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REPRESENTATIONAL MOMENTUM IS IMPERVIOUS TO KINEMATIC BUT NOT DYNAMIC VARIABLES IN SCHIZOPHRENIC PATIENTS

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When people are shown a moving object that suddenly disappears and are further instructed to locate its vanishing position, a systematic spatial error in the direction of the motion is observed. Entitled Representational Momentum (RepMo), this phenomenon seems to be influenced by low-level perceptual mechanisms and high-level cognitive aspects alike. Available neurophysiologic data has pinpointed area MT/V5 as required for the emergence of RepMo, a cerebral structure known to be compromised in schizophrenic patients. Although much is known about the variables that determine RepMo's magnitude (e.g., target's velocity, implied mass, direction of movement along or against the gravity axis), few studies attempted to measure RepMo with schizophrenic patients and, those that were published, seldom used a systematic manipulation of such variables. The present study intends to fill this gap. Both schizophrenic patients and normal controls participated in a repeated measures experiment where a black square, with 30, 60 or 90 pixels side, was shown moving at a constant velocity of 150, 300 or 450 pixels/s. After covering a distance of 300 pixels, either downwards, upwards, leftwards or rightwards, it disappeared. Participants were required to locate the last seen position, using a mouse that allowed control over a cross-shaped cursor. Results showed that dynamic variables (such as gravity and implied mass) didn't differ between the groups. Notwithstanding, kinematic variables (velocity) didn't show any significant effect in the schizophrenic group. These results are discussed within the distinction between perception-for-action and perception-for recognition, thus suggesting an impairment of the former in schizophrenia.