MGH/HST Athinoula A. Martinos Center for Biomedical Imaging

MASSACHUSETTS GENERAL HOSPITAL

HST Harvard-MIT Health Sciences & Technology

PENNSTATE 1855

The integrative process of reading emotional expressions from a crowd of faces

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Reading the overall emotion of crowds




Social behaviors towards/against emotional crowds

Happy / Approach

Angry / Avoidance

How do we extract crowd emotion?

[1] What factors affect perception of crowd emotion?

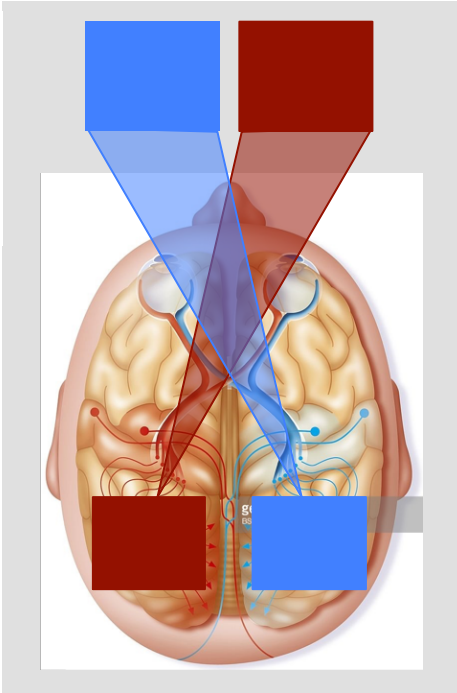
- Facial identity


- Gender of a crowd

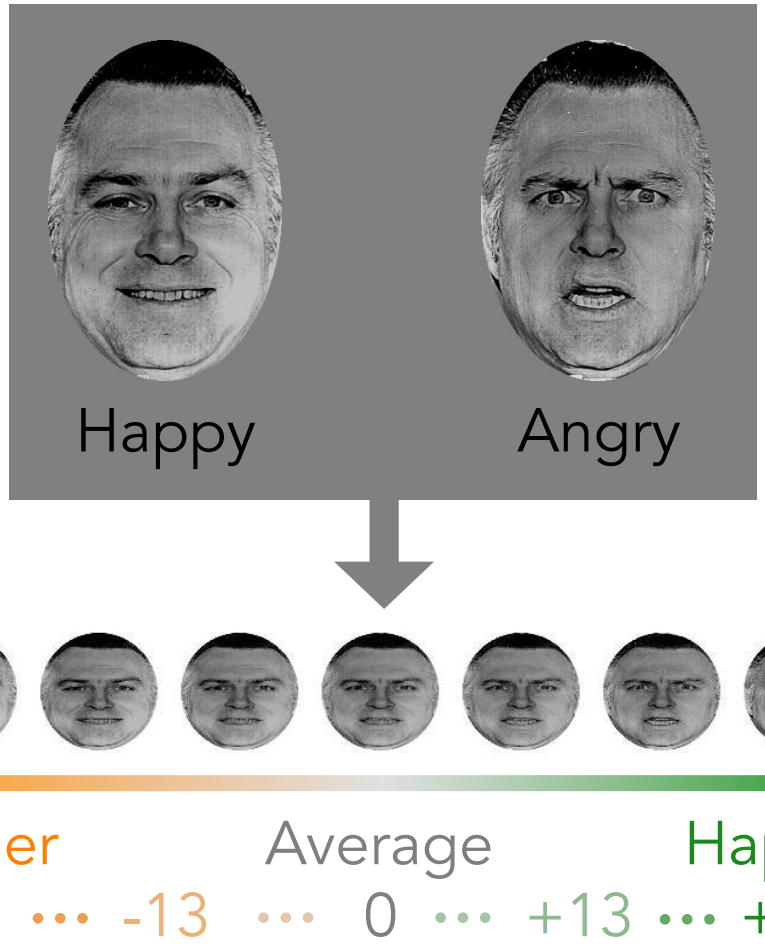

- Viewers' anxiety level
- Viewers' goals and intent

[2] How do brains process crowd emotion?

