sighted but not blind individuals can form global representations of spatial layout based on verbal descriptions of an imaginary environemt

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Abstract

Human navigation relies on an array of complex cognitive processes. Integral to this is the ability to imagine an environment, then orientate oneself within it relative to imagined features. This is particularly important to those who navigate the world without vision. The cognitive mechanisms for this process remain unclear and thus require further investigation. In this study, we investigated the ability of individuals to form mental representations of an environment based on verbal descriptions. Blind and sighted individuals took part in two separate tasks. In task 1, participants were required to draw the layout of a described environment, in task 2, judge their orientation relative to a global reference point in an imaginary path integration task. In line with previous non-verbal description studies investigating navigation in the blind, sighted not blind individuals could form global representations of spatial layout and orientation that may aid flexible wayfinding.