

**UNIVERSITY OF TORONTO AT MISSISSAUGA**  
**SOCIOLOGY 319Y - GENE-CULTURE COEVOLUTION**  
**2005-06**

Instructor: Professor Marion Blute  
Time: Monday 1-3 p.m., SE 2068  
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At least two evolutionary processes are believed to influence human behaviour - the biological and the sociocultural. This course deals with the most recent theories of how each of these are thought to work and to interact with each other (gene-culture coevolution). All such theories attempt to go beyond simple "nature versus nurture" debates.

The course will be organized as a seminar, and divided into two parts with required readings each week in the first part. In the first part of the course, in addition to a brief weekly quiz, each student will be required to prepare a brief (approximately 5 typewritten pages) for any 2 of the weeks for which readings have been assigned. These papers should (minimally) summarize and critically analyze the readings and raise questions for discussion. The papers are due at the relevant class and those who have written papers for a particular week will briefly present them and lead the discussion that week. In the final part of the course each student will prepare a third paper and present a seminar utilizing some of the previously read and discussed material, applying it to some substantive interest of the student (topics to be chosen in consultation with the instructor).

Grading: Weekly quiz 20%; each paper (including presentation) 20%; quantity and quality of general participation 20%.

Readings: Texts recommended for purchase are listed below. These as well as other assigned readings will be on reserve in the library.

Cartwright, John. 2000. *Evolution and Human Behavior*. Bradford of MIT Press.

Basalla, George. 1988. *The Evolution of Technology*. Cambridge University Press.

Richerson, Peter J. & Boyd, Robert. 2005. *Not by Genes Alone: How Culture Transformed Human Evolution*. The University of Chicago Press.

## TOPICS AND READINGS BY WEEK

Mon. Sept. 12 Course Organization - no readings assigned.

### **THE BIOLOGICAL EVOLUTIONARY APPROACH**

Mon. Sept. 19 Natural Selection: Basic Principles  
Cartwright, J. Evolution and Human Behavior. Chpts. 1-3

Mon. Sept. 26 Sexual Selection: Basic Principles  
Cartwright, J. Chpts. 4-5.

Mon. Oct. 3 Brains, Language and Mind  
Cartwright, J. Chpts. 6-7.

Mon. Oct. 17 Human Sexual Behaviour  
Cartwright, J. Chpts. 8-9.

Mon. Oct. 24 Conflict and Cooperation  
Cartwright, J. Chpts. 10, 11 to p. 307, and 12.

### **THE SOCIOCULTURAL EVOLUTIONARY APPROACH**

Mon. Oct.31 Do Animals Have Cultures?

Durham, Wm. H. 1991. "The Emergence of Ideational Theories of Culture." Pp. 3-10 in Wm. H. Durham, *Coevolution: Genes, Culture and Human Diversity*. Stanford University Press.  
Whiten, A. et. al. 1999. "Culture in Chimpanzees." (With an introduction by Frans de Waal.)  
*Nature* 399: June 17, 635-6 and 682-85.  
Rendell, L. And Whitehead, H. 2001. "Culture in Whales and Dolphins." and Comments.  
*Behavioral and Brain Sciences* 24:309-382.

Those who write on this topic should read one of:

Dugatkin, Lee A. 2000. *The Imitation Factor: Evolution Beyond the Gene*. Free Press.  
De Waal, Frans. 2001. *The Ape and the Sushi Master: Cultural Reflections of a Primatologist*.  
Basic Books.  
McGrew, William C. 1992. *Chimpanzee Material Culture: Implications for Human Evolution*.  
Cambridge University Press.  
McGrew, William C. 2004. *The Cultured Chimpanzee: Reflections on Cultural Primatology*.  
Cambridge University Press.

Mon. Nov. 7 Do Cultures Evolve?

Blute, Marion. 1997. "History Versus Science: The Evolutionary Solution". *The Canadian Journal of Sociology*. 22(3) 345-64.

- Runciman, W.G. 1998. "The Selectionist Paradigm and its Implications for Sociology." *Sociology* 32(1): 163-188.
- Mesoudi, A., Whiten, A., and Laland, K. 2004. "Is Human Cultural Evolution Darwinian? Evidence Reviewed from the Perspective of the Origin of Species." *Evolution* 58(1) 1-11.

