Posters

Normalized eye movement metrics across motor simulation states: a difference of perspective?

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Introduction:
Eye movement metric congruency across motor simulation states is appealing for proponents of shared representation models; data supporting this contention are, however, conflicting. This study used a novel method for normalizing and analyzing gaze metrics to compare eye movements during action observation (AO) and motor imagery (MI) from allocentric and egocentric perspectives.

Method:
Spatial and temporal fixation data were collected as participants observed and imagined upper limb movements from two visual perspectives. The data in the four conditions were normalized for scale and orientation and segmented into three fixation point centers.

Results:
There were significant differences in the distribution of the means of the fixation point centers between AO and MI in the allocentric but not the egocentric perspective. Differences were also observed in the covariance of fixation-points within fixation centers between AO and MI between the two perspectives. There were also significant interactions for fixation duration and number of fixations in the two perspectives.

Discussion:
Eye movements across AO and MI conditions are more consistent from an egocentric perspective but information processing demand, irrespective of perspective, is reduced in MI.
Differences may be due to the greater control of goal outcome in the AO, egocentric condition.

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