

University of Colorado, Colorado Springs
Center for Cognitive Archaeology

Embodied Cognition and Material Culture

(ANTH 4255/5255)

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Course Objective:

The aim of this course is to explore the nature of the relationship between cognition and material culture—what it is, how it changes, and what role the human body plays in forging those links. We shall adopt a cross-disciplinary embodied cognition approach and using a variety of archaeological and anthropological themes and case studies will offer a comparative examination of the impact of material culture on the making and evolution of human intelligence (brain and body) from its earliest beginnings to the present day.

Required Texts:

- Clark, A. (1997). *Being There: Putting Brain, Body and World Together Again*. Cambridge MA: MIT Press.
- Clark, A. (2008). *Supersizing the mind: embodiment, action, and cognitive extension*. New York: Oxford University Press
- Hutchins, E. (1995). *Cognition in the Wild*. Cambridge MA: MIT Press.
- Ingold T. 2011. *Being Alive: Essays on Movement, Knowledge and Description*. London: Routledge.
- Knappett, C., & Malafouris, L. (Eds.), (2008). *Material Agency: Towards a non-anthropocentric approach*. New York: Springer.
- Knappett, C. (2005). *Thinking Through Material Culture: An Interdisciplinary Perspective*. Philadelphia: University of Pennsylvania Press.
- Malafouris, L. (2013) *How Things Shape the Mind: A Theory of Material Engagement*. Cambridge MA: The MIT Press.
- Malafouris, L., & Renfrew, C. (Eds.), (2010). *The Cognitive Life of Things: Recasting the boundaries of the mind*. Cambridge: McDonald Institute for Archaeological Research.
- Noë, A. (2009). *Out of Our Heads: Why You Are Not Your Brain, and Other Lessons from the Biology of Consciousness*. New York: Hill and Wang.
- Varela, F. J., Thompson, E., & Rosch, E. (1991). *The embodied mind: Cognitive science and human experience*. Cambridge, MA: MIT Press.

COURSE OUTLINE

WEEK 1: Cognition and material culture: An Introduction

Key reading:

Malafouris, L. (2013) *How Things Shape the Mind: A Theory of Material Engagement*.
Cambridge MA: The MIT Press (Intro, ch. 1. & 2).

Knappett, C. (2005). *Thinking Through Material Culture: An Interdisciplinary Perspective*.
Philadelphia: University of Pennsylvania Press (Intro).

I. New perspectives in the cognitive sciences

WEEK 2: Embodied cognition

Key readings:

Anderson, ML. (2003). Embodied Cognition: A field guide. *Artificial Intelligence*, 149:
91–130.

Clark, A. (2008*b*). Pressing the flesh: A tension in the study of the embodied,
embedded mind? *Philosophy and Phenomenological Research*, 76: 37–59.

WEEK 3: Distributed cognition

Key readings:

Kirsh, D. (1995). The intelligent use of space. *Artificial Intelligence*, 73: 31-68.

Hollan, J., Hutchins, E., & Kirsh, D. (2000). Distributed Cognition: Toward a New
Foundation for Human-Computer Interaction Research. *ACM Transactions on
Computer-Human Interaction*, 7 (2): 174-196.

WEEK 4: Extended mind hypothesis

Key readings:

Clark, A., & Chalmers, D. (1998). The extended mind. *Analysis*, 58: 7–19.

Clark, A. (1997). *Being There: Putting Brain, Body and World Together Again*.
Cambridge: MIT Press.

WEEK 5: Enactive cognition

Key readings:

Thompson, E., & Stapelton, M. (2009). Making sense of sense-making: Reflections on
enactive and extended mind theories. *Topoi*, 28, 23–30.

Di Paolo, E. (2009). Extended Life. *Topoi*, 28(1): 9–21.

II. Things and Thinking

WEEK 6: Material signs

Key readings:

Keane, W. (2003). Semiotics and the social analysis of material things. *Language and Communication*, 23: 409-425.

Knappett, C. (2002). Photographs, Skeuomorphs and Marionettes. *Journal of Material Culture*, (7)1: 97-117.

WEEK 7: Material anchors

Key readings:

Hutchins, E. (2005). Material anchors for conceptual blends. *Journal of Pragmatics*, 37: 1555–1577.

