

Self-face does not capture attention: an inattentional blindness study

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BACKGROUND

Because of their meaningfulness, some categories of stimuli are more likely to capture attention under condition of inattention compared to others (Mack & Rock, 1998; Mack et al., 2002):

- Faces icons vs. scrambled faces or geometrical shapes;
- Auto-referential material (own name) vs. other names or neutral words.

Stimuli combining these 2 properties have never been assessed.

-> 2 possibilities :

- The 2 properties are additional and the own face is more likely to attract attention than other faces;
- The identity and the familiarity of faces are not relevant factors because any face attracts attention by itself and all faces are equally distractive.

This study was aimed at testing these 2 hypotheses using an adapted version of the inattentional blindness paradigm (Mack & Rock, 1998).

Experiment 1

METHOD

Participants.

123 (33 men) students from the ULg. All of them were previously photographed.
-> randomly assigned to one of 3 experimental groups: self-face (n = 41), friend's face (n = 41) and unknown face (n = 41) as critical stimulus.

Stimuli.

Each critical stimulus (CS) was a face in greyscale (0.89 X 1.07°) taken among 6 unknown faces (3 males and 3 females) or 2 familiar faces (participant's face and his/her friend's face).

Procedure.

Participants were instructed to stare at a centred fixation cross and to judge which arm of a bigger cross presented very briefly was longer compared to the other one.

There was a total of 9 trials. Each trial was initiated by a key press. A fixation cross was presented for 1500 ms. Then, a masked bigger cross appeared for 200 ms randomly in one of 4 quadrants on a 45° diagonal from fixation. This display was followed by a question about the length judgment.

During critical and control trials, a face appeared at fixation (for 200 ms) in addition to the bigger cross. After the length judgment, participants were asked to indicate/guess what had been presented on a 8 alternatives forced choice (8-AFC).

