

From Embodiment to Cognitive Extension

The active body

- The computation that gets done in interaction of brain body and world, does not have to be done by the brain alone
 - Decentralized mindset.
 - A new place to look for the origins of organization.
- Walking taking advantage of the dynamics of the body. Thelen & Smith.
- Inhabit rather than control the body

Active Sensing

- Perception is not something that happens to us, it is something we do. (Noe, 2004)
- And we only sense when needed.
- Deixis, binding objects in the world to conceptual entities.
 - Because we must establish and maintain connection, coupling between brain, body and world.
- Sensing for coupling – catch a fly ball.
- Taking advantage of the structure of multimodal signals.

The negotiable body

- The boundaries of bodies are not as clear cut as we thought.
- An implicit syllogism
 - The body plays an important role in cognition
 - The boundaries of the body are negotiable
 - Therefore, (maybe) the boundaries of cognition are also negotiable

Three grades of embodiment

1. Mere embodiment: body as control problem
2. Basic embodiment: exploit the dynamics of the body
3. Profound embodiment
 - “...constantly search for opportunities to make the most of body and world, checking for what is available, and then (at various timescales and with varying degrees of difficulty) integrating new resources very deeply, creating whole new agent-world circuits in the process” StM p.42

Exercise 4: Ecological Assembly

- Principle of Ecological Assembly (PEA): defined on pg 13 of StM.
- Find 3 examples of PEA in StM.
- For each example:
 - describe the resources that are assembled
 - describe the relations among the resources as they are created by the assembly
 - describe the result = the cognitive processes that is accomplished by the assembled resources.