

# Attractiveness Enhances The Perceived Familiarity Of Unfamiliar Faces But Not Familiar Faces

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## Introduction

The face-space model of face perception (Valentine, 1991) proposes that faces regarded as typical are clustered together in a centrally located area of multi-dimensional representational space whilst faces regarded as distinctive are spaced further apart and are located in outer areas of this space.

Faces regarded as typical are often attributed with higher levels of attractiveness than distinctive faces (Langlois & Roggman, 1990). Typical faces are also identified as faces (as opposed to another class of object) faster than distinctive faces; probably due to typical faces having many near neighbours in face-space (Valentine, 1991).

Combining these two ideas, it may be that typical (and therefore more attractive) faces are more likely to be perceived as familiar, regardless of their actual familiarity and Peskin and Newell (2004) established a correlational relationship between familiarity and attractiveness for unfamiliar faces.

This study used four groups of faces; Familiar Attractive (FA), Familiar Less-Attractive (FLA), Unfamiliar Attractive (UFA) and Unfamiliar Less-Attractive (UFLA) to investigate whether:

- perceived familiarity is influenced by the attractiveness of the face
- attractiveness can affect the perceived familiarity of already familiar faces.

## Method

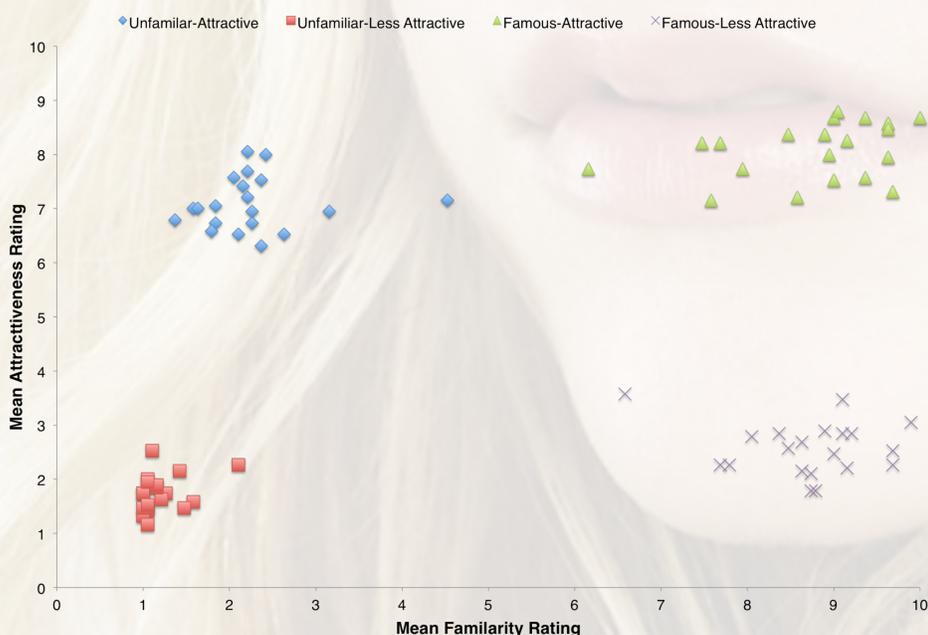
### Facial image selection

Images of 30 faces (15 male/15 female) were placed into each of the four categories (FA, FLA, UFA, UFLA) giving a total of 120 faces. Sixteen participants were presented with all 120 faces and asked to rate them for familiarity and attractiveness (both on scales out of 10). The results confirmed the choice of group into which a face was placed. The top 20 rated faces for familiarity and attractiveness for each face category (yielding a total of 80 face images) were used in the experiment.

### Procedure

Twenty participants were presented with the 80 images. Participants were asked to rate each face for attractiveness and familiarity.

