

Evolutionary Psychology

Psychology 358

Winter 2008

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Office hours: Monday 12:45 – 13:45

Meeting Time: MWF 2pm to 3pm

Meeting Place: Buchanan A202

Final Examination: see registrar

Course Description

This course introduces students to the rapidly expanding interdisciplinary area of evolutionary psychology. This approach applies the modern understanding of evolutionary processes to the study of human behavior and psychology. We will examine the evolutionary origins and underlying psychology of diverse phenomena, including altruism, incest, food preferences, kinship, ethnicity, xenophobia, reciprocity, parental investment, violence, homicide, war, honor, cultural learning, social norms, prestige, religion (supernatural beliefs), suicide, menopause, mating preferences, emotions (like jealousy, disgust, anger, love, and joy), and homosexuality. This course will emphasize a closely related set of theoretical approaches that allow us to transcend debates such as "nature vs. nurture" to examine human minds as joint products of three interactive processes: genetic evolution, cultural evolution (history), and ontogeny (development and learning). In studying these processes students will come to understand how both cultural and genetic evolution has shaped our feelings, motivations, psychological abilities and behavior, and how cultural evolution have shaped the course of human evolutionary history and altered the direction of genetic evolution.

Organizing Questions for this Course?

- 1) How can evolutionary theory assist us in understand human behavior, motivation, reasoning, illness, and psychology?
- 2) Why do parents love their children?
- 3) Why do we like sweet, fatty, foods more than vegetables?
- 4) Why are we disgusted by (1) incest and (2) feces?
- 5) How does the study of non-human animals change how we think about our species? Can other species reason? Do they have "cultures"? Do they have wars, homosexuality, menopause and emotions? Do primate mothers care about their offspring? What, if anything, is special about humans, or are we just another unique species?
- 6) How do individuals learn culture? What is learned, how is it learned, and from whom? Why does it evolve?
- 7) What does it mean to say that cultural evolution has altered the genetic evolutionary of our species? Can culture evolution drive genetic evolution?
- 8) If natural selection always favors selfishness, how can humans sometimes be so nice to each other? Are bees and mole rats also nice to each other?
- 9) Why do many people and all human societies believe in supernatural beings? How can we understand the resilience of god-beliefs in light of modern science?
- 10) What are the implications of an evolutionary understanding of our species for approaching such

phenomena as child rearing, violence, ethnicity, medicine, social change and economic development of a cultural-psychological approach to human behavior?

Course Materials and Resources

This course aims to integrate online resources, novel teaching technologies, standard textbook treatments, state-of-the-art research papers, multimedia class lectures, films, and contemporary popular writings from the mass media on relevant issues.

Online, Vista

There is a course website on the new Blackboard UBC Vista system. This system is the main vehicle for delivering (1) readings, beyond those in our two books, and (2) copies of the in-class lectures. Vista is at <https://www.elearning.ubc.ca/home/index.cfm>. Or log directly on at: <https://www.vista.ubc.ca/webct/logon/226906602011>.

There is also a forum for discussing the course and asking questions of your fellow classmates. I will not be regularly checking the site so all questions to me or TA Maciek should be emailed directly to us at the email addresses above.

Peer Response System

This course will use the Peer Response System (PRS). The system is now widely used in North America and in Science here at UBC. If you already have one, each student needs to obtain (purchase at the bookstore) a PRS clicker (with the textbooks for course). You will enter your student ID into this device and **must bring it to all classes**. The clicker will be used to (1) respond to practice questions, (2) take quizzes and practice quizzes, and (3) respond to in-class surveys. Starting on January 14th all PRS entries will be recorded and counted toward your *participation grade* (see below, participation does not mean you have to get the answer correct but only that you answered something).

The PRS clicker is a one time purchase and can be used in other classes. It can also be sold after our course.

Texts

Our course will use two books, one is a general text on evolutionary psychology applied to humans, and the other focuses on the evolution of cooperation (altruism) and develops a general theory for considering the interaction of culture and genes in evolution. It also provides a specific in-depth case example.