- Eye movement
- Hemispheric lateralization



Making emotional crowds by linear morphing

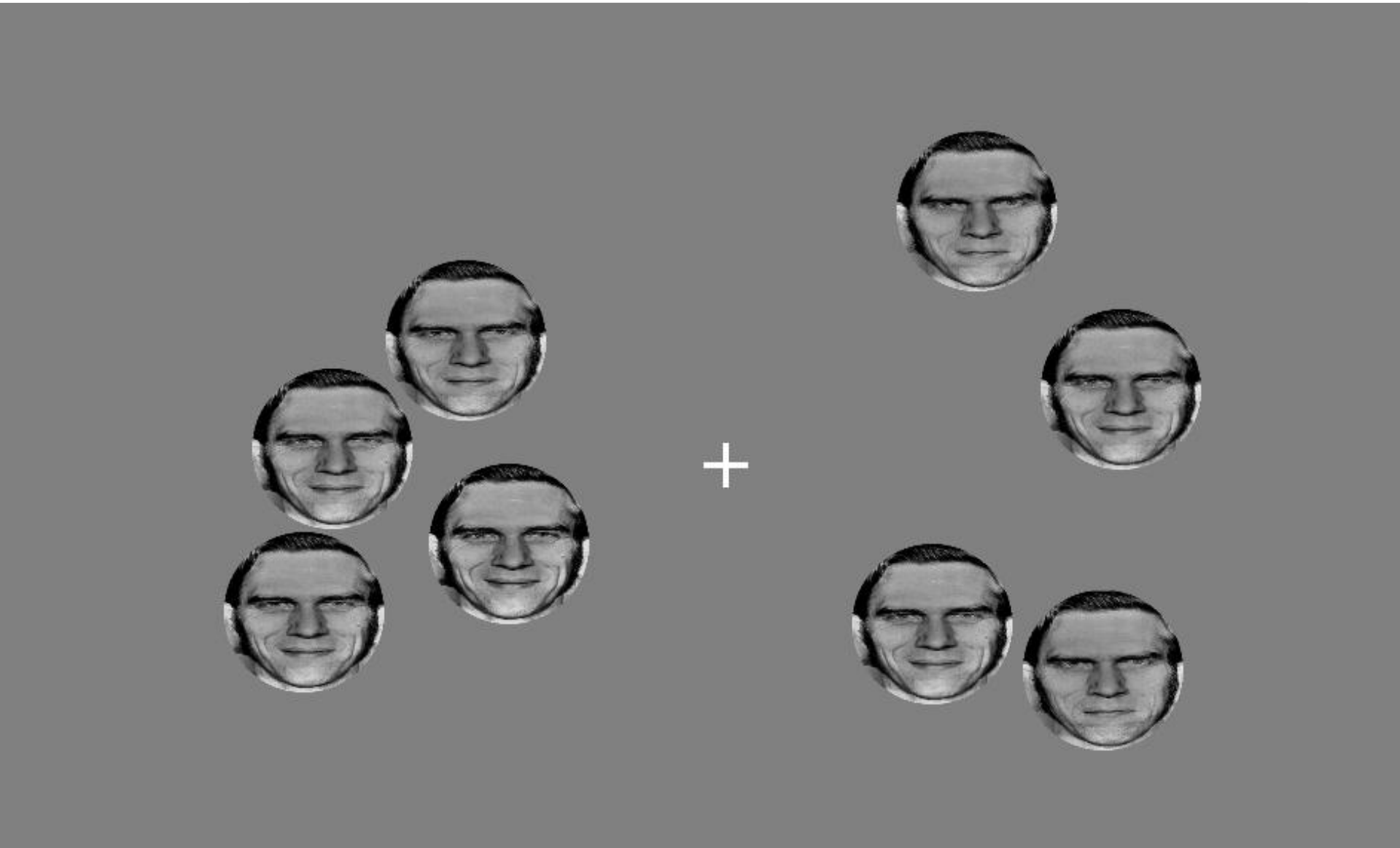


- Happier (+5, +9) and Angrier (-5, -9) vs. Average
- 6 Identities (3 Females and 3 Males)

Demo: Which crowd would you rather approach?

Get ready!

Demo: Which crowd would you rather approach?



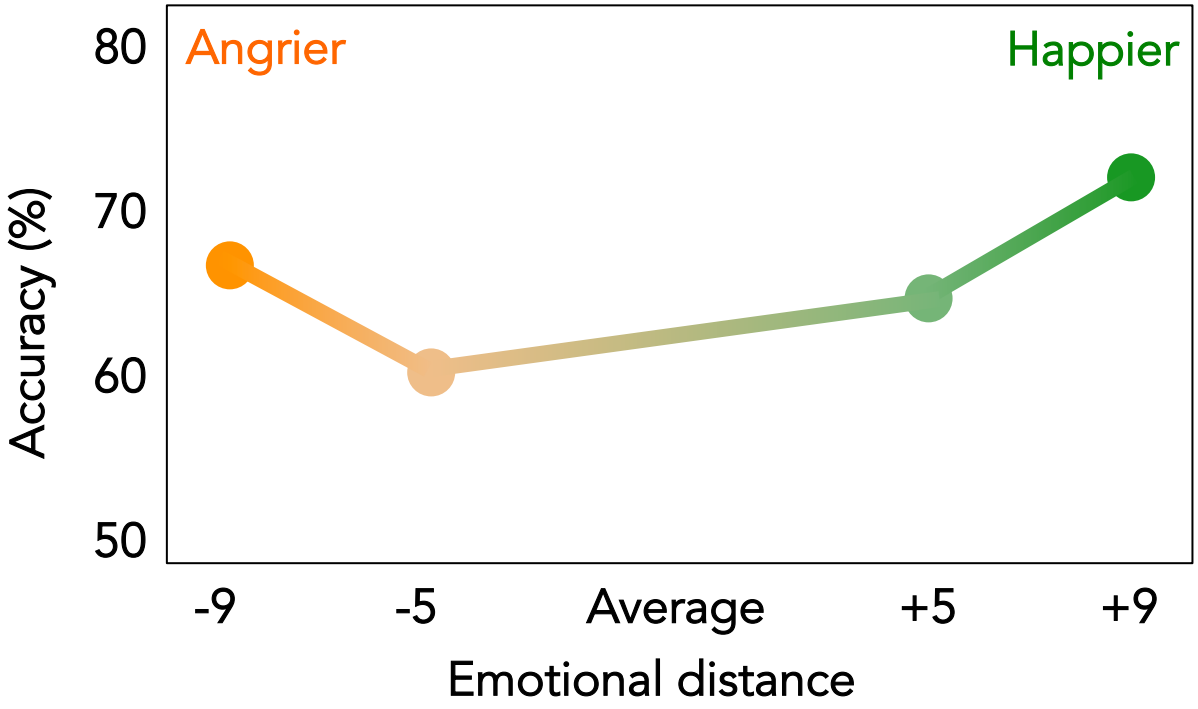
Demo: Which crowd would you rather approach?

