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BEYOND YOUR OWN BODY: EXTENDING THE BODILY SELF TO THE NEUROAESTHETICS OF INTERACTIONS

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Background: Dance represents an ideal framework for neuroscientific investigations on body and movement representation. Several studies on single-body observation revealed a strong link between aesthetic appreciation, observer expertise, and objective movement features. Body-sensitive visual occipitotemporal brain areas appear to be modulated by visuospatial features of body dyads, such as their relative positioning. However, further exploration is needed to understand the role of emotional and semantic content in modulating body dyad visual processing and aesthetic responses to dancing dyads. Similarly, the potential influence of multisensory spatial (peripersonal space) representations on aesthetic evaluation is a novel hypothesis.

Aims: The current project investigated behavioural responses and neural correlates of the aesthetic, emotional, and semantic evaluation of non-symbolic (dance-like) body dyads as a function of their visuospatial complexity in non-dancer observers.

Method: The project used a multi-method approach, including motion capture for stimuli creation, participants' ratings, visuomotor training, and electroencephalography (EEG). Our approach integrated the "two-person neuroscience" perspective with classical observation studies and resulted in three studies. Stimuli were created by involving two contemporary dancers with a dance-inspired training, digitally capturing their movement kinematics, and quantifying visuospatial features between bodies. Individual evaluations of the stimuli were collected in all three studies. In Study 3, two groups of participants were engaged in two-person interactions (participant-confederate), allowing them to assume postures represented in the visual stimuli before observing (and evaluating) the body dyads during EEG recording.

Results: The aesthetic appreciation of body dyads depends on a combination of individual and objective features, including the shared interpersonal space between bodies (Study 1). Body dyads that are perceived as more interactive and meaningful appear to benefit from configurational processing (Study 2). Preliminary findings suggest that a short-term, intense visuomotor training, which facilitates an observer's spatial and somatosensory representation of the observed configurations, modulates body dyad processing (Study 3).

Conclusions: The dialogue and knowledge transfer between scientific and performative research appears to be a privileged gateway to social cognition studies.

Keywords: Neuroaesthetics, Body dyads perception, EEG, Visuomotor training, Dance

Publications:

Fanghella, M., Era, V., & Candidi, M. (2021). Interpersonal motor interactions shape multisensory representations of the peripersonal space. *Brain Sciences*, 11(2), 255. <https://doi.org/10.3390/brainsci11020255>

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