

When do faces capture attention? Evidence from eye movements

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About Faces:

- Detected very fast by the brain (~100 ms).
- Detected and attended more than other objects.
- Their semantic processing is less sensitive to attentional load.

Langton et al. (2008) Cognition

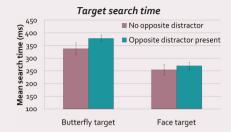
- In a visual search task, upright (but not inverted) distractor faces disrupt the search for a butterfly (manual responses).
- Butterfly distractors do not interfere with a face search.
- Faces capture attention.

We have a preference for faces but...

- Do they capture the eyes automatically?
- Do they retain the eyes once they are fixated? ... Eye tracking!

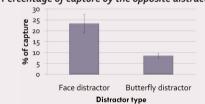
Method Target cue (1000 ms) Exp.1 (upright) Exp.2 (inverted) Butterfly Exp. 3 (face irrelevant) Target cue (1000 ms) Face Butterfly Flower or Butterfly • Task: find the cued target with the eyes.

Experiment 1 - Upright displays (N=8).



- Faces found faster than butterflies.
- The presence of the opposite distractor is disruptive but even more when it is a face.
- Same pattern with number of saccades (all <2).

Percentage of capture by the opposite distractor



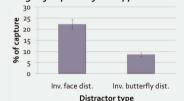
- Faces capture the eyes more than butterflies.
- No effect on fixation duration.

Experiment 2 - Inverted displays (N=8).



- Inverted faces also found faster.
- The presence of a distractor inverted face is disruptive for the inverted butterfly search.

Percentage of capture by the opposite distractor



- Inverted faces also capture the eyes more.
- No effect on fixation duration.

Experiment 3 - Irrelevant faces (N=8).

Target search time

Target search time

Target search time

No dist. face Upright dist. face Inv. dist. face

Trial type

- The presence of an irrelevant upright or inverted face does not affect the search for flowers and butterflies.
- Same pattern with number of saccades.

Percentage of capture by faces Upright face Inverted face

Distractor type

- Distractor faces do not capture the eyes.
- When task-irrelevant, faces can be ignored.

Conclusion

Upright and inverted faces are easy to detect.

Faces have highly salient features but they only capture the eyes when their detection is relevant during the task.

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