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
- Viewers’ anxiety level
- Gender of a crowd
- Viewers’ goals and intent

- 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

![Graph showing the effect of emotional distance on accuracy.](image-url)
No interference of facial identity

Same identity

Intermixed identity

Accuracy (%)

<table>
<thead>
<tr>
<th></th>
<th>Same identity</th>
<th>Intermixed identity</th>
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</thead>
<tbody>
<tr>
<td>Same identity</td>
<td>65</td>
<td>55</td>
</tr>
<tr>
<td>Intermixed identity</td>
<td>60</td>
<td>n.s.</td>
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N = 21

n.s.
The effect of gender of a crowd

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

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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)
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)**

- Frequency: 600
- Angriest: 10
- Happiest: 1

**Avoidance task (N = 9)**

- Frequency: 280
- Angriest: 4
- Happiest: 1

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The diagram illustrates the initial eye gaze for two tasks: Approach and Avoidance. The left panel shows the Approach task with a higher frequency of eye gazes towards the happiest face, indicated by a green color. The right panel shows the Avoidance task with a higher frequency of eye gazes towards the angriest face, indicated by an orange color.
Hemispheric lateralization for threat perception

Right hemisphere dominance for threat perception
Task goal modulates the laterality effect

**Avoidance task**

- Happier: 67.3%  
- Angrier: 70.8%  

**Approach task**

- Happier: 66.7%  
- Angrier: 64.1%  

* Indicates statistical significance.
**Summary**

[1] Facial identity

- Same identity
- Intermixed identity

[2] Gender of a crowd

- Happier vs. Average
- Angrier vs. Average

[3] Viewers’ anxiety level

- Happier vs. Average
- Angrier vs. Average

[4] Effect of the task goals

- Approach
- Avoidance

- Happier vs. Average
- Angrier vs. Average

Accuracy (%).

- Happier
- Angrier
Thank you

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