The effect of emotional distance between crowds

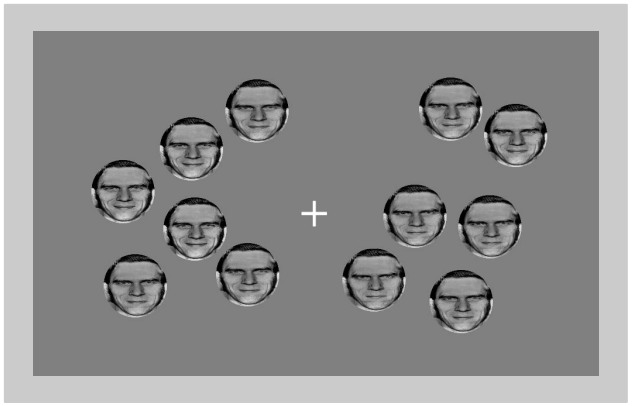
Happy (+5, +9) vs. Average

Angry (-5, -9) vs. Average

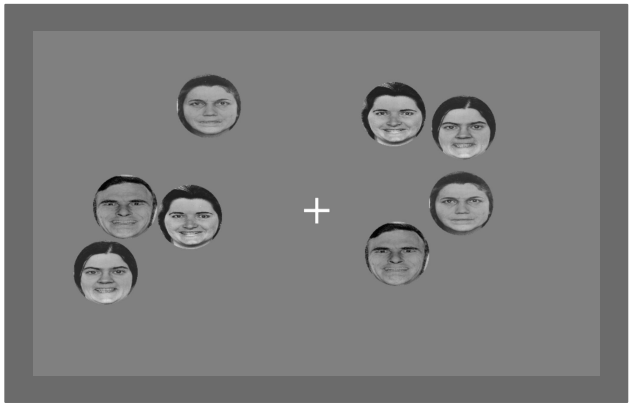
Emotional distance between crowds



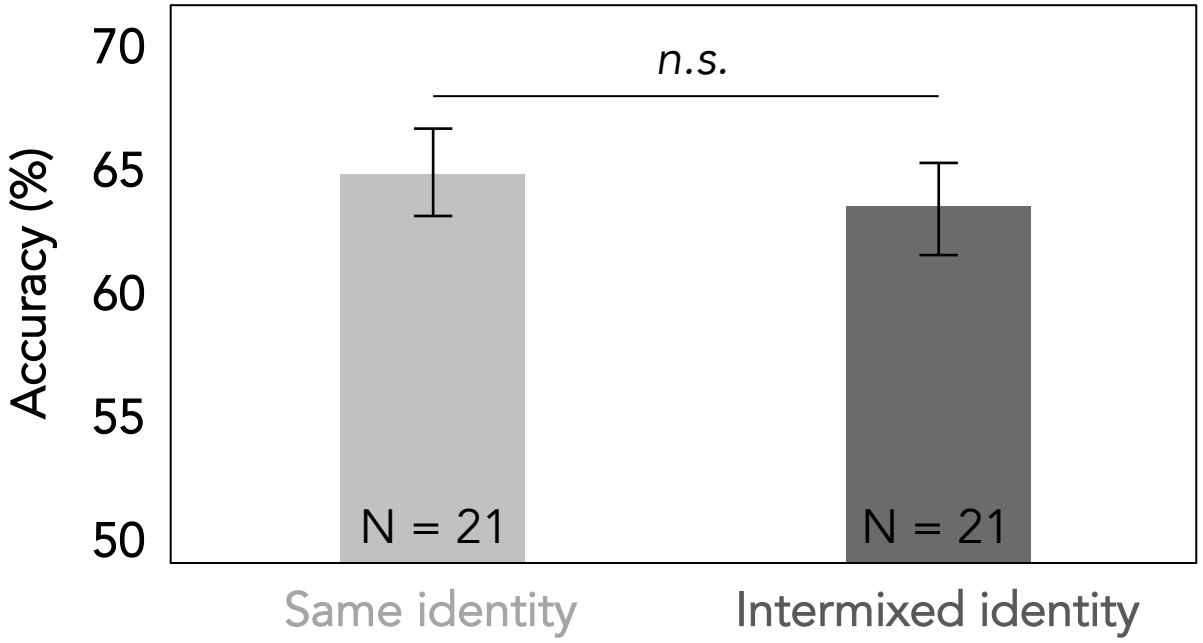
No interference of facial identity