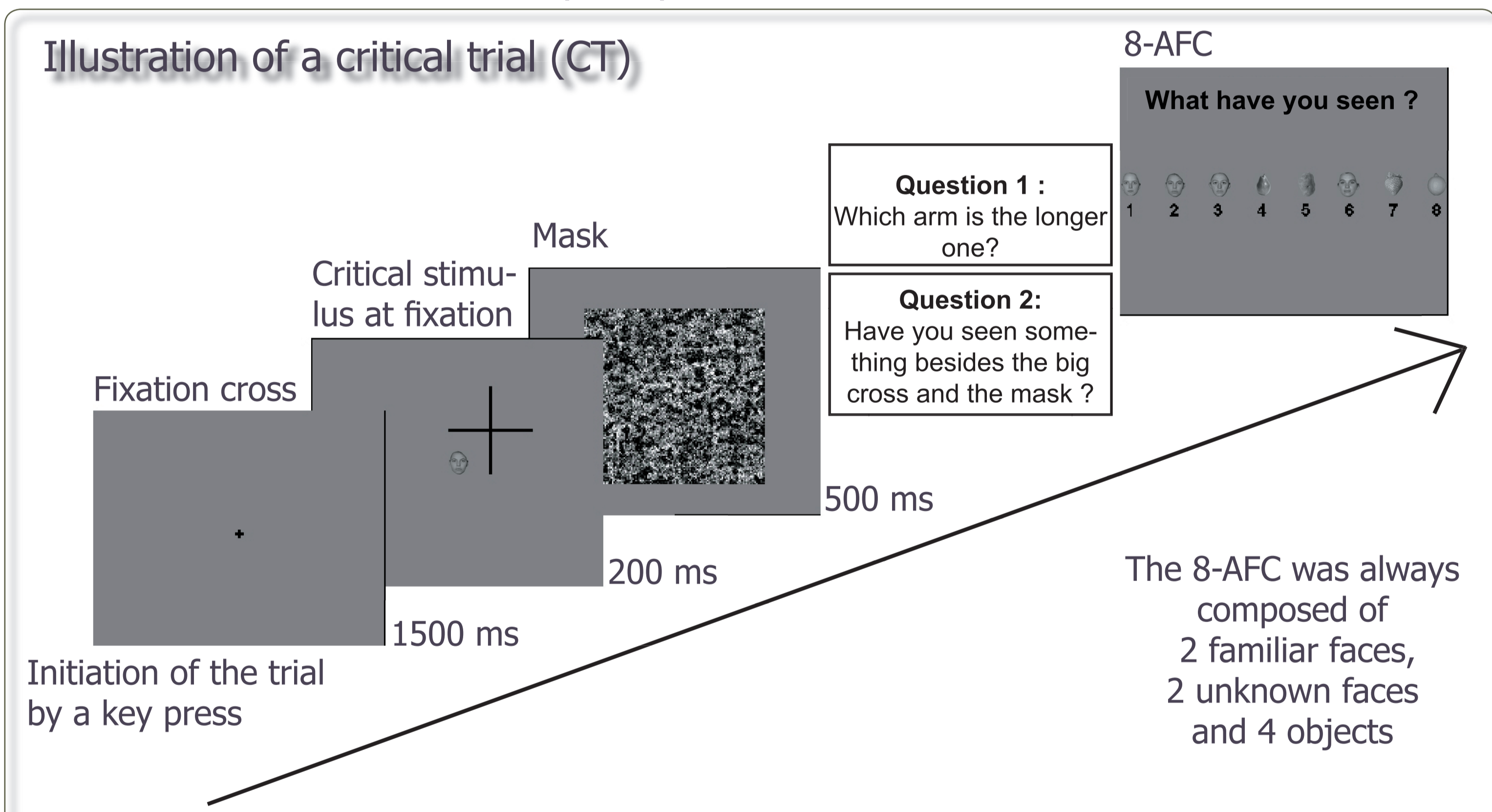
