Does drawing faces make you a super-expert of faces? An investigation of face perception and recognition abilities in visual artists

Christel Devue, Catherine Barics & Serge Brédart

Background

Face processing abilities would range from very poor (i.e. developmental prosopagnosia) to outstanding performance (i.e. super-recognizers)\(^1\). Highly physionomist people seem to show a larger face inversion effect compared to controls, suggesting a link between face recognition skills and the amplitude of the effect. Through the practice of portraiture and the close attention paid to the shape of the head, the facial features and their configuration to reach a good likeness of a person, artists might perform like «super-recognizers».

Methods

Participants

- **N = 21; 11 artists (M = 26 years ± 4), 10 controls (M = 26 years ± 3)**
- Artists drew portraits for 8.5 years ± 5
- They devoted 62% ± 23 of their practice to faces and 33% ± 18 to portraits/caricatures

Measures and tasks

- **Self-reported face processing abilities questionnaire** 37 items, 7-point Likert scale (e.g. «I recognize people I have only encountered once at first sight»)
- **Cambridge Face Perception Test**\(^2\)
  - Arrange 6 faces according to their degrees of likeness to a target
- **Cambridge Face Memory Test – Australian**\(^3\)
  - Retrieve 1 out of 6 studied targets among 3 more and more degraded controls

Results & Discussion

Face processing questionnaire: Artists reported better face recognition abilities (M = 204) than controls (M = 159); Mann-Whitney U test, z = 3, p < 0.005.

- **Perceptual matching of Houses vs. Faces** (Upright/inverted)
  - Image 1 (1000 ms) → Mask (750 ms) → Image 2 (3 trials)
  - **Houses**
    - “Same” pair (36 trials)
    - “Different” pair (36 trials)
  - **Faces**
    - “Same” pair (36 trials)
    - “Different” pair (36 trials)

- **Mental rotation**
  - Same – different judgment on pseudo 3D figures\(^4\) presented side by side
  - Rotation on the X (50 trials) or on the Z axis (50 trials)
  - 5 angles (0, 45, 90, 135 and 180°)

- **Perceptual matching task**
  - **Accuracy**
    - Artists - Up vs. Controls - Up
    - Artists - Invs vs. Controls - Invs
  - **Mean RTs (ms)**
    - Artists - Upright vs. Controls - Upright
    - Artists - Inverted vs. Controls - Inverted

- **Perceptual matching of Category X Orientation**
  - **Accuracy**
    - Groups: artists > controls
  - **Mean RTs (ms)**
    - Groups: artists > controls

- **Mental rotation task**
  - **Accuracy**
    - Artists X vs. Controls X
    - Artists Z vs. Controls Z
  - **Rotation angle in degrees**
    - Artists X vs. Controls X
    - Artists Z vs. Controls Z

- **Similar processing time for artists and controls but artists are more accurate**

Conclusion

Artists who draw portraits on a regular basis report better face recognition abilities. They also show better face perception skills as well as better perceptual skills in general (see 5) in terms of accuracy, which sometimes relied on longer processing times (see perceptual matching task). These better perceptual abilities extend to better face recognition abilities.

The absence of differential inversion effect in artists might indicate a quantitatively but not qualitatively different facial processing due to expertise in this group compared to controls.

References


Contact information: cdevue@ulg.ac.be