Those who write on this topic should also read some of the following for historical background:

- Campbell, Donald T. 1965. "Variation and Selective Retention in Socio-cultural Evolution." Pp. 19-49 in H.R. Barringer et. al. eds. *Social Change in Developing Areas*. Shenkman.
- Blute, M. 1979. "Sociocultural Evolutionism: An Untried Theory." *Behavioral Science* 24: 46-59.
- Mundinger, P. C. 1980. "Animal Cultures and a General Theory of Cultural Evolution." *Ethology and Sociobiology* I, 183-223.
- Fog, Agner. 1999. "The History of Cultural Selection Theory." Chpt. 2, Pp. 13-58 in Agner Fog, *Cultural Selection*. Kluwer Academic Publishers.

Mon. Nov. 14            Languages

- Ruhlen, Merritt. 1987. "Voices from the Past." *Natural History* 3:6, 8 & 10.
- Gamkrelidze, T. V. & V. V. Ivanov. 1990. "The Early History of Indo-European Languages." *Scientific American*, March, 110-116.
- Ross, P. E. 1991. "Hard Words." *Scientific American*. April, 138-147.
- Wright, Robert. 1991. "Quest for the Mother Tongue." *The Atlantic Monthly*, April: 39-42, 44-45, 48, 50-52, 54-55, 58, 60-64 & 66-68..
- Sutherland, Wm. J. 2003. "Parallel Extinction Risk and Global Distribution of Languages and Species." *Nature* 423, 276-279.

Those who write on this topic should pursue evolutionary theories of language change in one of:

- Ruhlen, Merritt. 1994. *The Origin of Language: Tracing the Evolution of the Mother Tongue*. John Wiley & Sons, Inc.
- Trask, R. L. 1996. *Historical Linguistics*. Oxford University Press.
- Bichakjian, Bernard H. 2002. *Language in a Darwinian Perspective*. Peter Lang.
- Croft, William. 2000. *Explaining Language Change: An Evolutionary Approach*. Pearson Education Ltd.
- Mufwene, Salikoko S. 2001. *The Ecology of Language Evolution*. Cambridge University Press.

Mon. Nov. 21            Technology

- Duthie, A. Bradley. 2003. "The Fork and the Paperclip: A Memetic Perspective". *Journal of Memetics*. <[http://jom-emit.cfpm.org/2004/vol18/duthie\\_ab.html](http://jom-emit.cfpm.org/2004/vol18/duthie_ab.html)>
- Koza, John R., Keane, M.A. and Streeter, M.J. 2003. "Evolving Inventions". *Scientific American*, Feb. 52-59.
- Basalla, George. 1988. *The Evolution of Technology*. Cambridge University Press

Those who write on this topic should also read one of:

- Petroski, Henry. 1992. *The Evolution of Useful Things*. Vintage Books. OR

J. M. Ziman (ed). 2000. *Technological Innovation as an Evolutionary Process*. Cambridge University Press.

Molotch, Harvey. 2003. *Where Stuff Comes From*. Routledge.

Mon. Nov. 28            Archaeology

Shennan, Stephen. 2002. "Culture as an Evolutionary System" and "The Evolutionary Archaeology of Cultural Traditions", Chpts. 3 and 4, Pp. 35-99 in Stephen Shennan, *Genes, Memes and Human History: Darwinian Archaeology and Cultural Evolution*. Thames & Hudson Ltd.

Those who write on this topic should also read either the rest of Shennan or another book on evolutionary archaeology e.g.

Hurt, Teresa D. 2001. *Style and Function: Conceptual Issues in Evolutionary Archaeology*. Syndetic Solutions Inc.

O'Brien, M.J. & R.L. Lyman eds. 2000. *Applying Evolutionary Archaeology: A Systematic Approach*. Kluwer.

O'Brien, M.J. ed. 1996. *Evolutionary Archaeology: Theory and Applications*. University of Utah Press.

Teltser, Patrice A. 1995. *Evolutionary Archaeology: Methodological Issues*. U. Of Arizona Press.

Mon. Dec. 5            Economic Institutions/Organizations

Aldrich, Howard. 1999. *Organizations Evolving*. Sage Publications, Chpts. 1-3.

Nelson, Richard R. 2002. "Evolutionary Theorising in Economics." Pp.135-143 in M. Wheeler, J. Ziman and M.A. Boden (eds.) *The Evolution of Cultural Entities*. Oxford University Press.

Hodgson, Geoffrey M. 2005. "Biology and Economics: A Very Long Engagement." Forthcoming, *Journal of Bioeconomics*.

Those who write on this topic should read either the rest of the Aldrich book OR one of:

Boulding, Kenneth E. 1981. *Evolutionary Economics*. Sage.