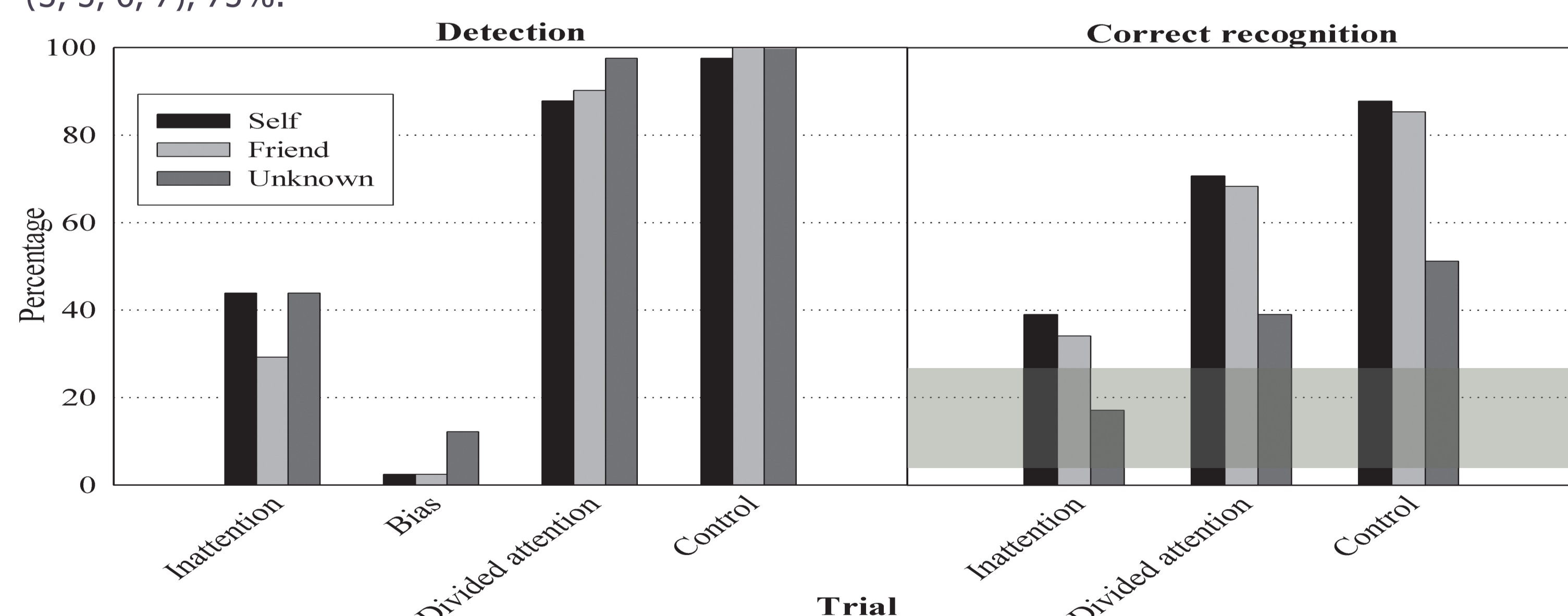