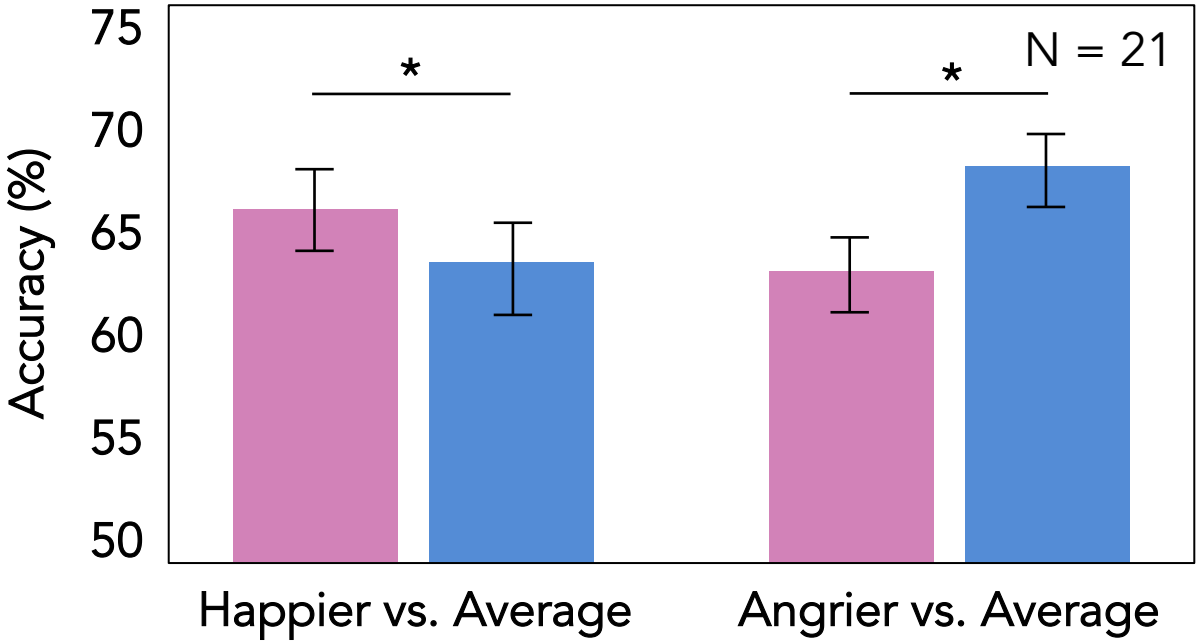
Same identity



Intermixed identity

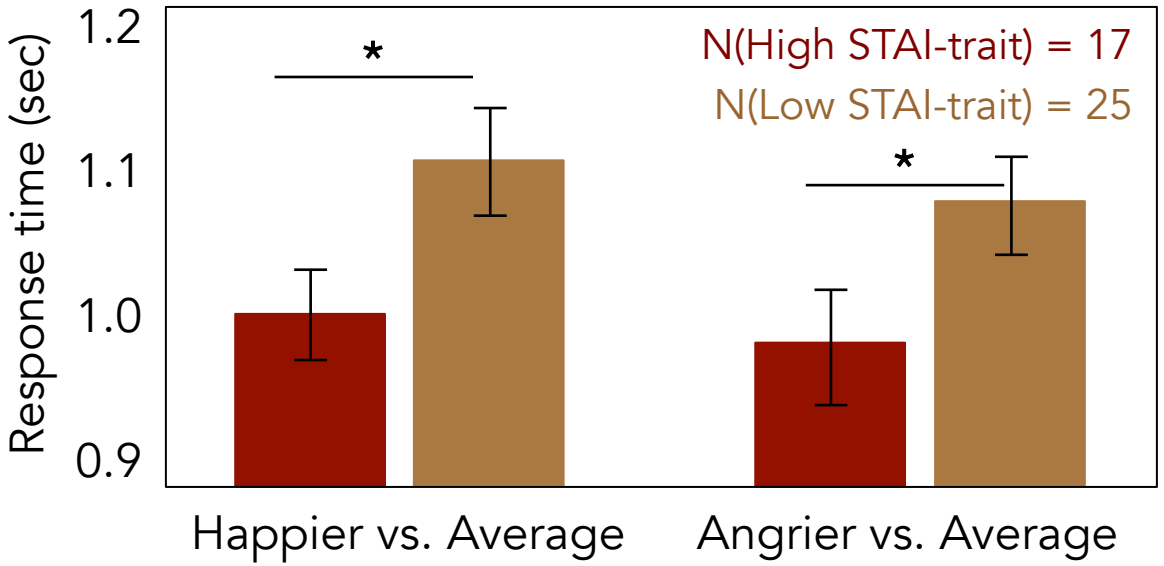


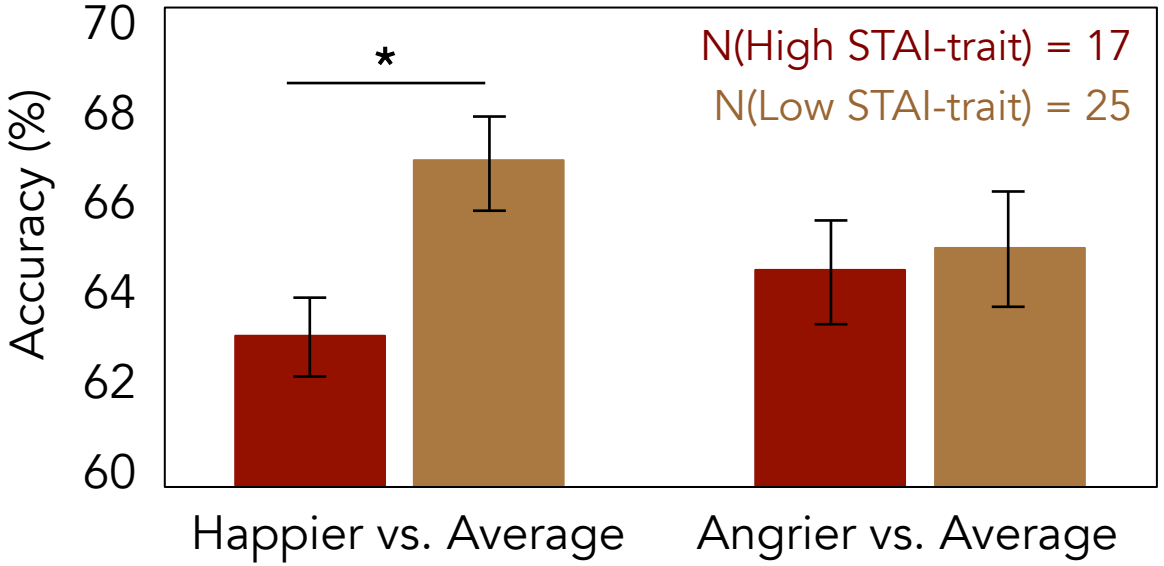
The effect of gender of a crowd



Happy female crowds and **angry male** crowds were identified more accurately.

