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**Course Description**

Behavioral ecology is the study of evolution and adaptation in an ecological context. This course will introduce students to the field of behavioral ecology and the topics that have been explored within this paradigm, as applied to humans (especially foraging societies) and our primate cousins. Specifically, we will examine human and primate subsistence and foraging patterns, social behaviors, cultures, reproduction, and life histories using evolutionary and ecological perspectives. Discussion will focus on the patterns of behavioral variability between and within human and non-human primate populations, with strong focus on comparison between human and nonhuman primate adaptations. We will also explore the uniqueness of humans and the evolution of culture as a biological adaptation that can be examined scientifically. The course will appeal to students interested in any discipline that deals with human and primate behavior, including human ecology, cultural anthropology, primatology, evolutionary biology, archaeology, and human paleontology.

**Prerequisites:** This is an **upper-division reading-intensive course** geared towards motivated undergraduate students. Although there are no prerequisites, it is highly recommended that students have background in anthropology and/or biology prior to registering for this class.

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**Course Goals and Learning Outcomes**

At the end of this course, students will...

1. Be familiar with the methods and scientific theories that anthropologists and behavioral ecologists use when conducting research.
2. Understand the role that evolutionary and biological processes have played and continue to play in shaping human life histories, psychological constitutions, sociality, and behavioral profiles.
3. Be able to identify the links between biology, ecology, and behavior in humans and non-human primates.
4. Be able to use critical reading and writing skills to assess ideas in human and primate behavioral ecology.

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**Required Texts**

1. ***Evolution & Human Behavior, 2<sup>nd</sup> Ed*** 2008  
John Cartwright ISBN: 9780262533041
2. ***The Evolution of Primate Societies*** 2012  
John Mitani et al. ISBN: 9780226531724
3. **Articles on Canvas website**

Suggested Text: *Primate Behavioral Ecology, 4<sup>th</sup> Ed.* 2010  
Karen Strier ISBN: 9780205790173

The readings are supplemental to information provided in the classroom. **Please come prepared to all lectures (i.e. do the assigned reading before coming to class).**

- **Canvas Course Website:** <https://usu.instructure.com/courses/352146>

On the Canvas website, students can access required readings, selected lecture slides, current grades, and other course materials. *You are required to read all posted messages; check the website regularly* for announcements, schedule changes, and newly uploaded materials.

## Grading and Course Requirements

Each score will be rounded to the nearest whole number. Grades may be curved at my discretion.

- **Exams:** There will be three equally weighted exams, each of which is worth 20% of your final grade (**60%** total). Exams are not cumulative and will include information from lectures, readings, and films covered since the previous exam.

However, *understanding some concepts*

*may depend on those learned earlier in the semester.* Each exam will consist of a combination of multiple choice and short-answer questions.

A study guide may be provided prior to each exam. The absence of a term/concept from the study guide does not preclude it from being included in the exam, nor does presence in the list guarantee it will be on the exam.

	Points	% of Final Grade
Exam 1	100	20
Exam 2	100	20
Exam 3	100	20
Attendance & in-class assignments	100	20
Reading Responses (10)	100	20
<b>Total</b>	<b>500</b>	<b>100%</b>

A: 100-90% B+: 89-87% B: 86-80% C+: 79-77% C: 76-70%  
D+: 69-67% D: 66-60% F = Below 60%

- **Participation and Discussions:** Participation in class discussions will be recorded as a form of attendance. Attendance will count for **20%** of your final grade (100 points). Forms of attendance will include: **(1) completion of in-class assignments, (2) active participation in discussions, and (3) roll call.**

Class discussions are scheduled in advance (see detailed schedule), and will center on a preassigned set of readings (usually articles from a scholarly journal). It is crucial to complete the readings *before* each discussion, as the quality and depth of information that we can cover will depend on your preparation. During discussions, students must sit in a pattern that facilitates open discussion.

- **Reading Responses:** For class discussions, each student must bring to class a 1-page response to the assigned readings. The goal of these responses is to ensure you are prepared to contribute to discussions. There are 11 scheduled discussions, and students must come prepared with written responses for 10 of these days (10 points each; 100 points total; **20%** of grade).

Prompts for the responses may be posted on Canvas to help guide your thinking; try to think identify a theme and each paper's contribution to that theme. This response must include 1) a summary of all readings (at least one paragraph), 2) a discussion question drawn from *each* reading, and 3) an analysis portion that includes response, commentary, and/or criticisms. All reading responses must be typed, printed, and turned in at the end of a discussion class (no emailed submissions will be accepted).

