

# Human Dimensions of Sustainability

**THIS SEMINAR** explores the questions of where new cultural things come from, and how they come to hang together to form cultures. Cultures, to judge from the last 400,000 years of human history, constitute resource management designs which, with varying success, provide for collective action to address specific sustainability problems. Cultural institutions may produce, exacerbate, or minimize sustainability problems, which arise from complexly related sets of variables at multiple scale levels, and exhibit important non-linearities. This seminar examines the correspondence of variations in cultural design with successful and failed responses to sustainability problems.

**REQUIREMENTS:** Four (UG) or eight (G) discussion papers (due at the beginning of class the day of discussion), one (UG) or two (G) of which address issues in Weeks 10, 11, & 12, plus active participation in seminar discussions. (UG means undergraduate students; G means graduate students.) Limit your discussion papers to 1500 words (typed single-spaced, 12 point font). The length restriction means that you have to write very high density sentences, which implies much re-writing; use Strunk & White's *The Elements of Style* as your guide to good writing.

**GRADES:** 90% of your grade will come from the discussion papers; the remaining 10% will come from my assessment of your interest, preparation, and contributions. Your last discussion paper will count as your Final, from which I will evaluate your mastery of the concepts and skills that are part of the course.

## **WEEK 0, Orientation:**

Definitions of culture, the construction of cultural change, co-evolution of biology & culture, genome to phenotype to mind to choices to (?) cultures.

## **THE PROBLEM & THE PROTAGONISTS**

### **WEEK 1 Culture & Causality**

#### *Big Question*

What's 'culture' if it exists at all?

UG & G: Handwerker, W Penn. *The Evolution of Choice & the Origin of Cultures*. Walnut Creek, CA: Left Coast Press, 2009. Chapter 1

G: Cosmides, Leda, and John Tooby,

1992 Cognitive Adaptations for Social Exchange. Pp. 163-228. In *The Adapted Mind*, J.H. Barkow, L. Cosmides, and J. Tooby, eds. NY: Oxford University Press.

G: Boyd, Robert and Peter J, Richarson.

1985 *Culture and the Evolutionary Process*. Chicago: Univ. of Chicago Press. Pp. 32-80.

## WEEK 2 What's Wrong with Malthus?

### *Big Question*

*If the earth has a carrying capacity, how can we know what it is?*

UG & G: Carrying Capacity. [http://en.wikipedia.org/wiki/Carrying\\_capacity](http://en.wikipedia.org/wiki/Carrying_capacity)

UG & G: Hardin, Garrett. The Tragedy of the Commons. *Science* 1968; 162:1243-1248.

UG & G: Simon, Julian Resources, Population, Environment: An Oversupply of False Bad News. *Science* 1980; 208:1431-1437.

## RULES FOR CULTURAL DESIGN

## WEEK 3 One Rule for 400,000 Years of Cultural Evolution

### *Big Question*

*How did our ancestors create ever-improving productivity and a better life?*

UG & G: Tainter, Joseph A. Archaeology of Overshoot and Collapse. *Annual Review of Anthropology* 2006; 35: 59-74

UG & G: Borgerhoff-Mulder, M, P Coppolillo *Conservation: Linking Ecology, Economics, and Culture*. Princeton: Princeton Univ Press, 2005. Chapter 4

G: Kirch, P. Archaeology & Global Change: The Holocene Record. *Annual Review of Environment & Resources* 2005; 30:409-440.

G: Boserup, Ester *Population and Technological Change*. Chicago: Univ of Chicago Press, 1990. (selections)

## WEEK 4 Two Rules for Cultural Design

### *Big Question*

*What highly effective and specific forms of resource management systems did our ancestors create?*

UG & G: Netting, Robert M. *Cultural Ecology*. 2<sup>nd</sup> edition. Long Grove, IL: Waveland Press, 1986.

G: Moran, Emilio *Human Adaptability*. 3<sup>rd</sup> Edition. Boulder: Westview Press, 2008. Chapters 1-4, plus at least one from 5-9

## WEEK 5 Cultural Design & Collective Action

### *Big Question*

*How do cultures make people do things, so that they accomplish specific goals?*

UG & G: Borgerhoff-Mulder, M, P Coppolillo *Conservation: Linking Ecology, Economics, and Culture*. Princeton: Princeton Univ Press, 2005. Chapter 5

UG: Sheridan, Thomas E. Embattled Ranchers, Endangered Species, and Urban Sprawl: The Political Ecology of the New American West. *Annual Review of Anthropology* 2007; 36:121-38

G: Searle, John R  
1995 *The Construction of Social Reality*. NY: The Free Press.

## MINDS & CULTURES

## WEEK 6. Consciousness & Cognition

### *Big Question--*

**How can people design cultures when they can't see problems clearly much less make conscious decisions?**

UG & G: D'Andrade, Roy

1995 *The Development of Cognitive Anthropology*. Cambridge: CUP. Chapters 8, 9

UG & G: Gazzaniga, M.

