

## **Psychology 432-01: Evolution and Human Nature**

Fall 2019: Tuesdays 3-6PM

Room: North University Building 1509

Professor Alexandra Rosati

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Office location: 4063 East Hall

Office Hours: TBD

### **What is this course about?**

What are the evolutionary origins of human behavior? This seminar will cover a range of topics using biological approaches to human behavior and psychology, including kinship, sexuality, cooperation, violence, warfare, xenophobia, culture, and religion. Using a comparative approach, we will contextualize human behavior by examining studies of non-human primates, especially chimpanzees. We will also examine the breadth of human diversity across societies using ethnographic and experimental data from small-scale human societies (such as hunter-gatherers), as well as people from industrialized societies. Our goal is to use evolution as a framework for understanding this range of human behaviors.

### **What are the objectives of this course?**

This course will focus on cutting-edge (and sometimes contentious) scientific debates concerning the biological basis of human behavior. It will involve immersion in primary scientific literature with the goal of developing critical analysis and writing skills. This is a reading-intensive course where class sessions are primarily discussion-based. My goal is that you will leave this class with three main skills:

1. An understanding of why and how evolution shaped human cognition and behavior
2. The ability to read and critique empirical scientific papers
3. The ability to synthesize scientific evidence and make well-reasoned arguments in writing

### **What are the pre-requisites for this course?**

Prerequisites for this course are familiarity with evolution and/or animal behavior. This could include at least one of the following courses:

- Psych 335 (Introduction to Animal Behavior)
- Psych 330-002 (Human Cognitive Evolution)
- Psych 338/Anthrobio 368 (Social Behavior of Primates),
- Psych 439/Anthrobio 468 (Evolutionary Endocrinology)

You may also contact me for permission if you think you have relevant background which is not listed here.

### **How are grades determined?**

Performance will be assessed through participation in discussion seminars; leadership of two in-class discussions; weekly written responses and posted questions to readings; and a take-home essay-based final exam.

- Written responses to weekly readings (15%)

- Posting a discussion question, and at least one response to another student's question, each week to the class website (5% total)
- Participation in seminar discussions (20%)
- Leading in-class seminar discussions (40% total)
- A take-home essay-based final (20%)

### Where are the readings and lecture slides?

- Readings are organized by class sessions (under Modules on the Canvas website). Most sessions have required background readings plus three discussion-leader readings (typically empirical studies).
- Pdfs of any slides will be posted online in the relevant module after the session.

### How do class sessions work?

For each session, the three-hour block will be broken up into sections with different goals (specific format will depend on topic). I will typically lecture for a brief period on core concepts at the beginning of the session. We then often do some practical activities or watch relevant sections of a movie. Finally, we will discuss the papers for that week.

we will discuss the assigned papers in class. Students are expected to attend the seminar and actively participate by asking questions, stating opinions, and generally participating as a full member of discussions.

- *Scoring participation:* For each session you will be assigned a grade of 0 (not present or did not contribute meaningfully to the discussion); 1 (said some stuff; reached basic level of participation); or 2 (excellent contribution to discussion, raising meaningful ideas in a sustained way). You will need to work to get a 2. I will incorporate outstanding online participation into this score as relevant (see discussion question section below).
- *Missed discussion sections:* You can miss one session without penalty but are still responsible for submitting the online responses on time if you want credit for them.
- *Makeup participation:* If you have a **documented** reason for missing the discussion session (letter from doctor or LSA advisor documenting illness or emergency; letter from another professor, advisor, or coach documenting completely unavoidable conflict), then you will be allowed to make up this part of your participation grade by writing a *three-page single-spaced response paper* synthesizing and critically commenting on the readings discussed in that session. **This response paper will be due no later than 1 week after the discussion session**, except in cases of documented illness or emergency that preclude completion of the work in that timeframe. If you repeatedly request to makeup participation grades, the demands associated with the makeups may increase.

### What are reading responses?

Understanding how to critically read empirical research and synthesize theoretical ideas is a critical part of science. Each week you will submit a response (approximately 500 words) about the weekly readings online through canvas. These comments can focus on a single paper, highlight a common theme or points of disagreement across papers, suggest new questions that

are raised by the study, or propose a new experiment. I will provide 'guiding questions' each week that may help orient your responses. The goal of the responses is to show that you thought critically about the readings.

- *Deadline:* Your reading response must be uploaded to the Canvas website (under that assignment) **by Monday at 10PM, the day before the class session.**
- *Scoring responses:* For each response you will be assigned a grade of 0 (not submitted, not relevant to the papers, or nonsense writing); 1 (said some stuff; reached basic level of comprehension of the papers); or 2 (excellent analysis of the papers that points out critiques, suggests a new question, or synthesizes with the papers from other weeks or your own knowledge from other classes). You will need to work to get a 2.
- *Missed reading responses:* You can miss submitting a response one session without any penalty.
- *Reading responses for missed discussion sessions:* You are allowed to miss up to one discussion session without penalty (see below) but are still responsible for submitting your reading response on time if you want credit for it (e.g. unless it is your freebie missed response described above).
- *Makeups:* No makeups (besides the one freebie missed session).