- Barrett, Louise, Robin Dunbar, and John Lycett (2002) *Human Evolutionary Psychology*. Princeton University Press.
- Henrich and Henrich (2007) *Why Humans Cooperate*. Oxford University Press.

You can get these books cheaper on-line. E.g., my book is \$25 new on-line, compared to \$39 at the bookstore. There are no readings in Barrett *et. al.* until Jan 16, and no readings in Henrich and Henrich until Feb 4, so you have some time to obtain these.

Posted Readings (on Vista or via web link from Vista)

- 1) Boyd and Silk *How Humans Evolved*. Chapters 1 and 2.
- 2) Flaxman, Sam and Paul Sherman (2000) Morning Sickness: A Mechanism for protecting mother and embryo. *The Quarterly Review of Biology* 75 (2): 113-148.
- 3) Henrich, Joseph & Gil-White, Francisco (2001) The Evolution of Prestige: freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and Human Behavior*, 22 (3): 165-196.
- 4) Sherman, Paul and Jennifer Billing (1999) Darwinian Gastronomy: Why We Use Spices *BioScience*, 49 (6): 453-463.

- 5) Silk, Joan B., Sarah F. Brosnan, Jennifer Vonk, Joseph Henrich, Daniel J. Povinelli, Amanda S. Richardson, Susan P. Lambeth, Jenny Mascaro, & Steven J. Shapiro (2005) Chimpanzees are indifferent to the welfare of unrelated group members. *Nature*, 437: 1357- 1359.
- 6) Henrich, Joseph, McElreath, Richard, Barr, Abigail, Ensimger, Jean, Barrett, Clark, Bolyanatz, Alexander, Cardenas, Juan Camilo, Gurven, Michael, Gwako, Edwina, Henrich, Natalie, Lesorogol, Carolyn, Marlowe, Frank, Tracer, David, Ziker, John. Costly Punishment Across Human Societies, *Science*, 312: 1767- 1770.
- 7) Atran, Scott, Douglas Medin and Norbert Ross Evolution and Devolution of Knowledge: A Tale of Two Biologies. *Journal of the Royal Anthropological Institute*, 10, 395-420.
- 8) Boyer, Pascal (2003) Religious thought and behavior as by-products of brain function. *TRENDS in Cognitive Sciences*, Vol. 7(3) 119-124.
- 9) Boyer Pascal <http://www.csicop.org/si/2004-03/religion.html>.
- 10) Ekman, Paul (1999) Basic Emotions. In *Handbook of Cognition and Emotion*. T. Dalgleish and M. Power (eds.). John Wiley & Sons Ltd., Sussex, U.K.
- 11) Nisbett, Richard. All Brains are the Same Color. *New York Times*. Op Ed. December 9, 2007.
- 12) Gladwell, Malcolm None of the Above: What I.Q. doesn't tell you about race. *The New Yorker*. December 17, 2007.
- 13) Thompkins, Gwen Kenya's Upcoming Elections Bring Ethnic Tension. National Public Radio. December 21, 2007.

Course requirements and weightings for final grade:

Your course grade is based on your class participation (via the PRS), your top 5 quiz grades, and the final examination. The relative weighing in grading breaks down as in the Table.

Participation: We will be using the PRS in all classes. Throughout our classes I will be asking a variety of questions and giving practice quizzes. Each time a student clicks in a response this will be recorded. Participation grades will be assigned according to effort (rather than correct answers) and calculated by dividing the total number of responses the particular student gives divided by the total number of possible responses over the total course.

Grading Instrument	Percentage contribution
Participation	15%
Top 5 of 6 Quizzes	65%
Final Exam	20%

I will endow each student with "12 free clicks" at the start but also stipulate that if a student exceeds the total number of clicks possible over the course they will only receive the maximum. For example, suppose a student starts with the 12 clicks and then makes all the possible clicks in the class over the whole course (say that is 300 clicks). They will have 312 clicks and will get a score of 300/300 (100%) for their participation grade. If a student misses a class or even two, they might have 301 clicks over the course, in which case they would receive the same participation grade 300/300. If a student clicks in 280 out of 300 chances they will get a participation score of 280/300. This should alleviate concerns that students may have about missing class for unavoidable reasons or about clicker during a class malfunctions.

