

Grounded cognition

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- Reaction to **classical symbolic models** of the mind
 - cognition is computation on amodal symbols in a modular system, independent of the brain's modal systems
- Most accounts focus on the role of **simulation in cognition**
 - Reenactment of states acquired during experience with the environment
 - Core form of computation throughout the brain
 - Recent development
- Misperceptions - not only recording systems – they have ability to represent
 - Not exclusive to sensory-motor representations of bodily states
- Cognitive Linguist Theories – some of the first
 - language reflects environment, bodily states, culture, *experience*
- Theories of situated action
 - Central roles of perception and action in cognition
 - Often adopt dynamic systems as their architecture
 - *Fixed representations* do not exist in the brain
- Cognitive simulation theories
 - Perceptual Symbol System (PSS) – grounded theories can implement symbols
 - Single, multimodal representation system in the brain supports diverse forms of simulation
 - *Differences* between cognitive processes reflect difference in mechanisms that *control* the specific simulation
 - Memory – serves to control situated action. Patterns stored in memory reflect the nature of
 - Social simulation – theory of mind, simulate our minds to understand others
- Empirical evidence - paper goes through many examples
- Big questions:
 - Does the brain contain amodal symbols? Is grounded cognition simply peripheral
 - Does simulation *implement* symbolic operations? Little evidence for amodal symbols
 - Is there a *single* representational system? Distributed representations
 - Abstract concepts – do not appear modal
- Key answers needed
 - Overachieving, non demonstrative, cohesive models of grounded cognition
 - Testable, computational
 - How will this affect current models of cognition? Do they have to be reexplained or will grounded cognition form as a glue