Illustration of the procedure

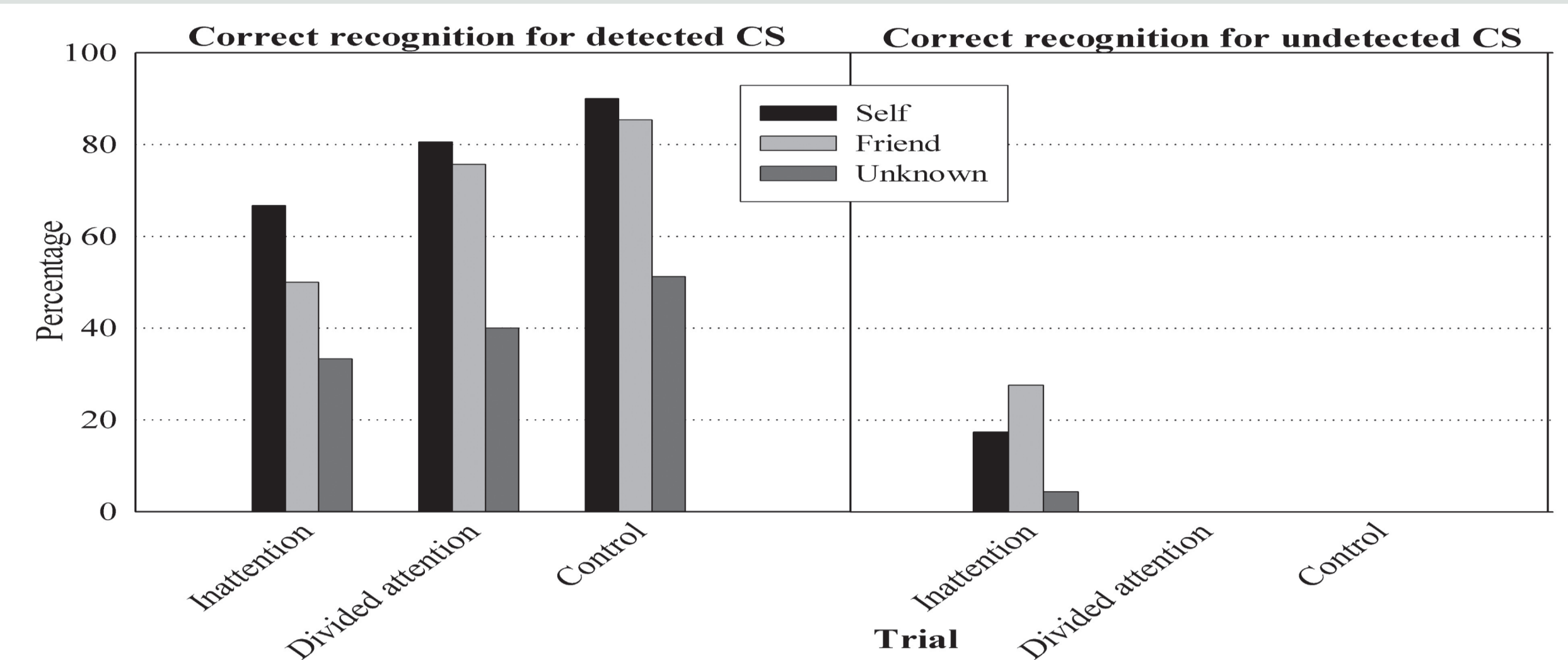
Trial 1,2,3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9
cross alone	cross + CS	cross alone	cross alone	cross alone	cross + CS	ignored cross
	8-AFC		8-AFC		8-AFC	8-AFC
	Inattention		Bias		Divided att.	Control

