

Kinematic cues for person identification from biological motion.

Cord Westhoff and Nikolaus F. Troje

We examined the role of kinematic information for person identification. Observers learned to name seven walkers shown as point-light displays, which were normalized by their size, shape, and gait frequency, either under a frontal, half-profile, or profile view. In two experiments we analyzed the impact of individual harmonics as created by a Fourier analysis of a walking pattern, as well as the relative importance of the amplitude and the phase spectra in walkers shown from different viewpoints. The first harmonic contains most of the individual information, but performance was also above chance level when only the second harmonic was available. Normalization of the amplitude of a walking pattern resulted in a severe deterioration of performance, whereas the relative phase of the point-lights is only used from a frontal viewpoint. No overall advantage for a single learning viewpoint was found, and there is considerable generalization to novel testing viewpoints.