects

Langton et al. (2008) *Cognition*

- In a visual search task, upright (but not inverted) distractor faces disrupt the search for a butterfly (manual responses)
- Butterfly distractors do not disrupt a face search
→ Faces capture attention, due to their meaning

We have a preference for faces but...

- Do they capture the eyes automatically?
- Is it due to their meaning or their saliency?
- Do they retain the eyes once fixated?

Methods



- Displays presented for 1000 ms
- **3 critical objects (CO) types:**
Upright faces (360 trials)
Inverted faces (360 trials)
Butterflies (360 trials)
- **Match target /critical object:**
Mismatch (oculomotor capture)
Match (oculomotor guidance)

- **Task:** move the eyes to the colour singleton (N = 24)

Results

Oculomotor capture

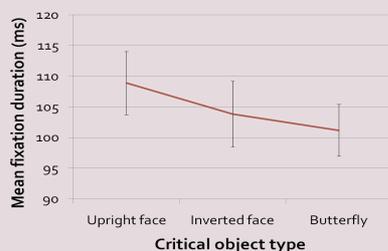
CO type effect:
 $F(2, 46) = 22.46; p < 0.001$

Faces capture the eyes; upright faces more than inverted faces

Fixation durations

Marginal CO type effect:
 $F(2, 46) = 2.54; p = 0.089$

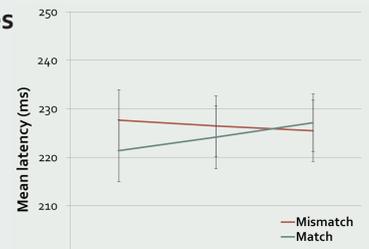
Upright faces fixated longer than butterflies



Correct saccades latencies

CO type X Match interaction:
 $F(2, 46) = 6.58; p < 0.005$

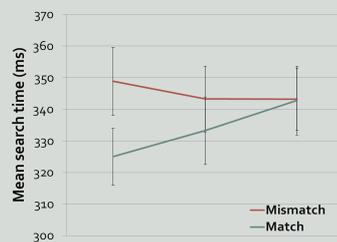
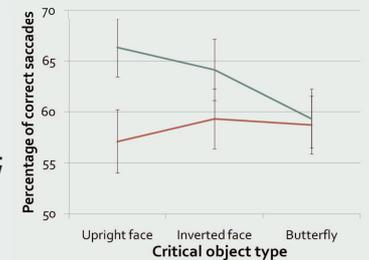
Upright faces facilitate the initiation of a saccade when next to the target circle



Saccade accuracy

CO type X Match interaction:
 $F(2, 46) = 7.13; p < 0.005$

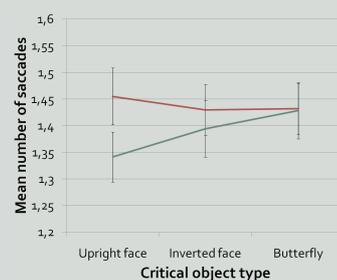
Faces help on match trials; Upright faces disrupt on mismatch trials



Search time

CO type X Match interaction:
 $F(2, 46) = 12.02; p < 0.001$

Faces help on match trials (upright ++); Upright faces disrupt on mismatch trials



Number of saccades to reach the target

CO type X Match interaction:
 $F(2, 46) = 6.86; p < 0.005$

Upright faces help on match trials and disrupt on mismatch trials

Conclusion

- Upright faces attract and guide the eyes to their location
- Inverted faces do so too but to a lesser extent
- Our visual system is particularly tuned to detecting faces
- Some pre-attentive representations encode faces and allow directing attention to them
- Based on saliency AND canonical orientation making them meaningful
- Might serve the extraction of more precise information about faces (e.g. identity, emotion)