# Reviewers' comments - self face paper

## Reviewer #1:

The aim of the study was to evaluate how different levels of familiarity impact recognition and response times for faces. The authors hypothesized that familiar faces and upright faces would be processed more efficiently than unfamiliar faces and inverted faces. The results indeed showed faster recognition for familiar compared to unfamiliar faces, with fastest recognition time for self-faces. Additionally, recognition times were faster for upright faces compared to inverted ones. Although the findings are consistent with the authors' predictions, I have several significant concerns regarding this study.

The theoretical rationale for conducting the experiments is unclear. Numerous studies have already demonstrated that familiar faces are processed more efficiently than unfamiliar ones, and that performance is better for upright than inverted faces. Thus, the main findings reported in this study are not novel. In addition, the study design was flawed in several ways:

* There was an unequal number of stimuli for familiar, unfamiliar, and self-faces. While 16 images of unfamiliar faces were included, only 2 images of familiar faces and two images of self-faces were used. This unequal distribution undermines the validity of interpreting the findings in terms of familiarity.
* The familiar face was the face of the experimenter. This is an odd and unjustified choice, considering that participants likely encountered the experimenter for the first time during the experiment.
* The self faces were provided by the participants themselves, meaning they had seen these specific images prior to the experiment. This likely led to the very fast recognition of these images and possibly obscured the inversion effect due to ceiling effect.
* Recognition time was measured on a two alternative forced choice task. Thus, the time it took to respond included also the time taken by participants to select the correct face from two alternatives, rather than the exposure time for recognition itself.
* The study also reports correlations with participants' age. This was a post-hoc analysis based on a small sample size of only 28 participants, resulting in very small age groups.

## Reviewer #2:

Evaluation:

This paper presents interesting data regarding recognition times, determined via staircase-modulated presentation time variations, for the recognition of faces of various groups of familiarity (self face, familiar face, unfamiliar face). This is a nice study reporting a single experiment that seems expertly conducted, but also shows potential to be converted into a more systematic series of studies. I confess that I had my doubts with respect to whether this work at its present stage represents the kind of advance in psychological theory we would typically associate with a paper published in Cognition. In other words, my feeling is that this study instead could be a better fit for a more specialized outlet in visual perception.

## Major points:

1. Introduction: I was not initially sure why the authors refer to what seems to be an apparently over-precise number of 360 ms as the latency at which a familiar face can be recognized. I suppose this depends on the methodology you use and here refers to keypress (or key release) responses; this should be specified at this point. Certainly recordings of electrical or magnetic brain activity has pointed to earlier latencies, e.g., in the regions between 200 and 350 ms. This might be mentioned. In particular, regarding the discussion of faster processing of personally familiar faces, a paper by Herzmann et al. (2004, Psychophysiology) seems relevant. Moreover, in the study discussing self-face responses, a paper by Tanaka et al. (2005) seems relevant.

2. Given that this study determined recognition time in terms of presentation times used, a more precise description of stimuli (e.g., including luminance and contrast) would be welcome.

3. The paper is in need of some clarification regarding methods/results. For instance, on P.12 the reader is surprised to learn about an ANOVA interaction between age and condition - there are only 28 participants, and I could not find any specification for how any group assignment may have been conducted?

4. Another problem is the large age range of the participant, combined with the fact that the distractor faces were all showing young adults. As the authors remark themselves, this undermines the interpretation of any self-face effects - in fact, it might be a trivial explanation for the above interaction between age and condition. A fairer design would have involved using the same age range for both participants and (target AND) distractor faces.

5. The staircase procedure in principle can be an appropriate procedure to determine recognition times. That having said, the fact that there are several possible design variants of the procedure (e.g., 2-AFC recognition as used here, yes/no recognition, identification) suggests that there would be multiple ways to extend this single experiment into a systematic series that might give the present findings more weight. It´s good that the authors provide a power analysis for sample planning, but at the same time this seems underspecified: Was the study powered for a main effect (and which one), or for an interaction?

## Reviewer #3:

This paper contains some interesting ideas. In particular, I enjoyed reading about the idea of separating "recognition time" (using a staircase procedure to manipulate exposure duration) from "reaction time" (using a button press). Having said that, I'm afraid I cannot recommend publication. There are two main problems. First, it is not clear that the paper makes a sufficient novel theoretical contribution to warrant publication in Cognition. The results are quite predictable, and it is unclear how they advance our knowledge on face familiarity.

The second problem is methodological. The authors have compared unfamiliar, familiar and self-faces. There are 16 unfamiliar faces, taken from a well-known database. However, there is only a single familiar face - that of the experimenter. This is a major problem, because the results could simply reflect the characteristics of that single face. For example, the authors make considerable claims about the difference between the self-face and the familiar face - but we have no idea if the results reflect a difference between self-face and the class of famous faces, or just self-face and this "familiar" individual's face. Whereas (and more correctly) we can make inferences about the difference between self- and unfamiliar faces in general, because there were several unfamiliars.

In addition to the problem of using a single familiar face, the authors do not tell us anything about how this face became familiar to the participants. Was it only during the experimental instructions stage, or was there more extensive training? The comparison with self-face is important here, because if this just reflects a superficial learning of the "familiar" face, then the observed differences are completely unsurprising, and do not have the weight afforded them in the General Discussion.

Some minor points:

1. There seem to be many missing references throughout - question marks appear in lists of references on p 2, 3 and 5.

2. p.8 "two images per identity were used so that responses would be more likely to indicate identity processing rather than image-based processing". The aim here is laudable, but all faces were presented as greyscale, with aligned eyes, oval-cropped to exclude hair and showing neutral expression. How different could they be? This is such an unusual way to encounter faces that it undermines some of the claims made.

3. p10 - typo "no missingness was found".

4. Figures 3 and 5 are very difficult to read. They both present the same data three different ways at once. I think it would be clearer to pick a style and just use that.