

## Principles of Evolutionary Psychology: Winter 2008

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2-4:50 M: Condon 260

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### Introduction:

This class is based on the understanding that evolutionary processes have shaped how our brains work, and how this ultimately affects how we think, feel, and behave. The adaptationist question, “What is the function of a given structure or organ?” has been for centuries the basis of every advance in physiology (Mayr), and evolutionary psychology brings this approach to the study of the brain/mind. It recognizes that the brain/mind has the functionally organized characteristics it does because over the course of its evolution those characteristics generated behavior that led, on average, to higher reproduction for their bearers than individuals who possessed alternate available designs. Other aspects of the mind are byproducts of these adaptations, still others the result of idiosyncratic events (pathologies for instance). Nevertheless, the chances that the complex, functionally organized features of the mind could have arisen by pathways other than the process of natural selection are infinitesimally small, and it is because of them that we see systematic patterns of human thought, emotion, reasoning, and behavior. In other words, natural selection has shaped the complex, biologically functional features of our brains over long periods of time in response to recurrent adaptive problems of ancestral environments: i.e., they are psychological adaptations. Complex mental adaptations are usually expected to be universal to all humans of a given developmental stage. These psychological adaptations are elaborate information processing systems, which generate context-sensitive responses to differing environmental information, and their functional attributes can therefore be described in those terms. In turn, human culture is generated via the operation of these psychological adaptations (and their byproducts) of mutually interacting individuals in specific environments through time.

As an approach to psychology rather than a field of study (e.g., memory, vision, group dynamics, or social cognition) the basic theoretical and analytical tools of evolutionary psychology (derived from both the cognitive revolution and modern evolutionary biology) can be used to investigate any mental phenomenon and, by virtue of the fact that it is generated by our minds, behavior. If you have ever wondered why people do what they do, whether it be love, hate, lust, cheat, lie, go to war, experience nausea during pregnancy, use “baby talk” with infants, or make friends, then this class may be for you. However, there is a demanding amount of reading assigned each week which you must not only read, but attempt to understand and be able to summarize (see below). If you can do so you should be able to realize the goals of the class.

### Course Goals:

1. Understand why many standard explanations of why people do what they do are misleading in their apparent simplicity
2. Acquire knowledge and conceptual understanding of current evolutionary theory, life history theory, and cognitive or computational view of the mind, and how they can be used to understand the human mind and behavior.
3. Learn about a number of specialized information processing features that appear to have evolved as parts of the human mind, and the evidence about generally when and why these features evolved, and, for some, the extent to which they differ from those of other animals.
4. Learn about how these ideas have been tested and evaluate the data used to support or disconfirm these hypotheses.

**Be forewarned:**

Read and understand the following three statements. Continuing in the class indicates that you have read the following and understand these aspects of this course:

1. The human mind and human behavior are fascinating, but not always pretty or what we might wish them to be. Remember, therefore, that whether it be spatial navigation, food choice, marriage patterns, mate preferences, parental solicitude, infanticide, war, or procuring food, this course seeks to investigate the evolution of the mind. In other words, this course is about (1) evidence about *the way people behave*, (2) *hypotheses* to understand some aspects of this behavior, and (3) *data* relevant to testing these hypotheses. It is not about how you, I, or anyone else necessarily believes people *ought* to be, or what is morally good or bad. To confuse these is to commit an error so common that it has been given a name: the *naturalistic fallacy*. If you cannot intellectually distinguish between these, you should find a different course.
2. This course uses an evolutionary, cognitive, and scientific approach to human behavior. While you do not have to accept evolutionary theories of human behavior, you are required to understand them, answer questions about them, and be able to discuss the readings from that perspective. If you feel you will not be able to do so, you should find a different course. **In other words, you do not have to agree with all of the theories discussed in class, but you do need to understand them, and the evidence upon which they are based or which has been used to test them.**
3. Keep in mind that, as in all science, current empirical findings might need later revision or abandonment based on new studies, or later findings may ultimately falsify current hypotheses. This is an expected part of scientific advance.

**Prerequisites.** You would benefit from having exposure to biological approaches to behavior and, especially, to modern evolutionary theory. I don't assume you have such exposure however, so the first set of lectures will provide the background you need to understand the subsequent topics that we will cover.

