

Embodiment, music, and human evolution

Emiliano Bruner

Centro Nacional de Investigación sobre la Evolución Humana, Burgos (Spain)

Theories on extended cognition support an interpretation of mind as a process, namely a flow of information between brain, body and environment. In primates, evolutionary adaptations associated with vision and haptics point at the eye-hand system as a major interface between the nervous system and the external world. Cognitive extension and embodiment rely on specialized prosthetic mechanisms, including the integration of external elements into the body structure (dynamic touch) and into the body schemes (somatosensorial cortex). In hominids, such perceptual system has likely undergone important variations when tool use changed from habitual to obligatory, triggering technological evolution according to biocultural interactions. In this sense, musical instruments are a specific case of technological extension, in which somatic, visual and acoustic feedbacks generate an embodied experience rooted in emotional engagement and communication. The design of musical instruments is in fact particularly influenced by anatomical and morphological relationships associated with the body and with the integration between neural and somatic balance. These somatic relationships can be investigated according to evolutionary and cognitive principles.