High-anxiety people vs. low-anxiety people

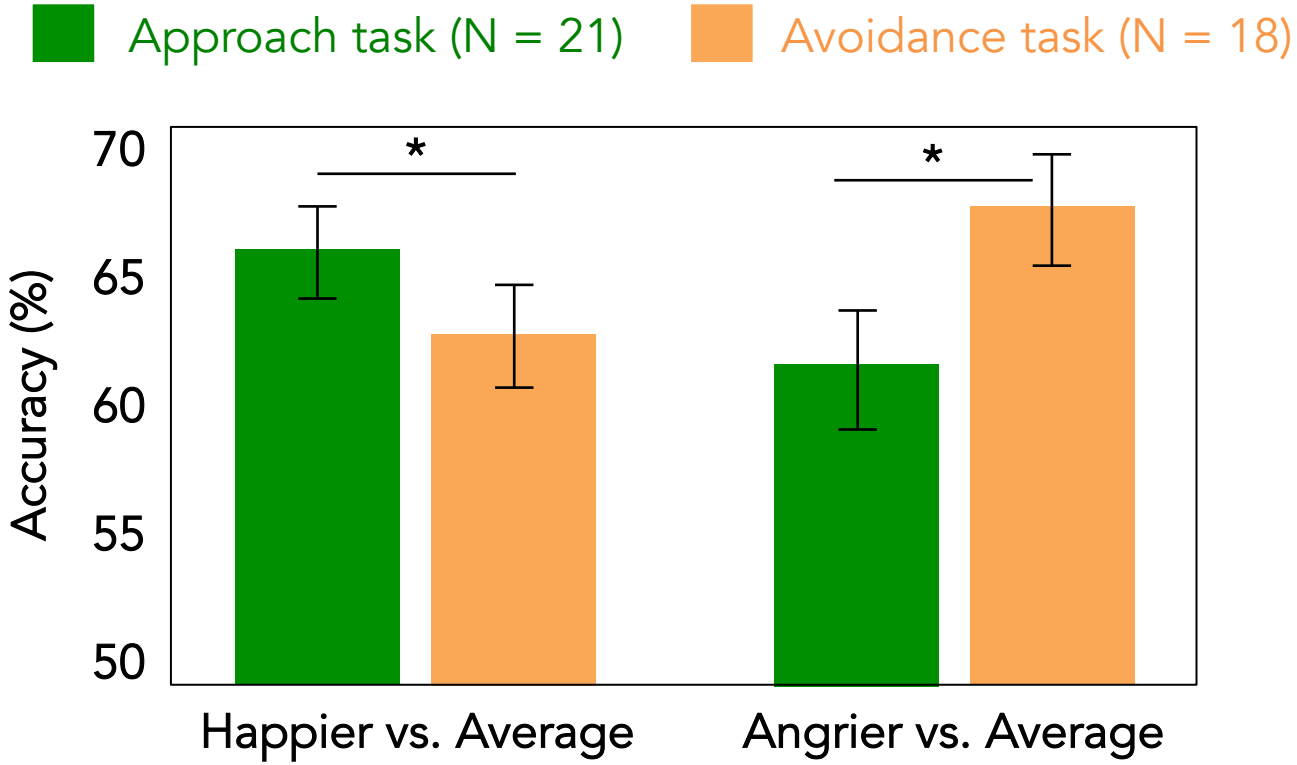




[1] High-anxiety people responded faster than low-anxiety people.

[2] High-anxiety people made more errors for happier crowd (but not for angrier crowd)

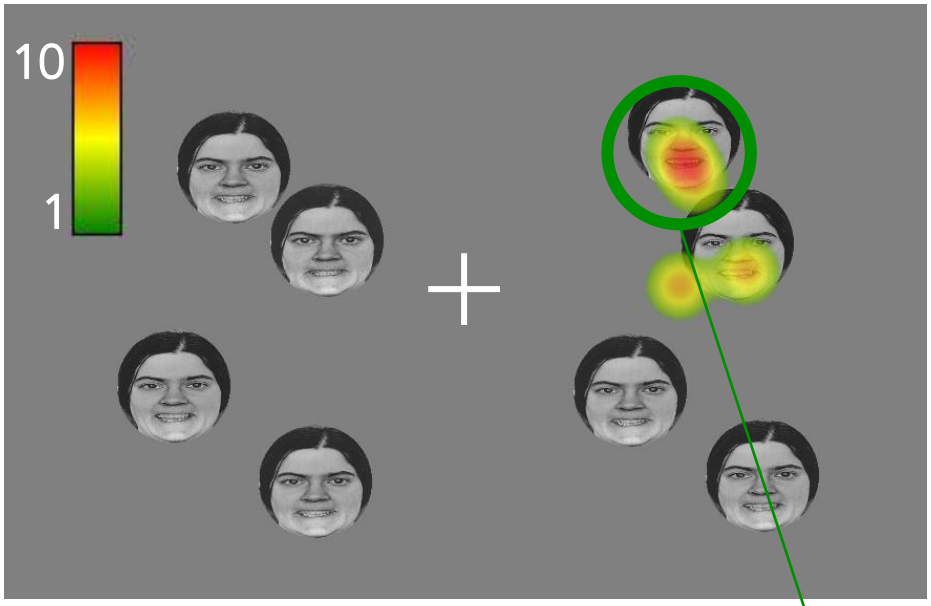
The effect of the task goal - accuracy

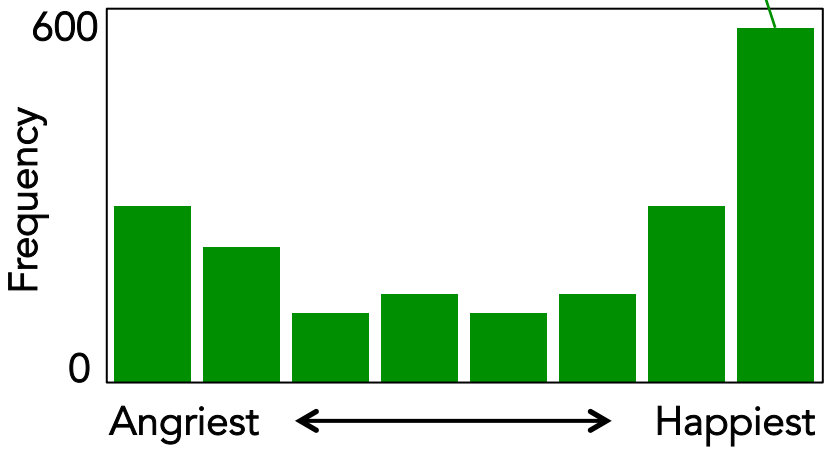


- When the task was **approach**, subjects were more accurate for **Happier** vs. Average.
- When the task was **avoidance**, subjects were more accurate for **Angrier** vs. Average.

