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University of Colorado, Colorado Springs
Center for Cognitive Archaeology

ANTH 4915/5915 – History of Evolutionary Cognitive Archaeology since 1969

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Instructor: Professor Thomas Wynn, PhD
Email: twynn@uccs.edu
Phone: 719-255-3126
Fax: 719-255-4166

The course consists of a selected list of primary sources that have been instrumental in establishing cognitive archaeology as a viable and influential approach in the study of human evolution. The readings are biased toward Anglophone archaeology, and toward important issues in human cognitive evolution.

Books

I would like all students to read three books over the course of the semester. They are:

a. *The Evolution of Spatial Competence*, by Thomas Wynn, 1989, University of Illinois Press (it can be had cheap on Amazon as a used book).

b. *The Prehistory of Mind*, by Steven Mithen, 1996, Thames and Hudson

c. *Stone Tools and the Evolution of Human Cognition*, April Nowell and Iain Davidson, 2010, University of Colorado Press

Each of these books is assigned for a particular lesson, but it would be a good idea to get started on them well before they are actually assigned.

Readings

The other readings have been chosen from journal articles and book chapters, and they will be made available on Blackboard.

Evaluation

Following each lesson students will write an annotated bibliographic entry for each reading, and write a brief response essay based on prompts provided online. The complete annotated bibliography will be submitted at the end of the term. Graduate students will also be expected to write a final fifteen-page essay identifying major themes and critiques.

Order of Lessons

Lesson #1 – The state of the art pre-1979. Prior to 1979, cognition was rarely a focus of archaeological analysis. The prevailing theoretical climate in human evolution emphasized taxonomy and ecology. There were a couple of exceptions:

    a. Ralph Holloway 1969 (Holloway, 1969)

    b. Glynn Isaac 1976 (Isaac, 1976)

Lesson #2 – 1979 – In 1979, entirely independent of one another, three articles appeared that became very influential; they mark a kind of beginning point for contemporary evolutionary cognitive archaeology.

    a. Parker and Gibson 1979 (Parker & Gibson, 1979)

    b. Wynn 1979 (Thomas Wynn, 1979)

    c. John Gowlett 1979 (J Gowlett, 1979)

Lesson #3: – Parker and Gibson were biological anthropologists, and did not expand on their use of archaeological evidence in subsequent publications. But Gowlett and Wynn did, and in 1989 Wynn published a slim volume summarizing his Piagetian approach.

    a. Gowlett 1984 (Gowlett, 1984)

    b. The Evolution of Spatial Competence

Lesson #4: – In the late 1980s and early 1990s, language evolution became the focus of a number of serious archaeological treatments. The Davidson and Noble article has been far and away the most influential of these, largely because of its explicit theoretical stance. The Byers' article is equally interesting, and arguably has equally important implications for archaeologists. Unfortunately, it is not an easy read, and this has reduced its influence.

    a. Davidson and Noble 1989 (Davidson & Noble, 1989)

    b. Byers 1994 (Byers, 1994)

Lesson #5: – In the 1980s evolutionary cognitive archaeology seemed to fall on deaf ears. Archaeologists in the U.S. ignored it completely, operating instead comfortably within the context of ecological theory. But in Europe, especially at Cambridge University, archaeologists had begun to explore new approaches, including the cognitive approach. This Cambridge School, if it could be called that, culminated in the very influential book by Steven Mithen.

    a. *The Prehistory of the Mind* – chapters 1–6 (Mithen, 1996)

Lesson #6: Mithen chapters 7–11

Lesson #7: – Francophone archaeologists also began to take a serious look at cognition, but their theoretical basis was quite different, relying on such French scholars as André Leroi-Gourhan. Of the archaeologists who also wrote in English, the best was Nathan Schlanger.

    a. Schlanger 1990 (Schlanger, 1990)

    b. Schlanger 1996 (Schlanger, 1996)

Lesson #8: – By the late 1990s U.S. paleoanthropologists had finally begun to ask questions about the evolution of cognition. This was due in part to the steady influence of articles by

Davidson, Gowlett, Mithen, and Wynn, but the major reason was the explosion of research in cognitive science in general. Stanley Ambrose began his academic life operating within the standard ecological model, but came to realize that it was unable to account for real developments in the paleoanthropological record. In 2001 he published an article in *Science* that arguably marked the coming of age of evolutionary cognitive archaeology in the United States. In the 1990s Wynn, too, took heed of the rapid developments in cognitive science. The Piagetian approach had been fruitful, but ultimately limited in the kinds of interpretations it allowed. Wynn thus began exploring the possibilities of other cognitive approaches. This reorientation culminated in a target article in *Behavioral and Brain Sciences*, one of the leading journals in cognitive science. BBS includes commentaries on target articles, and some of the commentaries are quite interesting.

