

THE VARIATION IN ANGLE PERCEPTION DUE TO ANGLE SIZE, ANGLE ORIENTATION AND RATIO OF LINE LENGTH

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Abstract

Angle perception is important and fundamental for object perception. It is well known that angle perception is affected by a lot of factors. We investigated the impact of angle size (55°, 60°, 65°, 75°, 85°, 90°, 95°, 105°), angle orientation (0°, ±60°) and ratio of line length (1:1, 1:2, 1:4) on angle perception. Angle orientation means orientation of bisector or it could be considered orientation of angle lines. The results of experiment showed that angles close to 90° is perceived more accurately. For condition of smaller differences in lengths of both sides, angles were estimated to be more precise than in larger differences between lengths of both sides. These results were explained that right angle and smaller differences of line lengths are familiar in everyday object perception. It means that though angle perception is low level visual information process, it could be affected by cognitive process such as familiarity. When the angle orientation was ±60°, angles were judged to be more accurate than when the orientation of angles was 0°. In case angle orientations were ±60°, the orientations of angle lines were close to horizontal or vertical. On the other hand, if angle orientations were 0°, the orientations of angle lines were oblique (in other words, far from horizontal or vertical) in our experiment's angle sizes. This result means that orientations of component lines of angle figure take a more important role than orientations of whole angle figure in angle perception. These imply that oblique effect works in perception of whole figure or object like angles.

Keywords: angle perception, angle size, angle orientation, ratio of line length, oblique effect