

## Title: Facial expression illusion with crossed/uncrossed eyes

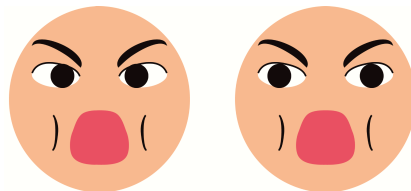
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### Abstract:

This illusion demonstrates that just a slight displacement of the positions of the eyes inwards or outwards can affect the perceived emotions in faces. The figure below and the movie (AVI file) show that an a face appears “angry” when its eyes are crossed, positioned close together, while it appears rather “fearful” when its eyes are positioned far apart. Interestingly, the perception of emotion in faces can be enhanced by the congruency between the facial expression and the positions of the eyes in terms of the approach/avoidance behavior implied by them. Anger tends to co-occur with approach behavior, whereas fear tends to co-occur with avoidance behavior. Meanwhile, the eyes are crossed when one has approached an object, whereas they are often normal when one has avoided the object. When reading other’s emotions from their facial expressions, we may unconsciously rely on the approach-avoidance behavior implied by the positions of the eyes. One alternative explanation could be that the displacement of the eyes’ positions may induce certain illusions in the geometric perception of other parts of faces (e.g., shapes of eyebrow or eyelid), which in turn could affect the perceived emotions in them. The same illusion can be experienced with photographs of real faces, including one expressing positive emotion (JPEG file\*). Here, the faces may appear more angry or happy with crossed eyes (left), whereas the face may appear more fearful with normal eyes (right).



The face on the left and right are identical except for the eyes’ displacement. The left face with crossed eyes appears angry, whereas the right face with normal eyes appears fearful.

\* JPEG file was created by modifying the face images from the database (ATR-DB99).