

Hemispheric Effects in Facial and Emotional Perception

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Abstract

This study investigated the effect of hemispheric field upon the perception of normal and Thatcherized (i.e. faces with inverted mouth and eye features) faces. Faces were presented on PowerPoint slides at 12 respective angles (0 to 330 degrees rotation) for 0.20 seconds in either the left or right visual field. Normal faces were seen as happier than distorted with scores in both groups differing significantly based on hemisphere and angle.

Prevailing Theories

The prevailing evidence is that faces are processed either locally in parts (eyes, nose, mouth) or globally by the relationships between parts. Emotional processing theories include the valence hypothesis (positive emotions processed in left hemisphere, negative in the right), the approach-withdrawal hypothesis (approach emotions processed in the left hemisphere, withdrawal in the right), and the right hemisphere hypothesis (all emotions processed in the right hemisphere) (Adolphs, Jansari, & Tranel, 2001; Quaranta, Siniscalchi, & Vallortigara, 2007; Natale, Gur, & Gur, 1983).

Method

Participants

Twenty-two participants, 18 female, 4 male, took part by signing up through SONA or the Psychology research participation night. All were 18-25 years of age.

Materials

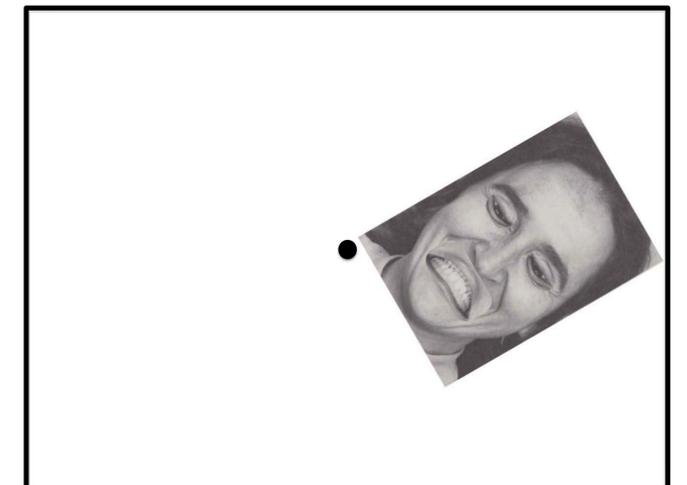
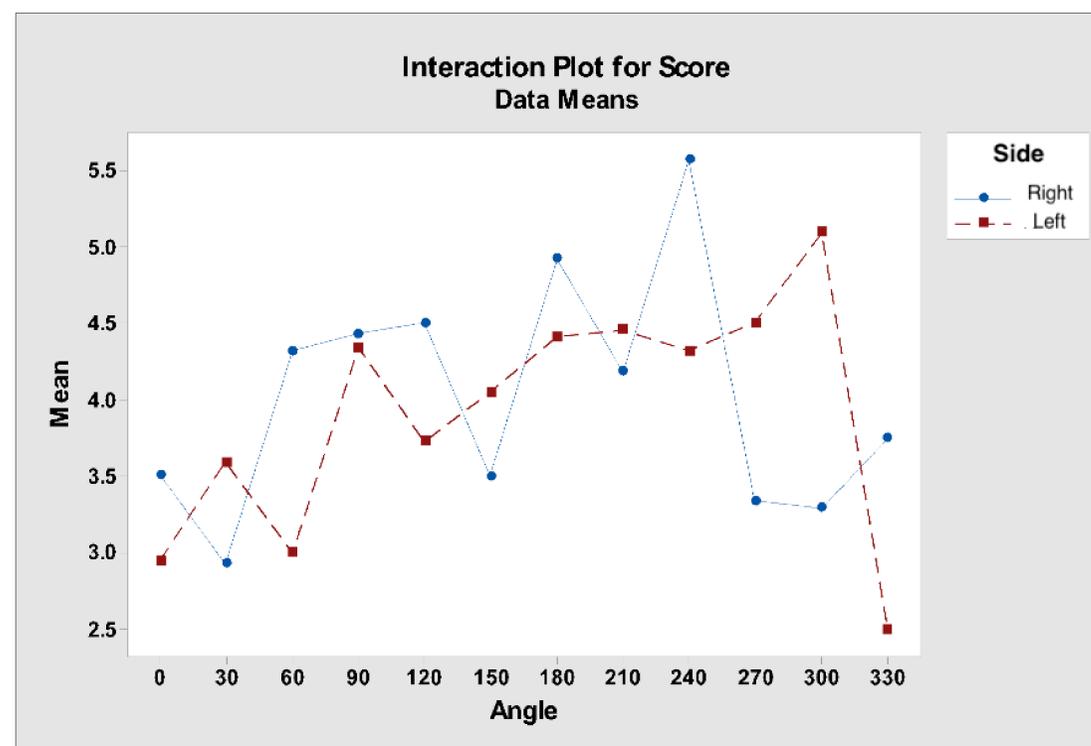
