

Cognitive Ecology

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Carve nature at its joints.

(Plato, Phaedrus)

Put the boundaries where
the traffic (connectivity) is low.

(Rumelhart)

Cognitive Ecology =

A system of relationships
among cognitive processes and
structures in a community

Relations among

- Mental processes
- Social processes
- Material processes
- Bodies (own and social others)



Ecological
Psychology

Ecology
of Mind

Activity
Theory

Ecological Psychology

organism/environment
affordances

Ecology of Mind

cybernetic loops
of mindfulness

Activity Theory

social construction
of thought

Ecological
Psychology

organism/environment
affordances

Dynamical
Systems

Embodied
Cognition

Gesture
Studies

Ecology
of Mind

cybernetic loops
of mindfulness

Enaction

Activity
Theory

social construction
of thought

Distributed
Cognition

Situated
Action

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Situated
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coupling
action/perception/thought

Gesture
Studies

emergence
multimodality

collective cognition

culturally constructed
environments for thinking

Ship's Navigation Team



Enacting LOPs in Gesture



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Cognitive Ecology

Cognitive Ecology (seen in the future)

- Focal phenomenon: social, situated, embodied, multimodal interaction
- Meaning in activity systems
- Integrated thought/action/perception
- Learning by participation (not just observation)
- Products of interaction accumulate throughout the ecology (not just in brains)



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Problems (dis)solved

- Poverty of stimulus?
 - Poverty of the notion that language behavior is learned from the *observation* of language behavior *alone*.
- Inferring the communicative intentions of others requires theory of mind?
 - Learning the meanings of culturally organized activities.
- Symbol grounding problem?
 - Symbol UN-grounding problem.

Easier to understand

- Why cognitive processes are as they are
 - Synchronic: functional relations among elements of the ecology
 - Diachronic: how the ecology evolves
- Anthropology : Psychology
- ::
- Epidemiology : Pathology

Human thinking is a form of cultural practice

- Acquired in embodied interaction with patterns of shared social and material worlds embedded in meaningful activity
- Something we do – together
- Cognitive ecology will provide a way to see human thought as manifest in dynamic relations among brain, body, and culturally organized settings