

A critical look at the embodied
cognition hypothesis and a new
proposal for grounding conceptual
content

Bradford Z. Mahon, Alfonso Caramazza

Summary

- Embodied vs disembodied cognition hypothesis
- Experiments regarded as evidence for embodied cognition
- Alternative view

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What about justice, beauty, patience, etc?

Data generated “in support” of embodied cognition hypothesis

- Imaging
 - Showing sensory and motor activation accompanies conceptual processing
- Behavioral studies

'Direct' demonstrations of motor system activations

- Motor system activated when participants
 - Observe manipulable objects
 - Process linguistic stimuli with meanings related to body action
 - Observe actions of another individual
- Disembodied argument: Activation cascades from disembodied concepts to sensory and motor systems

Motor activation during conceptual processing

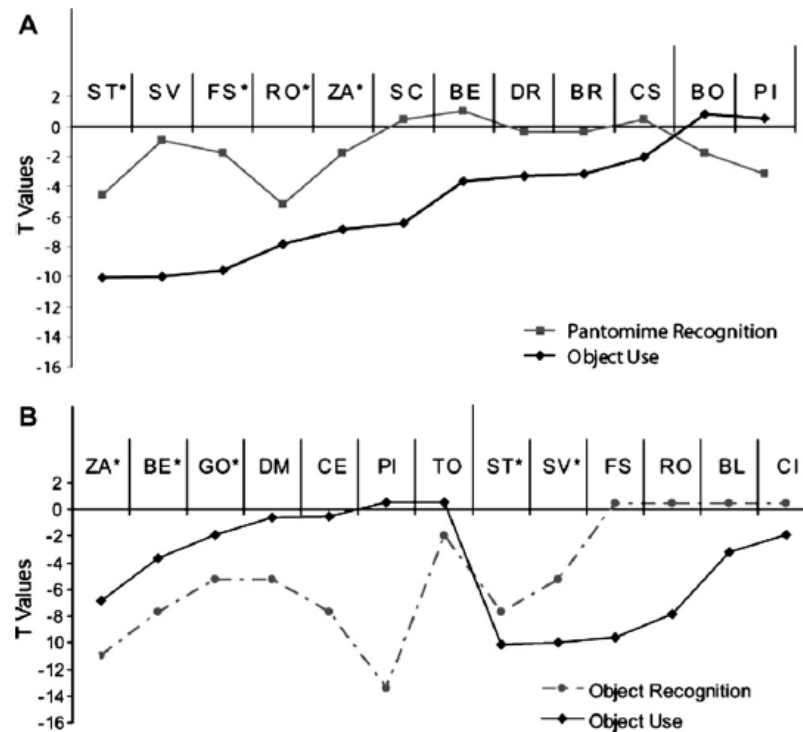
- Pulvermüller argues for embodied cognition; Activation in motor system is
 - Fast
 - Automatic
 - Somatotopic

Motor and sensory activation by sentence comprehension

- 'Action-sentence compatibility effect'
 - Semantic analysis involves motor simulation?

Impairments

- Apraxia patients
 - Impaired for using objects despite unimpaired for
 - naming object
 - Recognizing pantomimes associated with use of objects



Conclusion on evidence

- Impairments falsify the strongest forms of the embodied cognition hypothesis
- Other theories could also accommodate the empirical findings

Their alternative view

- ‘Grounding by interaction’
 - Sensory and motor information colors processing, provides relational context
 - Specific sensory and motor representations complements the ‘abstract’ conceptual representations
 - May be part of many different ‘abstract’ representations, dependent on use.