



Kinaesthetic Coupling and Perception of Distal Object

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We propose a reformulation, in radically enactive terms, of the role of kinestheses in the construction of perceptual objects, the latter defined as being distinct, at a distance, and endowed with a spatial extension. This will lead us to consider the construction of exteriority on one hand, and of form on the other; we shall put forward the hypothesis that there are two distinct mechanisms, one for each of these aspects of the construction. These two mechanisms both involve the lived body, considered as the site where an internal coherence, in particular morphological, is constituted in an autonomous fashion. The first mechanism implies a distinction between reafference and exafference, and involves the construction of 3D schemes of action. The second mechanism, which concerns form, involves the auto-construction by the subject of a “quasi resistance” displayed by the distal object, and the construction of an operator of stretching which determines the deployment of the distal spatial appearance as deriving from the morphodynamics of the body. We shall present arguments in favour of our two hypotheses, first with respect to the (neuro)developmental and experimental literature (e.g. Buisseret et al., 1988), and then with reference to work carried out in the domain known as sensory substitution (Stewart et Gapenne, 2005). But we shall mainly focus on the second mechanism which could highlight in a new way perceptual aspects of tangibility and rigidity of the distal objects.

References

Buisseret, P., Gary-Bobo, E. & Milleret, C. (1988). Development of the kitten visual cortex depends on the relationship between the plane of eye movements and visual inputs, *Experimental Brain Research*, 72, 883-948.

Stewart, J. & Gapenne, O. (2004), Reciprocal modelling of active perception of 2-D forms in a simple tactile-vision substitution system, *Minds and Machines*, 14, 3, 309-330.

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