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Distributing targets on two depth planes increases tracking capacity in Multiple Object Tracking

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Abstract: The number of targets tracked in a Multiple Object Tracking (MOT) task is limited by several factors, including the number of targets, object speed, and display crowding. Previous studies suggest that visual hemifields may have independent tracking resources, which is shown by increased tracking capacity when the targets are segregated between left and right hemifields (Alvarez & Cavanagh, 2005).

In the current study, we tested whether or not segregation by depth increases tracking capacity. We used stereoscopic glasses to create a 3D MOT display with two depth planes. Observers tracked objects on both planes under varying conditions (number of targets, speed) and in 2D. Tracking capacity significantly increased when targets were distributed on two planes (4