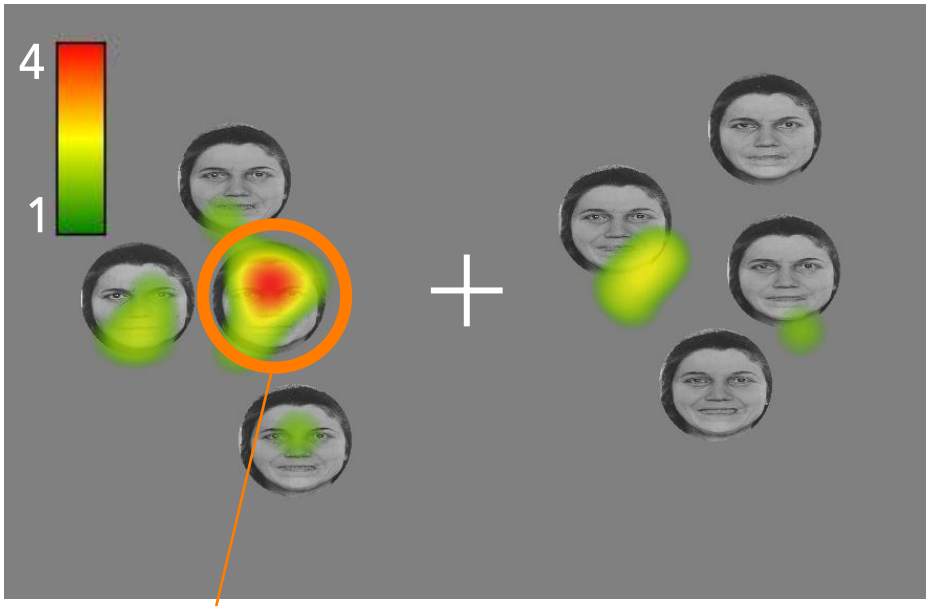
The effect of the task goal – initial eye gaze

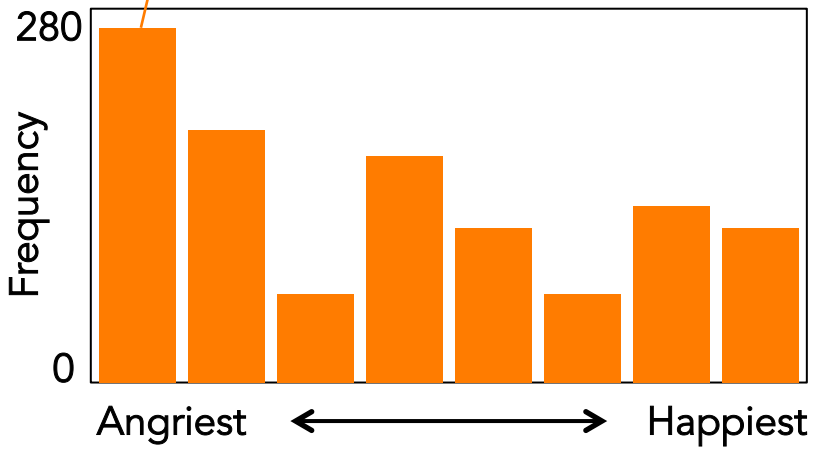
Approach task (N = 18)



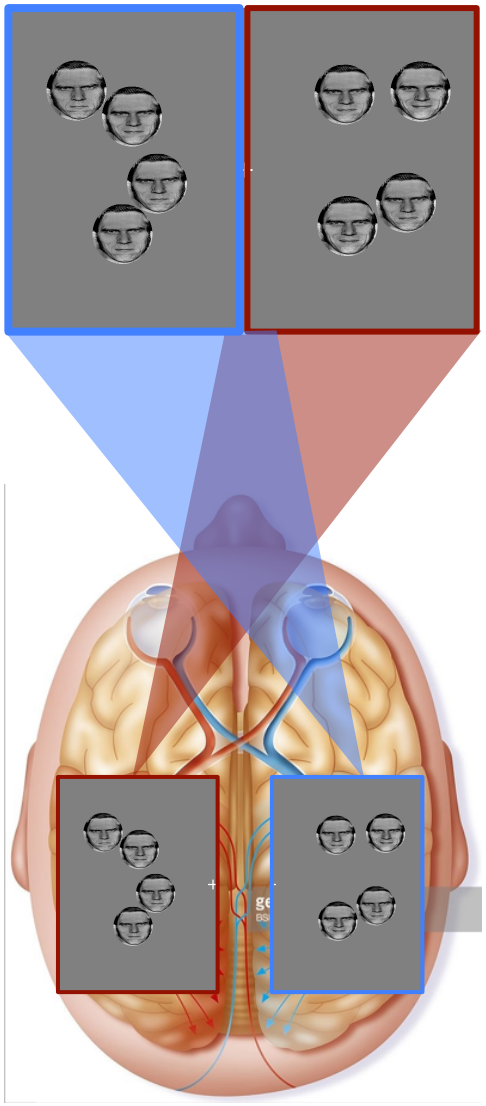


Avoidance task (N = 9)