- **Extra Credit:** Opportunities for extra credit *may* be provided throughout the semester, not to exceed a maximum of 10 extra points possible. You should focus your attention on learning the coursework rather than seeking extra credit opportunities.

## **Attendance, Class Participation, and Discussions**

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Regular attendance is crucial to success in this course, and attendance will be taken regularly during the semester. The only acceptable excuses for missing class are medical or family reasons, and those listed in the USU Code of Policies and Procedures. *Students are responsible for notifying Dr. Grow of absences as soon as possible, and all students must keep up with missed material.*

- **Policies on Written Work:** In this class, there is a **no quotation** policy. This means that you should not quote sources directly. Quotations may only be used in rare instances where there is a good reason to preserve the exact wording of the original author. All quotations must be introduced within a sentence using your own words. You must **cite** ALL ideas that you did not independently develop. Failure to cite or adhere to quotation guidelines will result in points subtracted from your assignment's score.
- **Late Assignment Policy:** *No late work will be accepted* without proof of an excused absence on the due date; this policy encompasses the reading responses, in-class assignments, and final paper. No exceptions will be granted. Students who fail to turn in an assignment without a legitimate excuse will receive zero credit for that assignment. Students should report in advance all planned excused absences.
- **Make-up Exam Policy:** Make-up exams will not be offered unless you have a valid excuse. Students who miss a scheduled exam due to a university excusable absence must provide documentation within one week of the absence and schedule a makeup exam. Students who miss an exam *without* a legitimate excuse will receive zero credit for that exam. It is your responsibility to contact Dr. Grow as soon as possible to schedule a time to take the exam.

## **Academic Integrity Statement**

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- **Plagiarism Statement:** Plagiarism consists of passing off someone else's ideas, words, or writing as your own. You are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person and *even if the copying is inadvertent*. For more information about plagiarism and USU policies, please consult the USU Code of Policies and Procedures for Students, Article VI.
- **Copyright Statement:** All materials and handouts used in this course are copyrighted. These materials include, but are not limited to: syllabi, lecture slides, in-class handouts, exams, lab problems, review sheets, and problem sets. Because these materials are copyrighted, you do not have the right to copy or distribute the handouts without expressly granted permission.
- **Academic Dishonesty Policy:** Academic dishonesty comprises the unauthorized distribution of information, cheating, and/or plagiarism. The USU Honor Pledge states: "I pledge, on my honor, to conduct myself with the foremost level of academic integrity." Evidence of cheating or plagiarism on any exam, assignment, or paper may result in a failing grade. Academic dishonesty is never tolerated, and offending students will be reported to the university for further possible disciplinary proceedings at the discretion of department, college, and Dean including probation, suspension, expulsion, withholding of transcripts, and denial or revocation of degrees.
- **Privacy Statement:** In compliance with the Family Educational Rights and Privacy Act (FERPA), it is the policy of the Department of Sociology, Social Work, & Anthropology at Utah State University to maintain the confidentiality of students' records.

• **Americans with Disabilities Act (ADA) Statement:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring accommodation, please contact the university. Alternate format materials are available with advanced notice. All accommodations are coordinated through the Disability Resource Center (DRC), University Inn Room 101 (797-2444 voice, 797-0740 TTY). Please contact the DRC as early in the semester as possible.

• **USU Classroom Civility Policy:** Utah State University respects the rights of faculty to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede the learning process. Disruptive classroom behavior will not be tolerated. An individual engaging in such behavior may be subject to disciplinary action.

### How to Succeed in this Course

- Be on time. Do not disrupt the class with your tardiness. If you are late, enter through the back. If you must leave early, take a seat near the door, and notify me beforehand.
- Write it down! Take detailed lecture notes and review them on a regular basis.
- Come to class prepared. Read and think about the topic beforehand, and be ready to discuss the readings/ask questions.
- Participate in class discussions. Be an active listener. Be respectful.
- Focus. Turn off your phone. If you use your laptop to take notes, do not surf the web, check social media, do homework for other courses, etc. during this class.

### Questions?

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I am here to help you understand the course material. ☺ Questions about the assigned readings or the material presented in lecture can be answered in-class, during office hours, or via email. Please identify yourself! Put the **course name or number in the subject line for all email correspondence**, sign with your full name, and use complete sentences.

