Sheffield Hallam University

The slalom illusion in the context of illusory lines.

GHEORGHEOS, Tamara, REIDY, John and SORANZO, Alessandro

Available from Sheffield Hallam University Research Archive (SHURA) at:

http://shura.shu.ac.uk/9293/

This document is the author deposited version. You are advised to consult the publisher's version if you wish to cite from it.

Published version

Repository use policy

Sheffield Hallam University Research Archive
http://shura.shu.ac.uk

The slalom illusion in the context of illusory lines

In the slalom illusion, the straight trajectory of a dot crossing a pattern of tilted lines is perceived as being sinusoidal (Cesaro and Agostini, 1988, P&P, 60(3),518-523). The perceived trajectory of the moving dot bends to enter the line perpendicularly, generating a local distortion at each line trajectory intersection. The magnitude of the illusion is known to be affected by the angle of intersection, the velocity of the moving dot and the distance between the inducing lines. In the present research, we investigate whether the slalom illusion persists when replacing the inducing lines with Kanizsa illusory ones and the impact of this on the magnitude of the illusion. There is evidence in the literature that V1 and V2 neurons respond to illusory contours, which would suggest that the illusion should persist in the presence of illusory lines. However, the response to illusory lines in V1 is weaker and delayed when compared to V2 (Lee & Nguyen, 2001, PNAS, 98(4), 1907-1911), and given V1 neurons' implication in processing motion, it is expected that if the slalom illusion persists in the illusory condition its magnitude would be negatively affected. Results are discussed in the context of early perceptual processing and global integration.