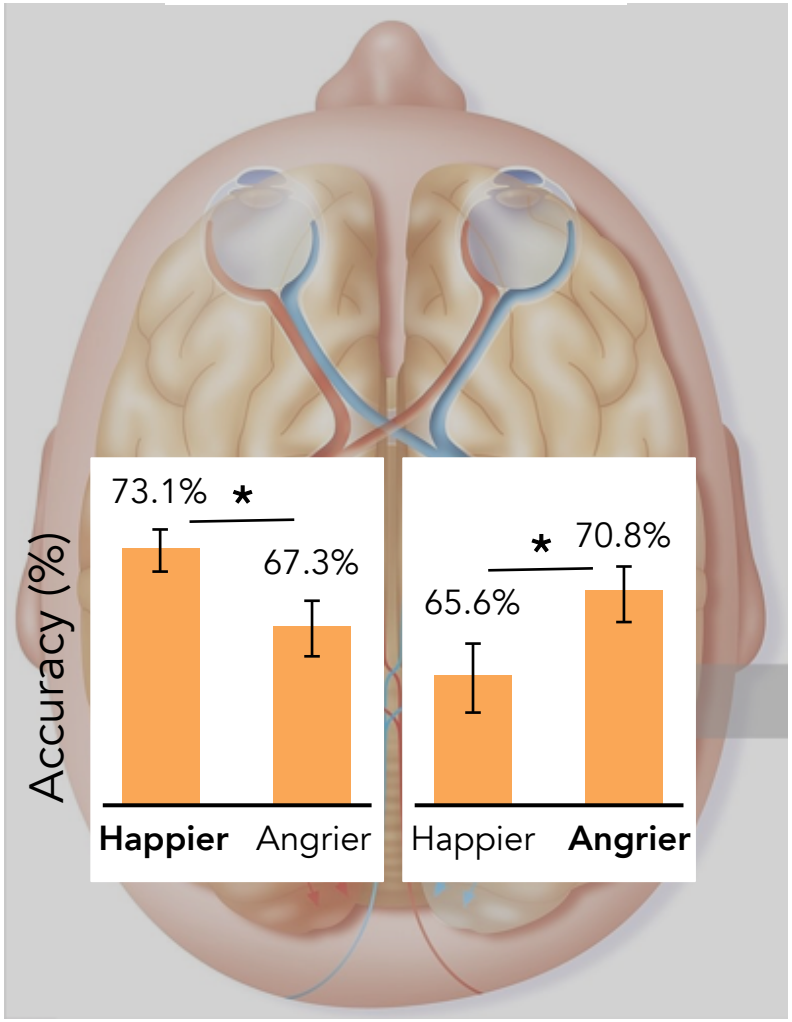
Hemispheric lateralization for threat perception

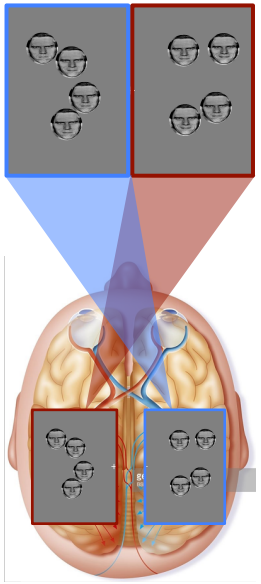


Right hemisphere dominance for threat perception

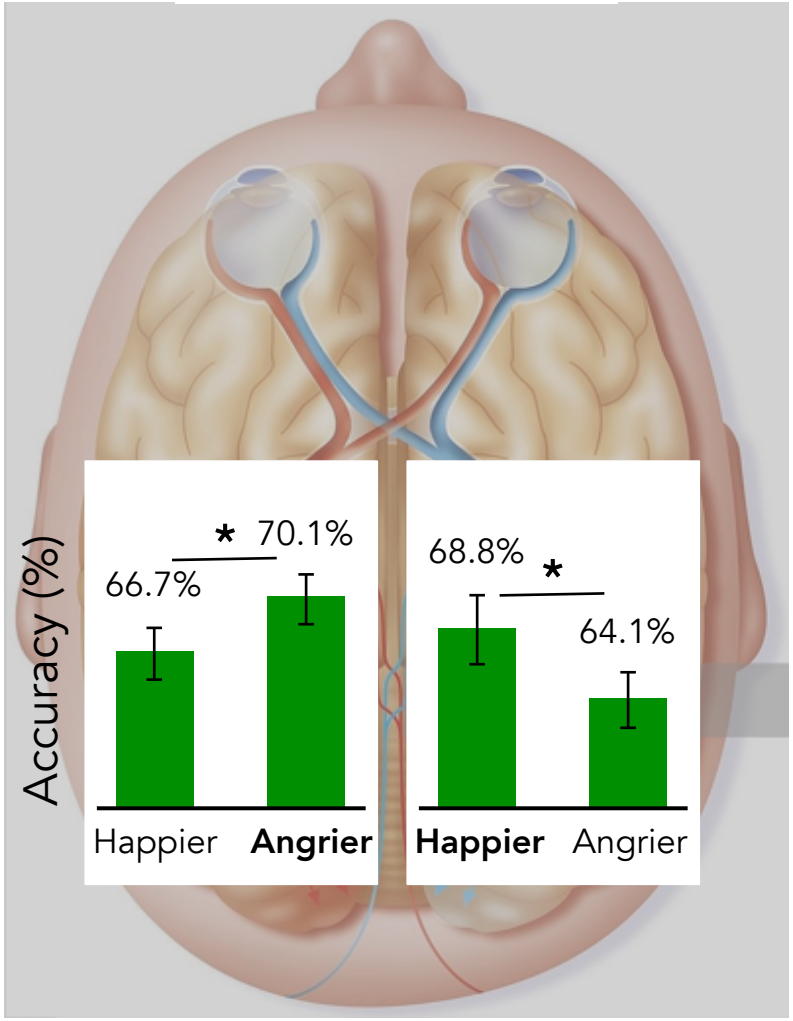
Task goal modulates the laterality effect

