

The accuracy of perceptual memory for personally known faces

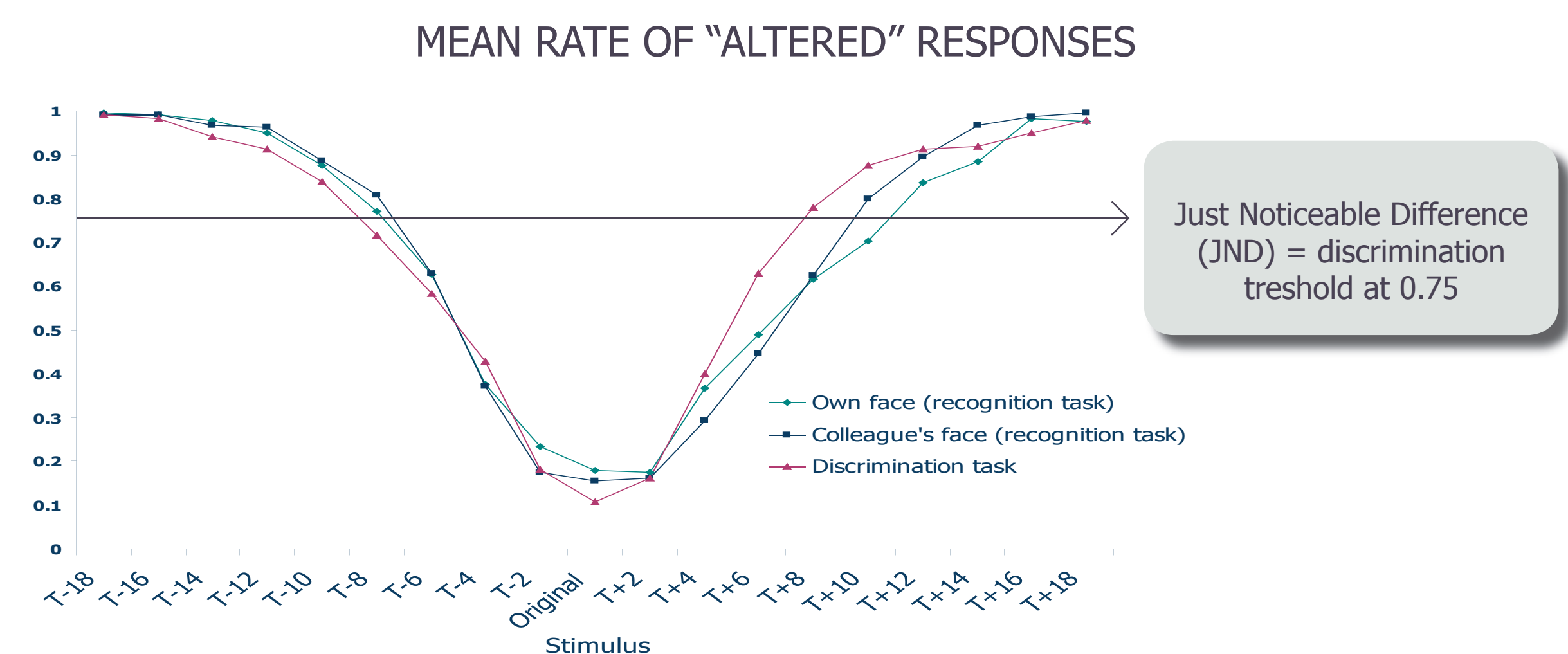
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BACKGROUND

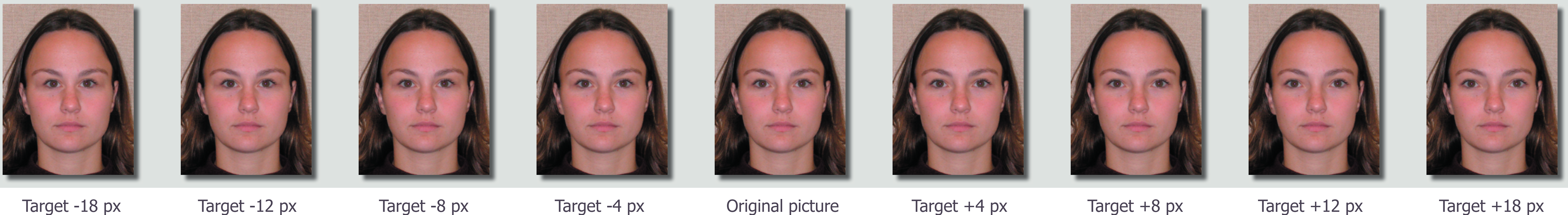
- Traditional paradigm in which a familiar face has to be recognised among unfamiliar faces is not suited to test memory accuracy for highly familiar faces.
- Ge et al. (2003) proposed a paradigm to assess memory for highly familiar faces' configuration:
 - Their Chinese participants had to identify from memory the most veridical appearance of Mao's face among unaltered and transformed (alterations of the interocular distance) versions of his portrait (recognition task);
 - Their performance was compared to that of a group who performed a perceptive discrimination task;
 - Their participants' memory was very accurate as their performance did not differ from that of participants who passed the discrimination task.
- However, this study can not tell us if this very high accuracy for familiar faces can generalise to personally known faces or if it is limited to those personality which are mainly known from a **standard portrait**.