### List of Supplemental Readings (available on Canvas)

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- Alvard, M. S. 2003. The adaptive nature of culture. *Evolutionary Anthropology* 12:136-149.
- Anderson, K. G., H. Kaplan, and J. Lancaster. 1999. Paternal care by genetic fathers and stepfathers I: reports from Albuquerque men. *Evolution and Human Behavior* 20:405-431.
- Andrews, P., S. Gangestad, and D. Matthews. 2003. Adaptationism – how to carry out an exaptationist program. *Behavioral and Brain Sciences*. 25:489-553.
- Boesch, C., & Tomasello, M. (1998). Chimpanzee And Human Cultures. *Current Anthropology*, 39(5), 591-614.
- Bogin, B., and B. H. Smith. 1996. Evolution of the human life cycle. *American Journal of Human Biology* 8:703-716.
- Borgerhoff Mulder, M. 1998. The demographic transition: are we any closer to an evolutionary explanation? *Trends in Ecology & Evolution* 13:266-270.
- Buss, D. M. 1989. Sex differences in human mate preferences: evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences* 12:1-14.
- Clutton-Brock, T. H. 1991. *The Evolution of Parental Care*. Princeton: Princeton University Press.
- Cronk, 1991, Human Behavioral Ecology. *Annual Review of Anthropology* 20:25-53.
- Garver-Apgar, C. E., S. W. Gangestad, R. Thornhill, R. D. Miller, and J. J. Olp. 2006. Major histocompatibility complex alleles, sexual responsivity, and unfaithfulness in romantic couples. *Psychological Science* 17:830-835.
- Gomes, C. M., & Boesch, C. (2009). Wild chimpanzees exchange meat for sex on a long-term basis. *PLoS One*, 4(4), e5116.
- Gould, S. J. 2000. "More things in Heaven and Earth," in *Alas, Poor Darwin*. Edited by H. Rose and S. Rose, pp. 101-106. New York: Random House.
- Gremillion, K.J. 2002. Foraging theory and hypothesis testing in archaeology: An exploration of methodological problems and solutions. *Journal of Anthropological Archaeology* 21: 142-164.
- Guven, M., and K. Hill. 2009. Why do men hunt? *Current Anthropology* 50(1): 51-74

- Haufe, C. 2008. Sexual selection and mate choice in evolutionary psychology. *Biological Philosophy* 23:115-128.
- Hawkes, K. Game Theory. (1992). In: Smith, Eric A. & Bruce Winterhalder (1992) *Evolutionary Ecology and Human Behavior*. New York: Aldine de Gruyter. ISBN: 0202011844
- Hawkes, K., J. F. O'Connell, N. G. Blurton Jones, H. Alvarez, and E. L. Charnov. 1998. Grandmothering, menopause, and the evolution of human life histories. *Proceedings of the National Academy of Science* 95:1336-1339.
- Hawkes, K., O'Connell, J. F., & Blurton Jones, N. G. (2001). Hadza meat sharing. *Evolution and Human Behavior*, 22(2), 113-142.
- Henrich J. 2002. Decision-making, cultural transmission and adaptation in economic anthropology. In: *Theory in Economic Anthropology*, Ed. Jean Ensminger. AltaMira Press, pp. 251-295.
- Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., & McElreath, R. (2001). In search of *Homo economicus*: behavioral experiments in 15 small-scale societies. *American Economic Review*, 73-78.
- Hrdy, SB. *Mother Nature: Maternal Instincts and how they Shape the Human Species*. "Chapter 10: The Optimal Number of Fathers."
- Kaplan, H. and Hill, K. 1992. The evolutionary ecology of food acquisition. In: *Evolutionary Ecology and Human Behavior*. Smith, E.A. and Winterhalder, B. (Eds.) (1992) New York: de Gruyter. Pp. 167-201
- Kaplan, H., K. Hill, J. Lancaster, and A. M. Hurtado. 2000. A theory of human life history evolution: diet, intelligence, and longevity. *Evolutionary Anthropology*.
- Kaplan, H., Lancaster, J. B., Tucker, W. T., & Anderson, K. G. (2002). Evolutionary approach to below replacement fertility. *American Journal of Human Biology*, 14(2), 233-256.
- Marlowe, F. 2000. Paternal investment and the human mating system. *Behavioural Processes* 51:45-61.
- Mitani, J. C., & Watts, D. P. (2001). Why do chimpanzees hunt and share meat?. *Animal Behaviour*, 61(5), 915-924.
- Neel, J. V. 1999. The "thrifty genotype" in 1998. *Nutrition Reviews* 57:S2-S9.
- Nesse, R. M. 2000. Is depression an adaptation? *Archives of General Psychiatry* 57:14-20.
- Richerson, P. and Boyd, R. Cultural inheritance and evolutionary ecology.. (1992). In: Smith, Eric A. & Bruce Winterhalder (1992) *Evolutionary Ecology and Human Behavior*. New York: Aldine de Gruyter. ISBN: 0202011844
- Shennan, S. J., & Wilkinson, J. R. (2001). Ceramic style change and neutral evolution: a case study from Neolithic Europe. *American Antiquity*, 577-593.
- Smith, E. A. 2000. "Three styles in the evolutionary analysis of human behavior," in *Adaptation and Human Behavior: An Anthropological Perspective*. Edited by L. Cronk, N. Chagnon, and W. Irons. New York: Aldine de Gruyter.
- Whiten, A. (2005). The second inheritance system of chimpanzees and humans. *Nature* 437(7055): 52-55.
- Winking, J. 2006. Are men that bad as fathers? The role of men's investments. *Social Biology* 53:100-115.
- Winking, J., H. Kaplan, M. Gurven, and S. Rucas. 2007. Why do men marry and why do they stray? *Proceedings of the Royal Society of London B: Biological Sciences* 274:1643-1649.
- Wrangham, R. W., & Glowacki, L. (2012). Intergroup aggression in chimpanzees and war in nomadic hunter-gatherers. *Human Nature*, 23(1), 5-29.