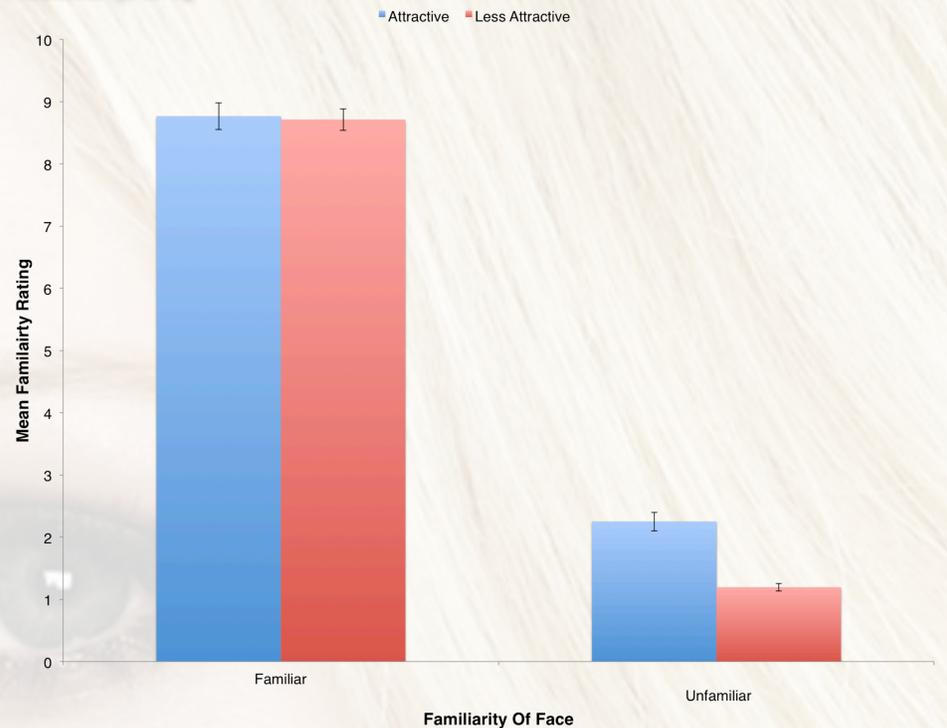
## Results



### Correlation between familiarity and attractiveness:

- Unfamiliar faces:  $r = .735, p < .001$
- Familiar faces:  $r = .051, p = .755$

## Results (cont)



### Effect of attractiveness on familiarity ratings

The mean familiarity ratings for each face in the four groups were analysed with a 2x2 between-subjects ANOVA. Results indicated:

- an expected main effect of familiarity;  $F(1,76) = 1934.280, p < .001$
- a main effect of attractiveness;  $F(1,76) = 12.063, p = .001$
- a significant interaction;  $F(1,76) = 9.880, p = .002$

Post-hoc tests on the significant interaction revealed:

- perceived familiarity for UFA faces higher than UFLA faces;  $t(38) = 6.558, p < .001$
- no effect of attractiveness for familiar faces;  $t(38) = .191, p = .849$

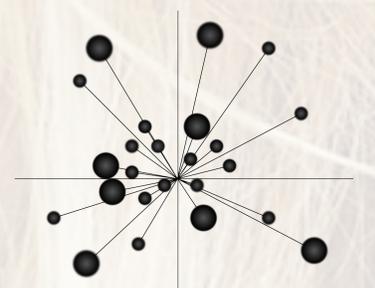
## Conclusions

A positive correlation between familiarity and attractiveness was found for unfamiliar faces, supporting the results of Peskin and Newell (2004). Familiar faces did not show any such relationship between familiarity and attractiveness.

Furthermore, perceived familiarity ratings were found to be higher for UFA faces than they were for UFLA faces. No such effect was found between FA and FLA faces.

The results indicate that attractive unfamiliar faces are perceived as more familiar than less attractive unfamiliar faces. The results can be interpreted in the concept of Valentine's (1991) face-space model in which physically typical (and therefore attractive) faces are clustered together in the centre of face-space. Presentation of an unfamiliar attractive face activates the representations of a number of nearby faces, some possibly already familiar, enhancing feelings of familiarity.

A different pattern emerges for familiar faces; their perceived familiarity is not influenced by attractiveness. It would appear that once a face becomes truly familiar it is identified well, regardless of how attractive it is.



Modification of Valentine's (1991) Face-space model incorporating the effects of both attractiveness and familiarity. Attractive faces are clustered together at the centre of face-space, less attractive faces towards the outer edges. Activation strength is indicated by the size of the point; familiar faces yield high face recognition unit (FRU) activation strength as indicated by larger points than unfamiliar faces with smaller FRU activation. Unfamiliar attractive faces may be perceived as familiar due to increase activation from surrounding similar faces. Less attractive unfamiliar faces do not receive this facilitation. The greater FRU strength of familiar faces removes this facilitation effect.

## References

- Langlois, J. H., & Roggman, L. A. (1990). Attractive Faces Are Only Average. *Psychological Science*, 1, 115-121
- Peskin, M., & Newell, F. N. (2004). Familiarity breeds attraction: Effects of exposure on the attractiveness of typical and distinctive faces. *Perception*, 33, 147-157
- Valentine, T. (1991). A Unified Account of the Effects of Distinctiveness, Inversion, and Race in Face Recognition. *Quarterly Journal of Experimental Psychology Section A: Human Experimental Psychology*, 43, 161-204