      a. Ambrose 2001 (Ambrose, 2001)

      b. Wynn (T Wynn, 2002)

Lesson #9: – Indiana University archaeologist Nick Toth had always been open to alternative perspectives in paleoanthropology, and in the 1990s began to incorporate a cognitive component in his teaching and research. The most famous result was his work with the bonobo Kanzi, but he also encouraged the ideas of a very talented graduate student, Dietrich Stout, who went on to develop a strong research focus of his own.

      a. Toth et al. 1993 (Toth, Schick, Savage-Rumbaugh, Sevcik, & Rumbaugh, 1993)

      b. Stout (Stout, 2002)

Lesson #10: – Language and symbolism continued to be the focus of a great deal of research. Francesco d'Errico is one more influential archaeologists writing on this subject, primarily because he insists on emphasizing the actual evidence.

      a. d'Errico 2003 (d'Errico et al., 2003)

Lesson #11: – In 1987 Cann, Stoneking, and Wilson (1987) published an article in *Nature* that used mitochondrial DNA to argue for Africa as the natal home of modern humans. This set off a storm of research into the evolution of modern humans, and cognitive archaeology was eventually drawn in.

      a. McBrearty and Brooks (McBrearty & Brooks, 2000)

Lesson #12: – In 2000 Wynn began working with neuropsychologist Frederick L. Coolidge. The result was a model for the evolution of modern cognition that was based on the well-established concept of working memory. At about the same time, Stout began working with neuroimaging technology.

      a. Coolidge and Wynn 2005 (Coolidge & Wynn, 2005)

      b. Stout et al. 2000 (Stout, Toth, Schick, Stout, & Hutchins, 2000)

Lessons #13: – In 2006 April Nowell and Iain Davidson brought together a number of archaeologists working in cognitive evolution for an SAA symposium. The result was their 2010 book, *Stone Tools and the Evolution of Human Cognition*, which is an excellent summary of the state of the art in 2006.

      a. Nowell and Davidson chapters 1–5 (Nowell & Davidson, 2010)

Lesson #14: – Nowell and Davidson chapters 6–10

Lesson #15: – In the late 1990s, Cambridge archaeologists began to explore the possibilities in a cognitive perspective known as embodied cognition. It appears to have great potential for archaeologists interested in human evolution. And in South Africa, Lyn Wadley continued an ambitious assault on prehistoric cognition via actualistic studies.

       a. Malafouris (Malafouris, 2008)

       b. Wadley (Wadley, Hodgskiss, & Grant, 2009)

       c. Wynn (T. Wynn, 2009)

Readings

Ambrose, S. (2001). Paleolithic technology and human evolution. *Science, 291*, 1748–1753.

Byers, A. M. (1994). Symboling and the Middle-Upper Palaeolithic transition: A theoretical and methodological critique. *Current Anthropology, 35*, 369–400.

Cann, R. L., Stoneking, M., & Wilson, A. C. (1987). Mitochondrial DNA and human evolution. *Nature, 329*, 111–112.

Coolidge, F. L., & Wynn, T. (2005). Working memory, its executive functions, and the emergence of modern thinking. *Cambridge Archaeological Journal, 15*(1), 5–26.

D'Errico, F., Henshilwood, C., Lawson, G., Vanhaeren, M., Tillier, A.-M., Soressi, M., et al. (2003). Archaeological evidence for the emergence of language, symbolism, and music—An alternative multidisciplinary perspective. *Journal of World Prehistory, 17*(1), 1–70.

Davidson, I., & Noble, W. (1989). The archaeology of perception: traces of depiction and language. *Current Anthropology, 30*, 125–155.

Gowlett, J. (1979). Complexities of cultural evidence in the Lower and Middle Pleistocene. *Nature, 278*, 14–17.

Gowlett, J. (1984). Mental abilities of early man: a look at some hard evidence. In R. Foley (Ed.), *Hominid Evolution and Community Ecology: Prehistoric Human Adaptation in Biological Perspective* (pp. 167–192). London: Academic Press.

Holloway, R. (1969). Culture: a human domain. *Current Anthropology, 10*, 395–412.

Isaac, G. (1976). Stages of cultural elaboration in the Pleistocene: possible archaeological indicators of the development of language capabilities. In S. Harnad, H. Steklis & J. Lancaster (Eds.), *Origins and Evolution of Language and Speech* (Vol. Annals 280, pp. 275–288). New York: New York Academy of Science.