The practice quizzes included as part of the participation grade will provide students with a ready assessment of their mastery of the material between quizzes. This will generally occur on the Fridays between quizzes. Feedback will be immediate. I recommend approaching the practice quizzes as if they were real quizzes.

Quizzes: Approximately every other week a quiz will be given covering all the material since the previous quiz, or the beginning of the semester in the case of the first quiz. These will all occur on Fridays, except for the final quiz. In determining your final quiz grade I will take only your top five quiz grades. If you have to miss a quiz for any reason (any reason), you will receive a zero, but this won't be counted unless you miss more than one quiz. Since feedback will be immediate, no make-up quizzes can ever be given.

Quizzes will take a variety of formats, depending on the material. Most questions will focus on testing for a deep conceptual understanding of the material, although there are some plain old facts that one must know as well. Many of the questions will be multiple-choice or true-false, however short answer and fill-in-the-blank formats will also be used.

Final Exam: The Final is cumulative over the entire semester. The structure of the final will mirror that of the quizzes and practice quizzes. Students must be available for the final examination, so do not schedule your departure until after our Final. Check the registrar for the date.

Scaling of Grades: Psychology Department's Policy on Grade Distributions and Scaling

I would like to give everyone A's who gives their best effort. However: grades will be scaled in order to maintain equity among courses and to conform to University, Faculty, or Department norms.

The primary function of grades is to inform you (and other people) as to your performance *relative* to other students taking the course. In order for grades to serve this function, it's important that average performance is reflected in an average grade (something in the C range), that better-than-average-but-not-great performance is reflected in a better-than-average-but-not-great grade (something in the B range), and so forth. The Faculty of Arts is very concerned about "grade inflation" and has set guidelines for the appropriate distributions of grades in courses at all levels. This is something we really pay attention to in the Psychology Department. So, for this course, the expectation is that the average final grade will be around 65 (that's a C+) and will be normally distributed around that mean (producing just as many failing grades as A's). I will scale the exams in such a way to ensure that the distribution of final grades in this class meets these guidelines. The Departmental Chair, however, reserves the right to change any grades, so you don't know your final grade until you hear from the University.

Schedule

Class #	Day and Date	Topics and Assignments
Class 1	M Jan 7	Introduction: Plan for the course, expectations, and outline.
Class 2	W Jan 9	Natural Selection and Genetics: How does evolution and natural selection work? What's the evidence for evolution and how it works? What are genes? <i>Reading:</i> Boyd and Silk Chapters 1 and 2
Class 3	F Jan 11	Natural Selection and Genetics Continued: Can natural selection really create complex structures like the eye, or the emotion of jealousy, via small random changes? If mutation rates are so low, how can evolution be fast enough? Is there evidence that humans are affected by natural selection?
Class 4	M Jan 14	Meet the Cousins: Non-Human Primates: What can primates tell us about human psychology and human behavior? How similar are human to non-human primates? Do primates have cultures? Can primate reason? Do primates cooperate? Do primates care about other members of their groups? Are there males have sex with other males and females with females? Do chimpanzees engage in hunt, make tools, live in caves and conduct warfare? Do chimpanzees build coalitions, fight for dominance, and play politics? <i>Reading:</i> Boyd and Silk Chapter 5, pages 114-131 (Vista) <u>MUST have PRS clicker by today. Participation grading commences.</u>