1998 *The Mind's Past*. Berkeley: Univ of California Press. Chapter 3.

G: Jerison, H.J.

1973 *Evolution of the Brain and Intelligence*. New York: Academic Press. Selections.

2001 On Theory in Comparative Psychology. In, *The Evolution of Intelligence* R.J. Sternberg and J.C. Kaufman, eds. Pp. 251-288. Mahwah, NJ: Lawrence Erlbaum Assoc.

G: Bargh, John A., and Tanya L. Chartrand.

1999. The Unbearable Automaticity of Being. *American Psychologist* 54: 462-479.

## WEEK 7. Rational Choice Theory

### *Big Question*

**How can people create rationally-designed cultures when they can't make rational decisions?**

UG & G: Shafir E, LeBoeuf RA. Rationality. *Annual Review of Psychology* 2002;53:491-517.

UG & G: Borgerhoff-Mulder, M, P Coppolillo *Conservation: Linking Ecology, Economics, and Culture*. Princeton: Princeton Univ Press, 2005. Chapter 6

G: Wildavsky A. Choosing Preferences by Constructing Institutions: *American Political Science Review* 1987; 81:3-21.

G: Kahneman D. Maps of bounded rationality: Psychology for behavioral economics. *The American Economic Review* 2003;93:1449-1475.

G: De Martino, B., Kumaran, D., Seymour, B. & Dolan, R.J. Frames, biases and rational decision-making in the human brain. *Science* 2006;313:684-687.

## WEEK 8. Creative Minds, Information Flows, & the Winnowing of Innovations

### *Big Question*

**Where do new things come from?**

UG & G: Handwerker, W Penn. *The Evolution of Choice & the Origin of Cultures*. Walnut Creek, CA: Left Coast Press, 2009. Chapters 2, 3, 4

G: Danchin, Etienne, Luc-Alain Giraldeau, Thomas J. Valone, and Richard H. Wagner . Public Information: From Nosy Neighbors to Cultural Evolution. *Science* 2004;305:487-491.

G: Reader, Simon M., and Kevin N. Laland. Social Intelligence, Innovation, and Enhanced Brain Size in Primates. *PNAS* 2002;99:4436-4441.

G: Henrich J, McElreath R, Barr A, Ensminger J, et al. Costly Punishment Across Human Societies. *Science* 2006;312:1767-1770.

G: Nairne JS, Thompson SR, Pandeirada JNS. Adaptive Memory: Survival Processing Enhances Retention. *Journal of Experimental Psychology: Learning, Memory, and Cognition*. 2007;33:263-273.

## WEEK 9 The Evolution of Choice

### *Big Question*

What can we learn about resource management design from corruption and war?

UG & G: Handwerker, W Penn. *The Evolution of Choice & the Origin of Cultures*. Walnut Creek, CA: Left Coast Press, 2009. Chapters 5, 6

UG & G: Brauer, J. and H. Van Tuyl. *Castles, Battles and Bombs*. Walnut Creek, CA: Left Coast Press, 2009. Chapters 1, 8.

## DESIGNS FOR CULTURAL RESILIENCY

## WEEK 10 Sustainability Dilemmas

### *Big Question*

How can we create 'sustainable' cultures when things change all the time?

UG & G: Borgerhoff-Mulder, M, P Coppolillo *Conservation: Linking Ecology, Economics, and Culture*. Princeton: Princeton Univ Press, 2005. Chapters 8, 9

UG & G: Liu, J. et al.

2007 Complexity of Coupled Human and Natural Systems. *Science* 317:1513-1516.

G: Ostrom, Elinor.

1998 A Behavioral Approach to the Rational Choice Theory of Collective Action. *American Political Science Review* 92:1-22.

G: Dietz, Thomas, et al. The Struggle to Govern the Commons. *Science* 2003; 302: 1907-1912.

G: Acheson James M. Institutional Failure in Resource Management. *Annual Review of Anthropology* 2006; 35:117-34.

## WEEK 11 Cultural Designs for Effective Collective Action

### *Big Question*

What do we need to know and how can we best get the answers?

UG & G: Borgerhoff-Mulder, M, P Coppolillo *Conservation: Linking Ecology, Economics, and Culture*. Princeton: Princeton Univ Press, 2005. Chapters 10, 11

G: Folke, Carl, T. Hahn, P. Olsson, and J Norberg. Adaptive Governance of Social-Ecological Systems. *Annual Review of Environment & Resources* 2005;30:441-73.

G: Ostrom, Elinor

2000 The Danger of Self-Evident Truths. *PS – Political Science & Politics* 33: 33-44.

## WEEK 12 Research Agendas for Policy & Program Design

### *Big Question*

What are the 5 most important sustainability issues today and how are they interrelated?

UG & G: Ostrom, Elinor, MA Janssen, and JM Anderies Going Beyond Panaceas. *PNAS* 2007;104:15176-15178

UG & G: Ostrom, Elinor A Diagnostic Approach for Going Beyond Panaceas. *PNAS* 2007;104:15181-15187.