### *Course Requirements*

**Important\*** In this class we will be exploring fascinating but complex issues. Class discussion and student response will inevitably expose areas which we find worthy of further exploration. The reading assignments or schedule may therefore be adjusted accordingly. It is my responsibility to decide when changes are necessary and to inform you of such changes; it is your responsibility to stay abreast of them, and to alter your reading schedule accordingly.

**Overview:**

This class will be run as a seminar. Each week selected students will provide a written (in type) summary of the main points from a portion of the week's readings to the other students and lead the discussion concerning those points. 30% of your grade will be based on these summaries. An additional 35% of your grade will be based on a midterm exam, and 35% on a final exam/paper.

Additional material covered in lecture is not necessarily covered in readings. Class Attendance is Mandatory: If you miss a class, you miss the equivalent of ten percent of the class (equal to 1 letter grade).

**Readings**

All assigned readings will be posted to the courses Blackboard site, as PDF or HTML documents under "course documents" listed by week. Reading assignments for a given day must be completed

before that day's lecture (see Blackboard Site information below). Additional reading will be assigned as appropriate to specific topics as the course develops.

### **Grading:**

1. Grading is based on one Midterm I (30%), one Final Paper(35%), and Article summaries (35%). Grading is done on a straight percentage scale so theoretically there is no reason that everyone cannot get A's in this course.
  - 90%+ = A
  - 80-89 = B
  - 70-79 = C
  - 60-69 = D
  - 50-60 = Where were you during class and why didn't you do the readings?
2. **Exam midterm format TBA**; final exam/paper is take home assignment. Detailed instructions will be given at the time of the exam.
  - a. **THERE ARE NO MAKEUP or LATE EXAMS** without Approved Proof of Legitimate Reason for missing the exam.
1. Article summaries (35% of your grade).
  - a. Each week selected students will summarize one of the week's readings.
  - b. You will provide each class member a short summary and outline of each of the articles you have read (typed and single spaced).
  - c. You will come to class prepared to lead a discussion of the articles you have outlined in class.
1. Final Exam/Paper (35% of your grade).
  - a. Your final paper will be an original contribution to understanding some aspect of human psychology or behavior in evolutionary perspective. You will make the case either that some known feature of human psychology is an adaptation, or a byproduct of other adaptations. Or, you will do a task analysis to predict a heretofore unsuspected adaptation or set of adaptations in the human mind.

### **Blackboard course site.**

We will make *extensive* use of Blackboard, which is a web-based course management application. I have created a Blackboard course site for this class, and you will be using it as a regular part of the class. The course site will contain announcements and reading assignments.

### **Reading assignments**

#### **Week 1: (Jan 10) Evolutionary Psychology**

Tooby J., and L. Cosmides. 2005. Conceptual Foundations of Evolutionary Psychology. In Buss ed. Handbook of Evolutionary Psychology. Wiley.

Hagen, E. The evolutionary Psychology FAQ:

[http://www.anth.ucsb.edu/projects/human/epfaq/evpsychfaq\\_full.html](http://www.anth.ucsb.edu/projects/human/epfaq/evpsychfaq_full.html)

Hagen E. 2005. Controversial Issues in Evolutionary Psychology

Kaplan H & Gangestad SW. 2005. Life History Theory and Evolutionary Psychology

**Week 2: (Jan 17) Human Life History Perspective. Survival I: Why we get sick**

Sugiyama LS. 2005. Physical Attractiveness in Adaptationist Perspective (section on human life history)

Nesse RM & Williams GC. 1995. Why we get sick. The Mystery of Disease and Signs and Symptoms of Infectious Disease (pp. 3-12; 26-48).

Nesse RM & Williams GC. 1995. Why we get sick. An arms race without end. (pp 49-65).

Nesse RM & Williams GC. 1995. Why we get sick. Genes and Disease. (pp. 91-106).

Flaxman & Sherman. 2000. Pregnancy Sickness

**Week 3: (Jan 24) Survival II: Foraging and Dangers from other humans**

Silverman & Eals. 1992. Sex differences in spatial abilities: Evolutionary theory and data. In, The adapted mind: Evolutionary psychology and the generation of Culture.

Joshua New, Max M. Krasnow, Danielle Truxaw and Steven J. C. Gaulin 2005. Spatial adaptations for plant foraging: women excel and calories count.

Silverman I & Choi J. 2005. Locating Places.