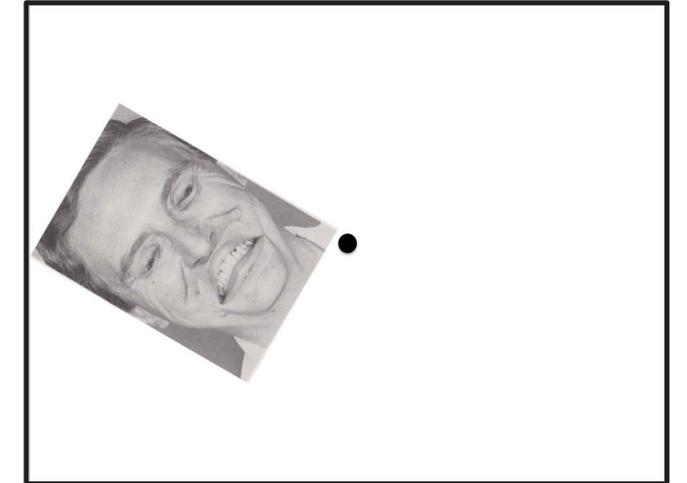
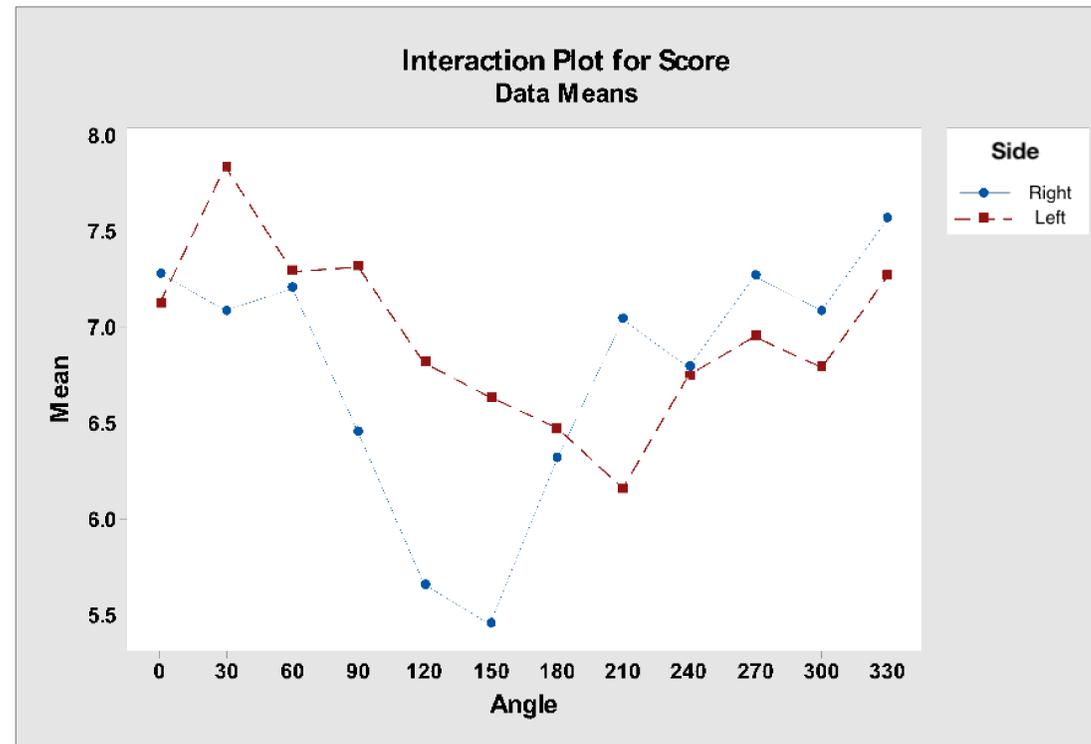
Two happy faces were chosen at random from the pool of happy faces in Ekman and Friedman's *Unmasking the Face*, 1 male and 1 female. Faces were presented as normal happy faces or as distorted "Thatcherized" faces. A total 112 faces were presented on PowerPoint slides with a blank background and centered focal point.

Procedure

Participants sat at a computer with a blank PowerPoint slide with a centered focal point. Participants were instructed to look only at the focal point for the entirety of the study. Participants were instructed to hit the down-key of the keyboard to trigger the presentation of a face for 0.20 seconds. After the face flashed, the blank focal point slide returned and participants were instructed to rate the face on a scale of 0 (grotesque) to 10 (happy).

Results

Normal faces were generally seen as happier than distorted faces, and normal faces differed significantly based on hemisphere and angle ($F(11,1187)=2.17, p=.01$), as did distorted faces ($F(11,1187)=4.55, p=.00$) with a Tukey's post hoc revealing significant differences between angles 60 and 300 ($F(1,151)=20.61, p=.00$). There was a general trend of misidentifying emotions when the mouth was tilted away from the focal point, indicating that the mouth may be essential in identifying happiness.



References

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