## Schedule of Lectures and Reading Assignments

All readings should be completed *before* the class for which each is assigned. Readings marked with an asterisk (\*) are on the website. **Bolded readings are assigned for that week's discussion.** Additional readings may be assigned through the course website. *Schedule is subject to modification.*

Week	Date	Topic	Event	Reading
<b>1</b> <b>Evolution &amp; behavior</b>	W 1/7	Course Introduction; Scientific Method		
	F 1/9	Evolution by Natural Selection; Human evolution & primate models		Cartwright Ch 2 Mitani Ch 6 (Watts)  <i>Suggested:</i> Strier Ch 4
<b>2</b> <b>Adaptation</b>	M 1/12	Evolutionary approaches to the study of behavior; adaptationism		Cartwright Ch 1 <b>*Smith 2000</b>
	W 1/14	Adaptationism		<b>*Gould 2000</b>
	F 1/16	<b>Discussion 1:</b> The pitfalls of hyper- and anti-adaptationism	Reading Response #1 DUE	Cartwright Ch. 17 <b>*Andrews et al. 2003</b>
<b>3</b> <b>Optimization: getting food and resources</b>	M 1/19	<b>NO CLASS – MLK Jr. Day</b>		
	W 1/21	Foraging strategies; Optimal Foraging Theory		Mitani Ch 7 (Chapman et al.) <b>*Kaplan and Hill 1992</b>  <i>Suggested:</i> Strier Ch 6
	F 1/23	<b>Discussion 2:</b> Applying OFT	Reading Response #2 DUE	<b>*Gremillion 2002</b>
<b>4</b> <b>Cooperation &amp; collective action</b>	M 1/26	Cooperation I: Kin Selection, Altruism		Cartwright Ch 9 pp. 189-200 Mitani Ch 21 (Langergraber)
	W 1/28	Cooperation II: Non-Kin; Reciprocity; Evolutionary economics		Cartwright Ch 9 pp. 201-211 Mitani Ch 22 (Gilby) <b>*Mitani &amp; Watts 2001</b>  <i>Suggested:</i> *Henrich et al. 2005
	F 1/30	<b>Discussion 3:</b> Cooperative Hunting and Meat Sharing	Reading Response #3 DUE	<b>*Gomes and Boesch 2009</b> <b>*Gurven &amp; Hill 2009</b> (skim commentary)  <i>Suggested:</i> *Hawkes et al. 2001
<b>5</b> <b>Culture as an adaptation</b>	M 2/2	Cooperation III: game theory; why be social?		*Hawkes 1992  <i>Suggested:</i> Mitani Ch 24 (Silk), Strier Ch 4 pp. 98-109
	W 2/4	<b>EXAM 1</b>		
	F 2/6	<b>Discussion 4:</b> Culture I: Is it just for humans?	Reading Response #4 DUE	<b>*Boesch and Tomasello 1998</b> <b>Mitani Ch 31 (Whiten)</b> <b>Richerson and Boyd 1992</b>  <i>Suggested:</i> *Whiten 2005
<b>6</b> <b>How does culture evolve?</b>	M 2/9	Culture II: Human culture; multilevel selection		Cartwright Ch 16  <i>Suggested:</i> Alvard 2003
	W 2/11	<b>Discussion 5:</b> Cultural evolution and transmission	Reading Response #5 DUE	<b>Mitani Ch 26 (Alvard)</b> <b>*Henrich 2002</b>  <i>Suggested:</i> Shennan & Wilkinson 2001
	F 2/13	Life History I: Primate & Human Overview		Mitani Ch. 10 (van Shaik & Isler) Cartwright Ch 3 pp. 69-79  <i>Suggested:</i> Strier Ch 9