Malafouris, L. (2008). Beads for a plastic mind: the 'Blind Man's Stick' (BMS) hypothesis and the active nature of material culture. *Cambridge Archaeological Journal, 18*(3), 401–414.

McBrearty, A., & Brooks, A. (2000). The revolution that wasn't: A new interpretation of the origin of modern human behavior. *Journal of Human Evolution, 39*, 453–563.

Mithen, S. (1996). *The Prehistory of Mind*. London: Thames and Hudson.

Nowell, A., & Davidson, I. (Eds.). (2010). *Stone Tools and the Evolution of Human Cognition*. Boulder, CO: University of Colorado Press.

Parker, S., & Gibson, K. (1979). A developmental model for the evolution of language and intelligence in early hominids. *Behavioral and Brain Sciences, 2*, 367–408.

Schlanger, N. (1990). Technique as human action: Two perspectives. *Archaeological Review from Cambridge, 9*, 18–26.

Schlanger, N. (1996). Understanding Levallois: Lithic technology and cognitive archaeology. *Cambridge Archaeological Journal, 6*(2), 231–254.

Stout, D. (2002). Skill and cognition in stone tool production. *Current Anthropology, 43*(5), 693–722.

Stout, D., Toth, N., Schick, K., Stout, J., & Hutchins, G. (2000). Stone tool-making and brain activation: Positron emission tomography (PET) studies. *Journal of Archaeological Science, 27*, 1215–1223.

Toth, N., Schick, K., Savage-Rumbaugh, S., Sevcik, R., & Rumbaugh, D. (1993). *Pan* the tool-maker: Investigations into the stone tool-making and tool-using capabilties of a bonobo (*Pan paniscus*). *Journal of Archaeological Science, 20*, 81–91.

Wadley, L., Hodgskiss, T., & Grant, M. (2009). Implications for complex cognition from the hafting of tools with compound adhesives in the Middle Stone Age, South Africa. *Proceedings of the National Academy of Sciences, 106*, 9590–9594.

Wynn, T. (1979). The intelligence of later Acheulean hominids. *Man, 14*, 371–391.

Wynn, T. (2002). Archaeology and cognitive evolution. *Behavioral and Brain Sciences, 25*(3), 389–438.

Wynn, T. (2009). Hafted spears and the archaeology of mind. *Proceedings of the National Academy of Sciences, 106*(24), 9544–9545.

Due Dates and Deadlines

The syllabus contains the deadline for each unit and specifies the dates by which the test must be completed. For each deadline, you have until 11:59 PM on the deadline day. Remember, these are DEADLINES. You are encouraged to stay well ahead of these deadlines. The sooner you complete the work, the sooner you'll be done with the course.

You must complete each unit by the specific date linked in the table above to the syllabus. Once that date has passed, you can still access the material in the unit, but you can no longer take the test associated with that unit. For example, if Unit 3 must be completed by Thursday, September 16, if you don't take Test 3 by 11:59 PM on September 16, you will receive a 0 for that test.

Dr. Wynn's Expectations of You

During completion of this course, you must abide by the UCCS Student Conduct Code. This code specifies what is considered proper and improper student conduct, including matters such as cheating and inappropriate behavior. Students who do not abide by the code can receive sanctions ranging up to expulsion from the university.

Remember that this is a 3 credit-hour course. Please plan on spending a lot of time working on just this class. This time will include reviewing lesson plans, completing online lectures, reading from your textbook, answering practice problems, verifying your work, and completing test. I suggest that you plan to spend at least 10 hours per week on average.

Of course, the amount of time spent does not guarantee you any particular grade. Your letter grade will reflect the amount of material that you learned, as reflected in your test scores and the overall quality of your contributions to the course.

We will be respectful of you as students. We will not demean you, insult you, or embarrass you. We expect that you will be respectful and civil in the discussion boards as our students. To us, this means that you will not post off-topic or rude comments.

Solving Technical Difficulties

When you're having technical difficulties (pages not loading, connectivity problems, not able to view images, things not working as they should, etc.), please contact the Blackboard Helpdesk toll-free at 877.654.8309 or online at the UCCS Blackboard Support page. The Blackboard Helpdesk is available 24 hours a day, 7 days a week. Please note this service is separate from the UCCS IT Helpdesk.

Help Understanding Course Material

When you have questions regarding course policies, grading criteria, test administration, etc., please post your question to the Discussion Board or ask your professors via email.