RESULTS



- As the size of the transformation increased, rate of "altered" responses increased for the 2 kind of alterations.
- The identification of the original picture was similar for the 2 familiar faces in the recognition task.
- The identification of the original picture was not different in the two tasks (recognition vs. perceptive discrimination).

Sample Stimuli



QUESTIONS OF PRESENT STUDY

- 1) Is the accuracy for familiar faces specific to famous individuals whose face is mainly known from a standard portrait or can it generalise to personally known faces (self or a close other's face)?
- 2) Does the specific visual experience underlying our own face (we can never access it directly) have an influence on our ability to detect small transformations applied to it compared to other highly familiar faces?

METHOD

PARTICIPANTS

- 24 participants (Mean age = 22.7).
- 6 pairs of same gender colleagues took part to the recognition task.
- The 12 remaining subjects participated to a perceptive discrimination task in which they evaluated an unknown same gender face.

MATERIAL

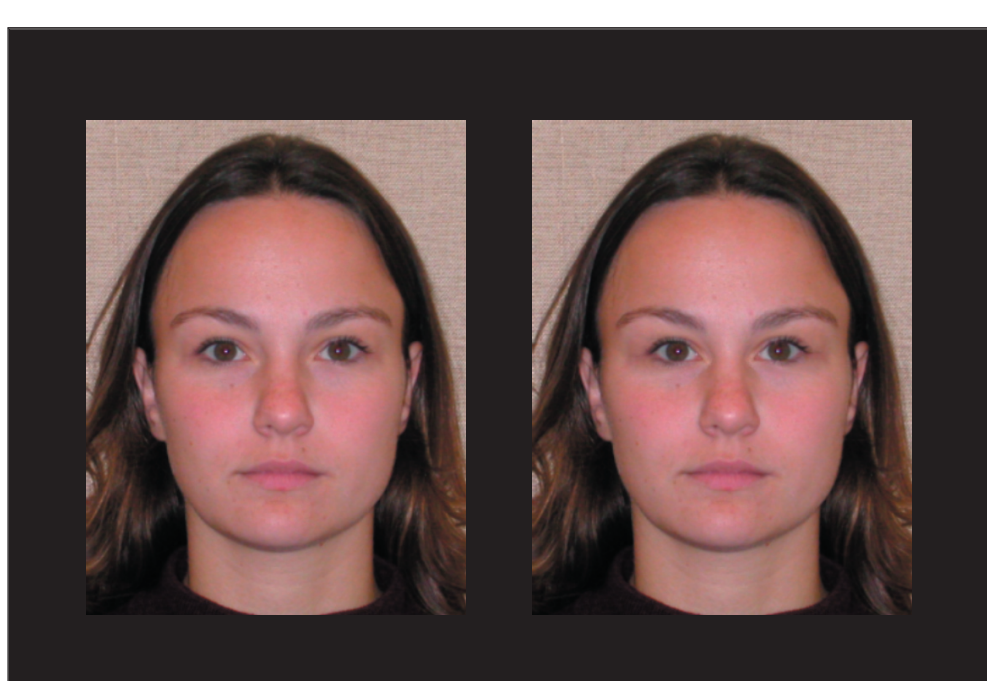
- Pictures of people of the recognition task. Each image had a size of 16 X 21 cm (resolution of 2.41 min of arc/pixel at 50 cm).
- We created 18 new versions of each face : 9 with a narrower interocular distance (by steps of 2 px) and 9 with a wider inter-ocular distance (also by steps of 2 px). Subject's own face was mirror-reversed.

PROCEDURE

RECOGNITION task : participants had to judge from memory whether the presented face was intact or not.



"Is the face intact or altered?"



"Are the two faces identical or not?"

DISCRIMINATION task : independant observers had to judge if two faces were identical or not.

RESULTS cont'd

		JND (IN PIXELS)	
		Eye-in	Eye-out
Recognition task	Own face	7.22 (2.78)	9.59 (4.08)
	Colleague's face	7.23 (2.61)	8.65 (2.95)
Discrimination task		7.42 (3.40)	7.71 (3.76)

- The direction of the transformation had no effect on the JNDs.
- JNDs were not different for the 2 familiar faces in the recognition task.
- JNDs were similar in the 2 tasks (recognition vs. perceptive discrimination).

CONCLUSION

- Hyperfidelity of memory for familiar faces is not limited to the recognition of famous individuals known from their standard portraits.
- It generalises to personally known individuals for whom we have a various visual experience.
- Although we can access our own face only indirectly (via mirror, pictures, videos, etc), we seem to know it as well as other faces that we meet everyday in a more direct way.

PERSPECTIVES

- Assess the memory accuracy for personally known faces with other facial transformations. For instance, with more meaningful ones such as those underlied by facial development with age.
- Test the detection of alterations made on different facial orientations (canonical or not).

REFERENCE

Ge, L., Luo, J., Nishimura, M., & Lee, K. (2003). The lasting impression of Chairman Mao: Hyperfidelity of familiar-face memory. *Perception*, 32(5), 601-614.

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