The effect of orientation and familiarity on detecting Thatcherized faces

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Background

- Familiarity modulates face identification (Johnston & Edmonds, 2009)
  - The identification of familiar faces is effortless and automatic
  - The identification of unfamiliar faces is difficult and error prone
- Are familiar and unfamiliar faces processed qualitatively different?
  - Familiar faces are processed more holistically
    - Limited experimental evidence
- Inversion and Thatcherization
  - Inversion disrupts holistic processing of faces (e.g., Rossion & Boremanse, 2008)
    - Change in the processing at around 90°
  - The Thatcher illusion seems to reflect orientation specific mechanisms (Psalta et al., 2014)
- If the processing of familiar and unfamiliar faces is similar
  - The effect of Thatcherization and vertical orientation should be similar across both types of faces

Methods

- 96 participants
- 30 familiar and 30 unfamiliar faces
- Is the face Normal or Thatcherized?

Results

- Similar drop in performance at 120° in familiar and unfamiliar faces
- Better discrimination of unfamiliar faces
- Relatively linear drop in performance for normal faces
- Similar for familiar and unfamiliar faces
- Strong drop in performance
- Better performance for unfamiliar faces from 120°

Discussion

- The similar drop in discrimination performance for familiar and unfamiliar faces suggests similar holistic processing
- Better performance for unfamiliar faces suggests enhanced featural processing for unfamiliar faces