Clark, A. (2010). Material surrogacy and the supernatural: Reflections on the role of artefacts in 'off-line' cognition. In L. Malafouris & C. Renfrew (Eds.), *The cognitive life of things: Recasting the boundaries of the mind*. (pp. 23-29). Cambridge: McDonald Institute for Archeological Research.

WEEK 8: Material metaphors

Key readings:

Tilley, C. (1999). *Metaphor and Material Culture*. Oxford: Blackwell (ch.2 &4).

Ortman, S., 2000. Conceptual metaphor in the archaeological record: Methods and an example from the American Southwest. *American Antiquity*, 65 (4), 613-45.

WEEK 9: Material agency

Key readings:

Gell, A. (1998). *Art and Agency: an Anthropological Theory*. Oxford: Oxford University Press (ch.2 & 9).

Malafouris, L. (2008). At the Potter's Wheel: An argument for Material Agency. In: Knappett C. & L. Malafouris (eds), *Material Agency: Towards a non-anthropocentric perspective*. New York: Springer. p. 19- 36.

WEEK 10: Material memories

Key readings:

Kwint, M., C. Breward & J. Aynsely (Eds.), (1999). *Material Memories: Design and Evocation*. Oxford: Berg.

Sutton, J. (2010). Exograms and interdisciplinarity: History, the extended mind, and the civilizing process. In R. Menary (Ed.), *The extended mind* (pp. 189–225). Cambridge: MIT Press.

III. Growing our minds, extending ourselves

WEEK 11: Developmental systems theory DST

Key readings:

- Griffiths, P.E., & Stotz, K. (2000). How the Mind Grows: A developmental perspective on the biology of cognition. *Synthese*, 122: 29–51.
- Oyama S., Griffiths P.E. and Gray R.D. (eds) (2001). *Cycles of Contingency: Developmental Systems and Evolution*. Cambridge: MIT Press.

WEEK 12: Neuroconstructivism

Key readings:

- Westermann, G., Mareschal, D., Johnson, M. H., Sirois, S., Spratling, M. W., and Thomas, M. S. C. (2007). Neuroconstructivism. *Developmental Science* 10 (1): 75–83.
- Sirois et al. (2008). Precis of Neuroconstructivism: How the brain constructs cognition. *Behavioral and Brain Sciences* 31, 321–356.

WEEK 13: Niche construction

Key readings:

- Sternerly, K. (2004). Externalism, Epistemic Artefacts and The Extended Mind. In: R. Schantz (ed) *The Externalist Challenge. New Studies on Cognition and Intentionality*; Berlin & New York: de Gruyter. p. 239-254.
- Iriki, A. & M. Taoka. 2012. Triadic (ecological, neural, cognitive) niche construction: a scenario of human brain evolution extrapolating tool use and language from the control of reaching actions. *Philosophical Transactions of the Royal Society Series B* 367, 10–23.

WEEK 14: Theories of neural reuse

Key readings:

- Anderson, ML. (2010). Neural reuse: A fundamental organizational principle of the brain. *Behavioral and Brain Sciences*, 33, 245–313.
- Anderson, M., J. Richardson & A. Chemero (2012). Eroding the Boundaries of Cognition: Implications of Embodiment. *Topics in Cognitive Science* 1–14.

WEEK 15: Cognitive ecology & Metaplasticity

Key readings:

- Hutchins, E. (2010). Cognitive Ecology. *Topics in Cognitive Science*, 2: 705–15.
- Malafouris, L. (2010). Metaplasticity and the human becoming: Principles of neuroarchaeology. *Journal of Anthropological Sciences*, 88: 49–72.

Method of teaching:

There will be 3 essays (1500-2000 words) based on pre-approved topics/questions plus 1 book review (max 1000 words). Your grade will be determined strictly on the basis of your essays/reviews marks (25% each).

Graduate Students:

Graduate students may choose to write a single research essay (max 6.000 words) on a topic approved by Dr Malafouris plus 2 book reviews (max 1000 words).

Due Dates and Deadlines:

ESSAY (1) by end of WEEK 5

BOOK REVIEW (1) by end of WEEK 10

ESSAY (2) by end of WEEK 10

ESSAY (3) by end of WEEK 15