RESULTS

- Overall accuracy on the primary task = 69%.
- Accuracy did not differ significantly between the 3 groups on the two critical trials nor on the bias trial.
- Performance on critical trials (4 and 8), 70%, did not differ significantly from that during adjacent trials (3, 5, 6, 7), 75%.

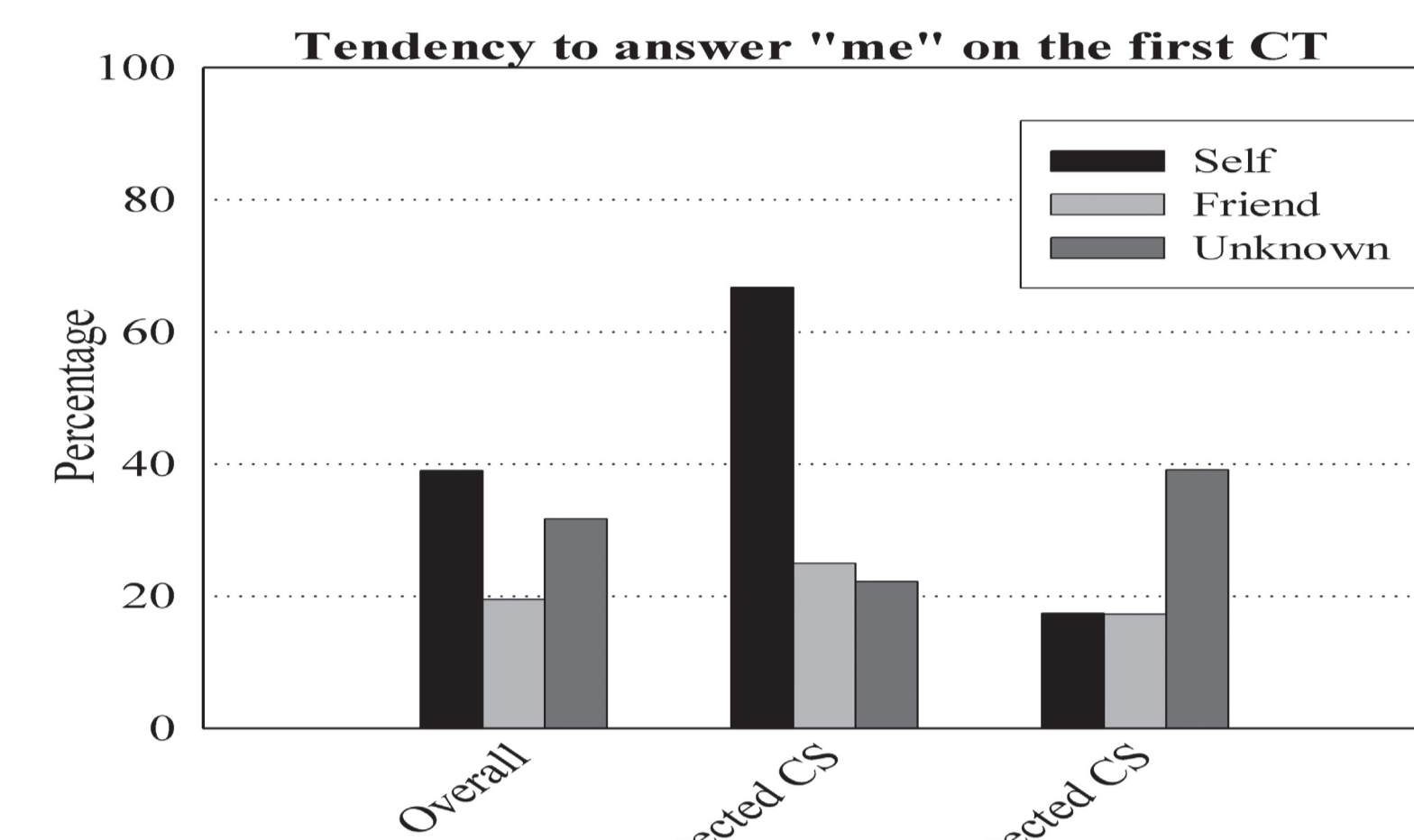


- All faces are similarly detected on each CT.
- However, familiar faces tend to be better recognized than others (Self > Unknown) on first CT and are better recognized than unknown faces on following CTs.
- Familiar faces are better recognized than random level on first CT.



- When CS is detected, its recognition is better than random level for familiar faces on first CT.
- When CS is undetected, its recognition is at random level on first CT (except for the friend's face).

-> Correct recognition seems due to conscious detection of the CS.



- No difference overall.
- However, when CS is detected, participants do not seem to be biased to think that they should see themselves: when they choose self-face, they really saw it.

=> Faces are similarly detected independently of their identity/familiarity.

Are faces still more resistant to blindness than photographs of common objects (fruits and vegetables)?
-> Experiment 2.

Experiment 2

METHOD

Participants.

48 students (18 men) from the ULg.
-> randomly assigned to one of 2 experimental groups: face (n = 24), object (n = 24) as CS.

Stimuli.