Avoidance task



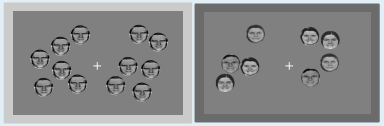


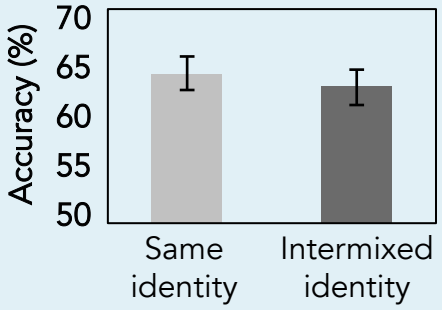
Approach task



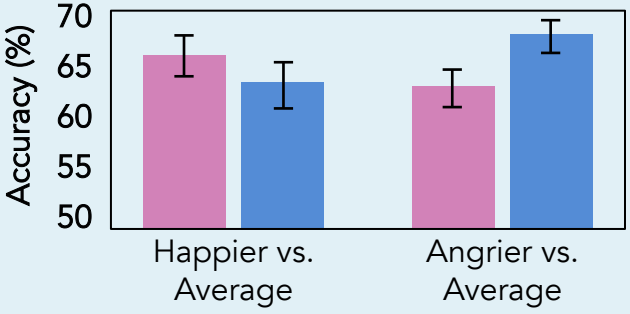
Summary

[1] Facial identity

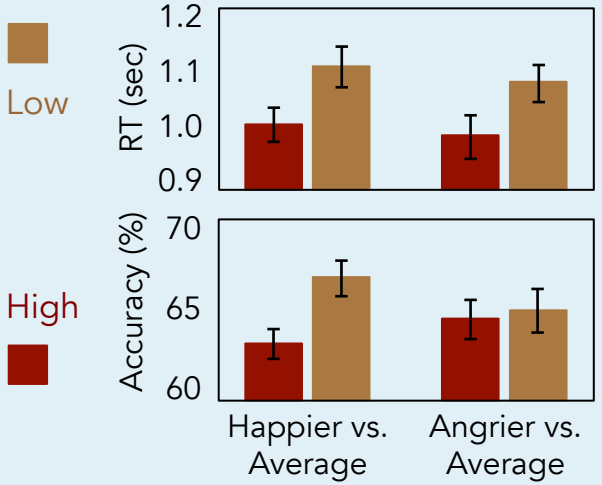




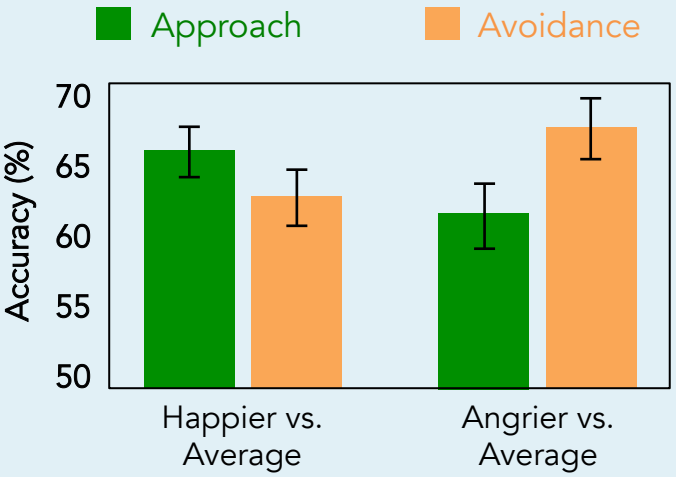
[2] Gender of a crowd

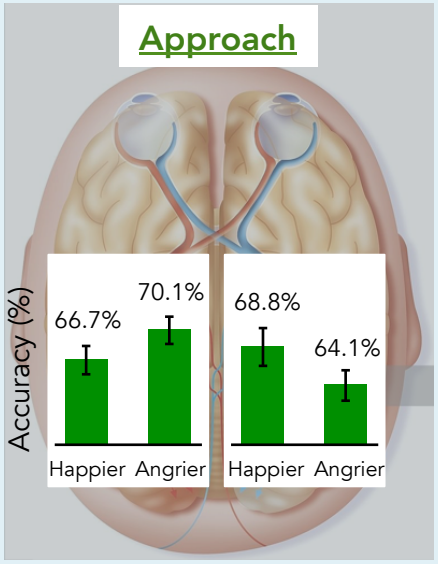


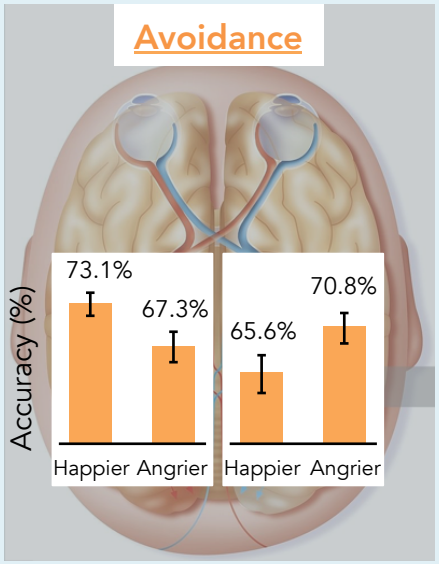
[3] Viewers' anxiety level



[4] Effect of the task goals







Thank you

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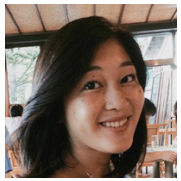

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