Nelson, Richard R. & Winter, Sidney G. 1982. *An Evolutionary Theory of Economic Change*. Harvard University Press.

Hodgson, Geoffrey M. 1999. *Evolution and Institutions: On Evolutionary Economics and the Evolution of Economics*. Edward Elgar.

Mon. Jan. 9            Science

Hull, David. "A Mechanism and its Metaphysics: An Evolutionary Account of the Social and Conceptual Development of Science" In Hull, David. 2000. *Science and Selection*. Cambridge University Press, 97-134. Reprinted from *Biology and Philosophy*, 1988. 3:123-55.

Blute, Marion. "The Evolutionary Ecology of Science." 2003. *Journal of Memetics* 7(1) 21pp. <[http://jom-emit.cfpm.org/2003/vol7/blute\\_m.html](http://jom-emit.cfpm.org/2003/vol7/blute_m.html)>

Those who write on this topic should read some or all of Hull, David. 1988. *Science as a Process. An Evolutionary Account of the Social and Conceptual Development of Science*. University of Chicago Press.

Mon. Jan. 16            Memetics

Blackmore, Susan. 2000. "The Power of Memes." *Scientific American*, Oct. 64-73.  
Dennett, Daniel C. 1995. "The Cranes of Culture." Chpt. 12 of *Darwin's Dangerous Idea: Evolution and the Meanings of Life*. Simon & Schuster. Pp. 335-69.

Those who write on this topic should read more on memetics e.g. one of:

Cziko, Gary. 1995. *Without Miracles: Universal Selection Theory and the Second Darwinian Revolution*. MIT Press.  
Brodie, R. 1996. *Virus of the Mind: The New Science of the Meme*. Integral Press, Seattle.  
Lynch, Aaron. 1996. *Thought Contagion: How Belief Spreads Through Society*. Basic Books.  
Blackmore, Susan 1999. *The Meme Machine*. Oxford University Press.  
Cullen, Ben S. 2000. *Contagious Ideas: On Evolution, Culture, Archaeology, and Cultural Virus Theory*. Oxbow Books.  
Aunger, Robert. 2000. *Darwinizing Culture: The Status of Memetics as a Science*. Oxford University Press.  
Aunger, Robert. 2002. *The Electric Meme: A New Theory of How We Think*. The Free Press.

## GENE-CULTURE COEVOLUTION

Mon. Jan. 23            Some general statements.

Cartwright, Chpt. 11:307-319.  
Plotkin, H. C. & F. J. Odling-Smee. 1981. "A Multiple-Level Model of Evolution and Its Implications for Sociobiology." *The Behavioral and Brain Sciences*. 4 # 2, 225-35.  
Blute, M. 1987. "Biologists on Sociocultural Evolution: A Critical Analysis." *Sociological Theory*. 5 # 2, 185-193.  
Feldman, M.W. & K.N. Laland. 1996. "Gene-Culture Coevolutionary Theory." *Trends in Ecology and Evolution (TREE)* 11(11):453-457.

Mon. Jan. 30            Durham

Durham, Wm. H. 1994. *Coevolution: Genes, Culture and Human Diversity*. Stanford University Press, Pp. 205-25 and 419-67.

Those who write on this topic should read more of Durham's book.

Mon. Feb. 6            Richerson & Boyd

Richerson, Peter J. & Boyd, Robert. 2005. *Not by Genes Alone: How Culture Transformed*

*Human Evolution*. The University of Chicago Press. Chpts. 1-3.

Those who write on this topic should read some or all of Robert Boyd & Peter J. Richerson, *Culture and the Evolutionary Process*, University of Chicago Press, 1985.

Mon. Feb. 13            Richerson & Boyd (cont'd)

Richerson & Boyd, Chpts.4 & 5.

Those who write on this topic should read some or all of Robert Boyd & Peter J. Richerson, *Culture and the Evolutionary Process*, University of Chicago Press, 1985.

Mon. Feb. 27            Richerson & Boyd (cont'd)

Richerson & Boyd, Chpts. 6 & 7.

Those who write on this topic should read some or all of Robert Boyd & Peter J. Richerson, *Culture and the Evolutionary Process*, University of Chicago Press, 1985.

Mon. Mar. 6            The Game Theory Approach to Coevolution

Blute, M. "Gene-Culture Coevolutionary Games." 2006. *Social Forces* 85(1) 151-166.

Mon. Mar 13 to Mon. Apr. 10 (5 classes)

Presentations and papers.