Blurton Jones & Konner. !Kung Knowledge of Animal Behavior

H. Clark Barrett, 2005. Adaptations to Predators and Prey

Duntley J. 2005. Adaptations to Dangers from Humans

**Week 4: (Feb. 1) Mating Psychology I.**

Symons D. 2005. Adaptationism and Human Mating Psychology

Schmitt DP. 2005. Fundamentals of Human Mating Strategies

Gangestad S, Thornhill R. & Garver-Apgar CE. 2005. Adaptations to Ovulation

Shackleford et al. 2005. Female Infidelity and Sperm Competition

Malemuth et al. 2005. Sexual Coercion

Penton-Voak, I. S., & Perrett, D. I. (2000). Female preference for male faces changes cyclically: Further evidence. *Evolution and Human Behavior*, 21, 39–48.

**Week 5: Mating Psychology II: Attractiveness assessment**

Sugiyama LS. 2005. Physical Attractiveness in Adaptationist Perspective, Pt 1.

Singh, D. (1993). Adaptive significance of female physical attractiveness: Role of waist-to-hip ratio. *Journal of Personality and Social Psychology*, 65. 293–307.

Yu, D., & Shepard, G. H. (1998). Is beauty in the eyes of the beholder? *Nature*, 396, 321–322.

And, responses. Yu, D., & Shepard, G. H. (1999). The mystery of female beauty. <I>Nature, 399,</I> 216.

T Frank Marlowe, C Apicella, D Reed 2005. Men's preferences for women's profile waist-to-hip ratio in two societies Evolution and Human Behavior.

Sugiyama LS. 2004. Is beauty in the context-sensitive adaptations of the beholder: Shiwiar use of waist-to-hip ratio in assessments of female mate value? Evolution and Human Behavior, 25(1) 52-63. (with discussion from Sugiyama, 1996).

**Week 6: (Feb 15). Mating Psychology II: Attractiveness cont.**

Martin J. Tovee\* and Piers L. Cornelissen, 2001. Female and male perceptions of female physical attractiveness in front-view and profile. British Journal of Psychology (2001), 92, 391-402

William D. Lasseka,b,□, Steven J.C. Gaulinb Waist-hip ratio and cognitive ability: is gluteofemoral fat a privileged store of neurodevelopmental resources?

Penton-Voak, I. S., & Perrett, D. I. (2000). Female preference for male faces changes cyclically: Further evidence. Evolution and Human Behavior, 21, 39-48.

Sugiyama LS. 2005. Physical Attractiveness in Adaptationist Perspective, Pt 2.

**Week 7: (Feb 22) Adaptations to group living**

Kurland J. & Gaulin SJC 2005. Cooperation and Conflict among Kin

Geary DC. 2005. Evolution of Parental Investment.

Salmon C. 2005. Parental Investment and Parent-offspring Conflict.

Kurzban R. 2005. Managing Ingroup and Outgroup Relationships

**Week 8: (March 1) Adaptations to group living II: Focal topic 3: Psychological basis for Moral reasoning.**

Haselton et. al. 2005. The evolution of cognitive bias.

Cosmides L & Tooby J. 2005. Neurocognitive Adaptations Designed for Social Exchange

Selective Impairment of Reasoning About Social Exchange in a Patient with Bilateral Limbic System Damage by Valerie Stone, Leda Cosmides, John Tooby, Neal Kroll, and Robert Knight

Cross-Cultural Evidence of Cognitive Adaptations for Social Exchange among the Shiwiar of Ecuadorian Amazonia by Lawrence S. Sugiyama, John Tooby, and Leda Cosmides

**Week 9: (March 8)**

Debra Lieberman, John Tooby and Leda Cosmides. Does morality have a biological basis? An empirical test of the factors governing moral sentiments relating to incest. *Proc. R. Soc. Lond. B* (2003) 270, 819-826

Robert Kurzban, John Tooby, and Leda Cosmides Can race be erased? Coalitional computation and social categorization by Proceedings of the National Academy of Sciences, 98 (26) 15387-15392 (#5414)

Michael Price, John Tooby and Leda Cosmides Punitive sentiment as an anti-free rider psychological device by, *Evolution and Human Behavior* 23: 203-231 (2002).

**Week 10: (March 15) Adaptations for Narrative, Art, and Music**

Scalise Sugiyama M. 1996. Origins of Narrative: Storyteller bias as a fitness enhancing strategy.

Scalise Sugiyama M. 2004. Cultural Relativism in the Bush: Towards a theory of narrative universals

Miller G. Arts as sexual signaling.

Mithen S. Art as information storage

Hagen & Bryant: music as coalitional signaling system