Crowding by invisible flankers

Arielle Veenemans, Patrick Cavanagh, Ramakrishna Chakravarthi
Laboratoire Psychologie de la Perception, Université Paris Descartes, Paris, France
Psychology and Neural Science, New York University, New York, USA

In this study the effect of masked flankers on crowding was explored using a moving array of letters and masks. A target letter moved briefly in a circular path around fixation. The target was flanked radially by two other letters, one on the inside and one on the outside that moved along with and crowded the target. Each flanker was preceded and followed (spatially and temporally) along its circular path by noise squares, which functioned as pre- and post-masks rendering the flankers invisible. Subjects were instructed to report the identity of the target. Observers failed to accurately report the identity of the target when it was crowded by flankers despite the fact that these flankers were masked and not visible themselves. A second test where the flankers were removed and only the masks were presented along with the target, confirmed that subjects were much more accurate in reporting the target when it was not crowded by the invisible flankers.