Class 5	W Jan 16	<p>Human Evolutionary History and Ancestral Human Environments: Central to understanding how natural selection may have shaped human behavior and psychology is assessing the ancient environment that our ancestors lived and died in. What kinds of environments did humans evolve in? How important was foraging and hunting? Was there a division of labor between males and females? How big were the groups? Where did they live? On what did survival depend? Where there infectious diseases? Are we designed to eat meat? What wasn't there in this EEA?</p> <p><i>Reading:</i> Barrett et. al. Chapter 2</p>
Class 6	F Jan 18	<p>Practice Quiz, Discussion, and Film (administered by TA) Practice quiz on material since the beginning of the course. TA will review the practice quiz and take questions. The film will illuminate primates.</p> <p>Instructor is away</p>
Class 7-8	M W Jan 21, 23	<p>Evolutionary Health and Medicine: Why do we like fatty, sugary foods if they are bad for us? How can fevers be good for you? How can iron-poor blood be an adaptation? Is it a good idea to put ice on a swollen ankle? Why do we die at all?</p> <p>Guest Instructor: Dr. Natalie Henrich</p> <p><i>Reading:</i> Flaxman and Sherman 2000</p>
Class 9	F Jan 25	<p>Quiz 1 and Quiz Review</p> <p>Lecture and Discussion: Pregnancy sickness is an adaptation: How can a "sickness" be an adaptation? How can evolution be used to predict what and when will disgust women during pregnancy.</p>
Class 10	M Jan 28	<p>Kinship, Incest, and the problem of altruism: Why do close blood relatives love each so much yet are disgusted at the idea of having sex? Is blood thicker than water? How does understanding kinship help explain murder? Do people really kill their relatives more frequently than non-relatives?</p> <p><i>Reading:</i> Barrett et. al. Chapter 3</p>
Class 11	W Jan 30	<p>Parental Investment Theory: How can evolutionary theory ever explain infanticide? Why do maternal grandparents invest more in their grandchildren than paternal grandparents? What is the truth about Cinderella? Are step-mothers really wicked?</p> <p><i>Reading:</i> Barrett et. al. Chapter 7</p>
Class 12	F Feb 1	<p>Practice Quiz and Review</p> <p>Mini-lecture on the Nurture Assumption</p> <p>Discussion and implications of parental investment theory: What are the real costs of divorce and remarriage for children?</p>
Class 13	M Feb 4	<p>Dual Inheritance Theory: How can evolutionary theory be used to construct a theory of cultural evolution? Are "cultural" and "evolutionary" explanations really opposed?</p> <p><i>Reading:</i> Henrich & Henrich, Chapter 1 and 2</p>

Class 14	W Feb 6	<p>The Evolution of Prestige and Conformity: What is prestige? How did it evolve? Why do people pay deference to high skilled, knowledgeable or prestigious people? What is the difference between dominance and prestige? Do non-human primates have prestige? Why do people care what celebrities think and pay so much attention to their lives? How can conformism be adaptive?</p> <p><i>Readings:</i> Henrich & Gil-White 2001</p>
Class 15	F Feb 8	<p>Quiz 2, Review and Discussion</p> <p>Mini-lecture: Prestige and Suicide: Is our instinct for emulating prestigious people so powerful it can help explain patterns of suicide?</p>
Class 16	M Feb 11	<p>Cultural Adaptations: Evolved mechanism of cultural transmission can give rise to true adaptations. Are kayaks an adaptation? Why spices are cultural adaptations? How are Fijian food taboos an adaptation?</p> <p><i>Reading:</i> Biling and Sherman 1999</p>
Class 17	W Feb 13	<p>Cognitive Foundations and Intuitive Ontologies: What does modularity mean? Are our minds domain-specific and modular? Do infants know stuff when they first arrive on the scene? Do they already have expectations about the world, about what kinds of things are in the world? What is intuitive ontology? Do people have an intuitive sense of number or physics? What numbers do we understand intuitively? What is theory of mind, and how early does it develop.</p> <p>Guest Instructor: Maciek Chudek</p> <p><i>Reading:</i> Barrett et. al. Chapter 11</p>
Class 18	F Feb 15	<p>Practice Quiz and Discussion</p> <p>Mini Lecture: Race</p> <p><i>Reading:</i> Gladwell and Nisbett (Vista)</p>
Class 19	M Feb 25	<p>Prepared to Learn: Why are some things easier to learn and remembers than others? What makes a good story, or urban legend? Why might kids recall information about the dangerousness of animals more than other kinds of information? What kinds of things do people get phobias toward? Snakes, heights, spiders, enclosed spaces? Why those things? Why are there vegetarians but not meatitarians?</p> <p><i>Reading:</i> Henrich and Henrich Chapter 3</p>
Class 20	W Feb 27	<p>The logic of cooperation: kinship, reciprocity and culture: How can evolutionary theory explain altruism? What is the difference between direct and indirect reciprocity? Can cultural beliefs about how babies are made influence parental investments?</p> <p><i>Reading:</i> Henrich and Henrich Chapters 5 and 6</p>
Class 21	F Feb 29	<p>Quiz 3 and Review</p> <p>Discussion of Reciprocity</p> <p><i>Reading:</i> Henrich and Henrich, Chapter 4</p>

