

Embodied spatial cognition

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Abstract

What does it mean for cognition to be embodied? The word "embodied" itself embodies two apt notions: "body" referring to how humans are built, and "em---ed" referring to the world human bodies inhabit. Now, given that we are necessarily and irrevocably embodied creatures, as are all creatures, that all our knowledge comes from the world through our bodies, what could this mean? The intent, presumably, is not a tautology. The implication of "embodied cognition" is that qualities of the body and the world affect the very core of the way we think over and above specific information about bodies and the world acquired through interaction with them. This suggests that an analysis of the general features and relations of the body and the world in which it interacts should give clues to the way we think. The embodied nature of mental representations and mental transformations will be discussed.

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Representations

Bodies: perceptually salient functionally significant parts; metaphoric uses (head, hand, arm, leg, feet, front, back); metaphoric uses.

Space around body. Spatial framework: relation of world surrounding body to body in terms of relative salience of body axes--head/feet, front/back, left/right--to axes of world, notably up/down axis of gravity; metaphoric uses in language and diagrams.

Operations

Two major perspectives, each accompanied by appropriate mental transformations. Each is based on a natural way of interacting with the world. Evidence will be culled from spatial descriptions, from reaction time tasks, from scanning images, and from brain imaging.

Embedded/route perspective accompanied by egocentric mental transformations

Overview/survey perspective accompanied by object-centered mental transformations.