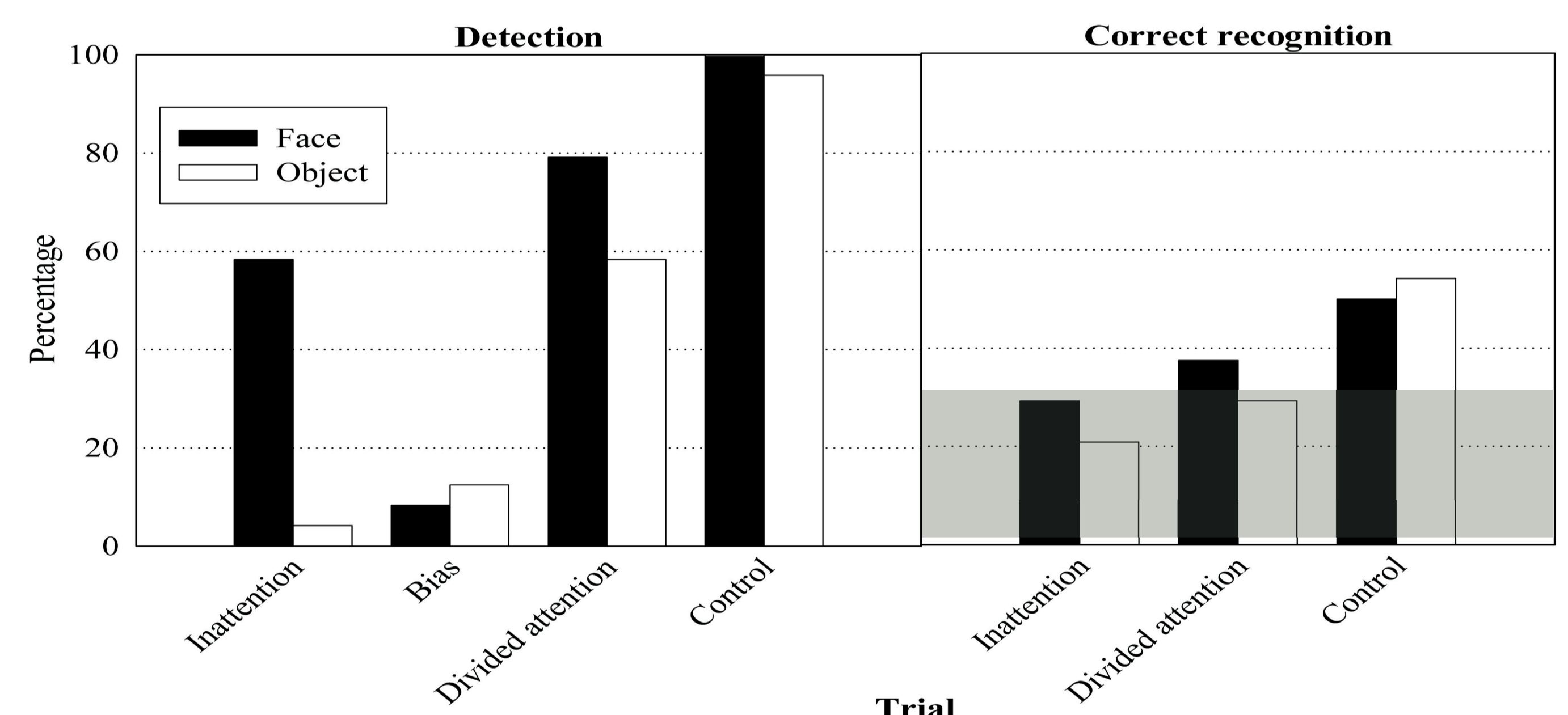
Possible CS were now chosen among 4 unknown faces (2 males, 2 females) and 4 objects from Experiment 1.

Procedure.

Same than in Experiment 1 except that the 8-AFC was now composed of the 8 same items: the 4 unfamiliar faces and the 4 objects.

RESULTS

- Overall accuracy on the primary task = 66%.
- Accuracy did not differ significantly between the 2 groups on the two critical trials nor on the bias trial. Performance on critical trials (4 and 8), 68%, did not differ significantly from that during adjacent trials (3, 5, 6, 7), 71%.



- Faces are better detected than objects on the first CT (no more differences on following trials).
- Recognition of faces and objects is not significantly different (probably because objects are more discriminable than faces). Recognition is at random level on the first CT.
- Recognition is higher than random level when CS is detected and lower than random level when CS is undetected.

CONCLUSIONS

- The identity/familiarity of the face is not a relevant factor for attentional capture (Experiment 1).
-> self-face does NOT particularly capture attention compared to other faces.
- Replication of previous findings: faces are better detected than objects (Experiment 2).
=> any face seems to attract attention by itself.
- When participants report seeing something, they really do so (cf. low detection rate on the Bias trial and better recognition for detected items than for undetected items).
- No clear indication of implicit perception of items reported as undetected (Recognition rates generally at random when CS is undetected).
- The familiarity of the face helps to recognize it in the 8-AFC, independently of the identity (self-face // colleague's face) (Experiment 1).
=> Against the view that self-relevant stimuli are special.
=> Inadequate control of the familiarity in previous studies?

REFERENCES

- Mack, A., & Rock, I. (1998). *Inattentional Blindness*. Cambridge, MA: MIT Press.
- Mack, A., Pappas, Z., Silverman, M., & Gay, R. (2002). What we see: Inattention and the capture of attention by meaning. *Consciousness and Cognition*, 11, 488-506.

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- Acknowledgments -

CD and SB are supported by a grant from the Belgian FNRS (8.4506.05-2.4539.05).
CL is a Research Fellow of the FNRS.