Class 22	M March 3	<p>Culture-gene coevolution, norms, and the emergence of human sociality: What is cultural group selection and how might it influence genetic evolution of human social norms and altruism? Is there evidence that culture can influence genes?</p> <p><i>Readings:</i> Henrich and Henrich Chapter 7 and 8</p>
Class 23	W March 5	<p>Emotions and Expression: How can evolution help us understanding emotions? How does an evolutionary approach flip the assumption that "passions" interfere with "reason" on its head. Are their universal expressions of emotion in our species? Do people in different societies "feel" different emotions in different societies?</p> <p><i>Readings:</i> Ekman 1999 Basic Emotion and 1999 Face</p>
Class 24	F March 7	<p>Practice Quiz</p> <p>Lecture: Behavioral Immune System</p> <p>Guest Instructor: Lesley Duncan</p> <p><i>Reading:</i> Schaller and Duncan on the Behavioral Immune System (Vista)</p>
Class 25	M March 10	<p>Sociality in Broad Spectrum: Does human sociality vary across populations? How different are peoples in their notions of fairness, punishment, and altruism? Are people self interested? Are chimps self-interested? Does a society's market integration predict more or less altruism?</p> <p><i>Reading:</i> Henrich et. al. 2006 and Silk et. al. 2005 (Vista)</p>
Class 26	W March 12	<p>Cultural Maladaptations: What is the demographic transition? How could evolutionary theory ever explain this? How can adaptive cultural learning explain it? Female circumcision. What does the Tasmania case illustrate?</p> <p><i>Reading:</i> Barrett et. al. Demographic Transition p158-163</p>
Class 27	F March 14	<p>Quiz 4 and Review</p> <p>Primate vs. Human Sociality: What is the same and different about human and primate sociality?</p>
Class 28	M March 17	<p>Puzzles: The Evolution of Homosexuality and Menopause: How could evolution explain homosexuality? Is homosexuality a cultural aberration in our society, or is it common in many societies and throughout the animal kingdom?</p> <p><i>Reading:</i> Barrett et. al. Menopause (p 164) and Homosexuality (Box 6.7)</p>
Class 29	W March 19	<p>What are these Big Brains for, anyway? Evolution of Culture and Language: How did evolution make our brain so big and why? Why do we have such a long juvenile period? Is it getting longer? Where might culture fit into this? How can culture drive genetic evolution?</p> <p><i>Readings:</i> Barrett et. al. Box 6.1 and Box 6.2 (Vista).</p>
Class 30	W March 26	<p>Sex and Mate Selection: What is it about the fundamentals of sexual reproduction that leads to such differences between males and females? Why are there sexes at all? Why do females often care relatively more than males about potential mates' wealth, status, and future prospects ? When don't</p>