Week	Date	Topic	Event	Reading
<b>7</b> <b>Life History</b>	M 2/16	<b>NO CLASS – President’s Day</b>		
	Tues 2/17	Life History: Longevity I (Embodied Capital)		* <b>Bogin &amp; Smith 1996</b> * <b>Kaplan et al. 2000</b>
	W 2/18	Life History: Longevity II (Grandmothering Hypothesis)		* <b>Hawkes et al. 1998</b>
	F 2/20	<b>Discussion 6:</b> Life History III (Embodied Capital and Grandmothering)	Reading Response #6 DUE	(bolded readings earlier in week)
<b>8</b> <b>Demographic Transition</b>	M 2/23	The Demographic Transition		* <b>Kaplan et al. 2002</b>
	W 2/25	Health, Disease & Aging		*Neel 1999 *Nesse 2000
	F 2/27	<b>Discussion 7:</b> Adaptive Tradeoffs	Reading Response #7 DUE	* <b>Borgerhoff Mulder 1998</b>
<b>9</b> <b>Sexual Selection and Mating</b>	M 3/2	Sexual Selection: Overview; mating systems		Cartwright Ch. 3 pp. 51-69, Ch 11 Mitani Ch. 20 (Marlowe) * <b>Haufe 2008</b>
	W 3/4	Sexual Selection II; mate choice		Mitani Ch 16 (Kappeler) Cartwright Ch 12  <i>Suggested:</i> Strier Ch 5, Ch 7
	F 3/6	<b>Discussion 8:</b> Mating and mate choice	Reading Response #8 DUE	* <b>Buss 1989</b> * <b>Garver-Apgar et al. 2006</b>
<b>10</b>	M 3/9	<b>NO CLASS - SPRING BREAK ☺</b>		
	W 3/11			
	F 3/13			
<b>11</b> <b>Reproduction</b>	M 3/16	Sexual Selection: Male strategies (infanticide)		Mitani Ch. 19 (Palombit)  <i>Suggested:</i> Strier Ch 8
	W 3/18	Parenting: Parent-offspring conflict		Cartwright Ch 10 pp. 211-216
	F 3/20	<b>EXAM 2</b>		
<b>12</b> <b>Costly signaling</b>	M 3/23	<b>Discussion 9:</b> Symbolic capital	Reading Response #9 DUE	* <b>Cronk 2005</b>
	W 3/25	<b>NO CLASS (Dr. Grow attending AAPA conference)</b>		
	F 3/27			
<b>13</b> <b>Parenting</b>	M 3/30	Parenting: Overview; Parental investment strategies		Mitani Ch 20 (Marlowe) *Clutton-Brock 1991
	W 4/1	Parenting: Paternal care; step-parentage		* <b>Winking 2006</b> * <b>Hrdy Ch 10</b>
	F 4/3	<b>Discussion 10:</b> Parenting; Step-parentage	Reading Response #10 DUE	* <b>Anderson, Kaplan &amp; Lancaster 1999</b>
<b>14</b> <b>Marriage</b>	M 4/6	Marriage		* <b>Marlowe 2000</b>
	W 4/8	Divorce		* <b>Winking et al. 2007</b>
	F 4/10	<b>Discussion 11:</b> Marriage II	Reading Response #11 DUE	(readings from earlier in week)
<b>15</b> <b>Conflict</b>	M 4/13	Sexual Conflict; rape		Cartwright Ch 10 pp. 222-225
	W 4/15	Violence & warfare		Cartwright Ch 10 pp. 217-218 *Wrangham & Glowacki 2012
	F 4/17	Cognition		Cartwright Ch 6  <i>Suggested:</i> Strier Ch 10
<b>16</b>	M 4/20	Sexual Orientation		*Blanchard and Bogaert 1996

Week	Date	Topic	Event	Reading
	W 4/22	Religion		
	F 4/24	EXAM 3		