		<p>women care about these? Why are men attracted to relatively younger potential mates? Why do men like breasts at all? Are there certain body shapes that males prefer, universally? Can women smell how good a guy's immune system is?</p> <p>Reading: Barrett et. al. Chapter 5</p>
Class 31	F March 28	Practice quiz, review and discussion
Class 32	M March 31	<p>Mate Selection continued: How can you guess when a woman is ovulating? In what ways do women's mate preferences change over their mating cycle? The evolutionary functions of male orgasms are pretty obvious, but why do females sometimes orgasm (and sometimes not)?</p> <p>Reading: Barrett et. al. Box 9.6</p>
Class 33	W April 2	<p>Pair-bonding and marriage: Are humans naturally monogamous? Do all societies have marriage? Are there any societies in which the women can seek out extra sex partners? Are there societies in which two men share one wife? If societies lacked marriage (pair-bonding) who might we predict would take on the "fatherly role"?</p> <p>Reading: Barrett et. al. Chapter 8</p>
Class 34	F April 4	<p>Quiz 5, Discussion, Film (on marriage)</p> <p>Folkbiology and Folksociology: Are there human universals in how people categorize the natural world? What are our specialized mental capacities for thinking about living kinds? How is our cognitive ability a product of culture-gene coevolution? What has happened to our understanding of biology? Why do people think about some human groups differently from other human groups? What is essentialism and how does it apply to thinking about human groups? How do people think about groups, and why ethnicity (and race) is salient?</p> <p>Reading: Henrich and Henrich Chapter 9</p>
Class 35	M April 7	<p>Origins of Religion: Why do people believe in invisible beings with superpowers that do stuff for you if you say words inside of your head to them? How is it that they are so sure of that these beings exist? Are ghosts, gods, superheroes, aliens and other mythic creatures "easy to think" in some way. The evolved universal structure of religious thought. How is religion like a chili pepper?</p> <p>Reading: Boyer (2 readings on Vista)</p>
Class 36	W April 9	<p>Origins of Religion II: How do religious institutions evolve? Might they evolve by cultural group selection? Does religious freedom cause more religious fundamentalism?</p> <p>Guest lecturer: Azim</p> <p>Reading: Henig Darwin's God</p>
Class 37	F April 11	Quiz 6 and Review for Final Exam

Psychology Department's Policy on Grade Distributions and Scaling

In order to reduce grade inflation and maintain equity across multiple course sections, all psychology courses are required to comply with departmental norms regarding grade distributions. According to departmental norms, the mean grade in a 300-level class is 70 for a good class, 68 for an average class, and 66 for a weak class, with a standard deviation of 13). **Scaling** is likely to be used in order to comply with these norms; grades may be scaled up or down as necessary by the professor or department.

Psychology Department's Position on Academic Misconduct

Cheating, plagiarism, and other forms of academic misconduct are very serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. In the first place, the Department has implemented software that can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses. In addition, the Department subscribes to *TurnItIn*--a service designed to detect and deter plagiarism. All materials (term papers, lab reports, etc.) that students submit for grading will be scanned and compared to over 5 billion pages of content located on the Internet or in TurnItIn's own proprietary databases. The results of these comparisons are compiled into customized "Originality Reports" containing several, sensitive measures of plagiarism; instructors receive copies of these reports for every student in their class.

In all cases of suspected academic misconduct, the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript. All graded work in this course, unless otherwise specified, is to be original work done independently by individuals. Do **not** use Google/Yahoo/MSN Search/etc. to find articles for assignments in this course. **Do** use any of the indexes and databases listed under Indexes and Databases, Subject Resources, OneSearch or Metasearch on the Library's website at <http://www.library.ubc.ca>. (Not sure which index to use? Click HELP on the library homepage at www.library.ubc.ca or try Subject Resources.) If you have any questions as to whether or not what you are doing is even a borderline case of academic misconduct, please consult your instructor. For details on pertinent University policies and procedures, please see Chapter 5 in the UBC Calendar (<http://students.ubc.ca/calendar>).

Special Accommodations:

UBC accommodates students with disabilities who have registered with the Disability Resource Centre (DRC). If you have a disability that may affect your performance in this class, please make sure you have contacted the DRC to arrange for accommodations. Please let me know of these accommodations as soon as possible.

UBC also accommodates students whose religious obligations conflict with attendance, assignments, or examinations. Please let me know as soon as possible -- and well in advance of any assignment or examination -- if you will require any accommodation on these grounds.

The university does not have any formal policy on accommodating students who plan to be absent for varsity athletics, family obligations, or other similar commitments. So, please do not assume that you will get special accommodations for these sorts of absences. It is your responsibility to ensure that you meet the course requirements as scheduled. If you do plan to be absent during any time an assignment or examination is scheduled, please discuss this with me as soon as possible (and make sure you do so before the drop date.)