### **What are discussion questions?**

In order to promote discussion in the in-class session, you should also post at least one question to the class website. The question can be short and to the point (1-3 sentences). It can deal with a conceptual question or a methodological question. You should also post at least one response to other student's comments. *Deadline:* Your question must be posted to the Canvas discussion thread **by Monday at 10PM, the day before the class session**, in order to be integrated by the discussion leaders into their discussion plans.

- *Scoring questions:* For each week you will get a 1 if you submit a question and a 0 if you do not. Keep in mind these will be open to the whole class.
- *Missed questions:* You can miss submitting a question one week without penalty.
- *Questions for missed discussion sessions:* You are allowed to miss up to one discussion session without penalty (see below) but are still responsible for submitting your question on time if you want credit for it (e.g. unless it is your freebie missed response described above).
- *Makeups:* No makeups (besides the one freebie missed session).

### **What do discussion leaders do?**

Each session will be comprised of a set of background papers, plus a set of empirical papers (one assigned to each of the three leaders for that session). Each student will be in charge of being a co-leader of the discussion (e.g., taking the lead on one of those empirical papers assigned for that day) across several during the semester (exact number will depend on course size). All students should read all papers assigned for a given session.

- *Leader team coordination:* Leaders for a given week should meet or communicate with each other by email to coordinate their presentations and discuss open questions about the papers.

- *Office hours:* You must attend office hours with Prof. Rosati the week before you lead the discussion to go over the papers.
- *Posted discussion questions:* Leaders are expected to have looked at the posted class discussion questions in advance to incorporate these questions into their planned discussion.
- *Format:* Each discussion leaders is expected to have prepared 3-4 PowerPoint slides about their papers to (1) make sure everyone is on the same page, and (2) identify clearly formulated questions for discussion/debate. Everyone should have already read the papers so this is not a paper presentation. You might focus especially on important images from the papers. **The three leaders should combine their respective slides into one power point document and bring that (on a memory stick) to class, or email to Prof. Rosati at least 30 min before class starts.**
- *Grading:* Each discussion will be graded out of 20 points. Of this score, 15 points will reflect your own particular presentation and leadership of your own papers for discussion, and 5 points will reflect the overall performance of the team —the coherence, integration, and quality of the discussion points overall. The same grade will be assigned to all team members for those last 5 points, so it behooves you to help out your team members if they are finding the papers to be challenging.

### **How does the final exam work?**

The final will comprise a take-home, open-book exam comprised of essay-based questions. These questions will be “open-ended” in the sense that they are designed to have you stake out a position and formulate a coherent argument to answer them, rather than having a clear right or wrong answer—in this sense, they are like somewhat longer reading responses that synthesize the content of the whole course. You will have the 72 hours following the end of the last class session to complete and submit the essays online. ***The essays should not take this full period to complete but the 72 hours should allow adequate time given any other concurrent obligations.***

### **What is the laptop and device policy for this course?**

- *Short answer:* **No laptops or other devices are allowed during lectures or discussions,** but you may be able to use them for some activities as relevant.
- *Long answer:* You’ve probably heard the stats on how taking notes by hand can improve academic achievement. That’s all great, but I view it as your decision (and/or responsibility) to use or ignore this kind of information. However, one side effect of your decision to use a laptop or phone in class is that it can distract other people, and one of those other people it definitely does distract is me. Most students use computers in appropriate ways in class, but some do not. I have decided that the negative consequences (for all of you) of me being distracted by students using their devices in an unprofessional manner outweighs the value of each member of our course making an autonomous decision about devices. This has led me to switch to an ‘analog’ classroom.
- *What if you need to use a computer?* If you really need to use a computer to learn effectively, send me an email with a paragraph stating your case. (Hint: “I want to use a computer” is not an effective argument). I will then ask you to vigilantly make sure you

only use the computer for class-related notes, not internet, chatting, etc. **Specific accommodation needs for computer use will of course always be met: see below for course accommodation policy.**

- *What about phones?* I think you will be hard-pressed to convince me that you need a phone to learn effectively, but you are welcome to try!

**Does this course have an academic Integrity policy?**

Yes! **Of course it does.** First off, discussion and the exchange of ideas are essential to academic work. Discussion leaders in particular are encouraged to consult with your classmates, share resources, or help each other understand the papers. **However, you should ensure that any written work you submit for evaluation—including reading responses, discussion questions, and exams—is your own, the result of your own research, ideas, and writing.** You must also adhere to standard citation practices and properly cite any books, articles, websites, lectures, etc. that have helped you with your work as relevant.

**Does this course have an accommodation policy?**

Yes! If you think you need an accommodation for a disability, please let me know at your earliest convenience. As soon as you make me aware of your needs, we can work with the Services for Students with Disabilities (SSD) office to help us determine appropriate academic accommodations. SSD (<http://ssd.umich.edu>) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. Any information you provide is private and confidential and will be treated as such.

**Other questions about this course:**

- *Can I take this class if I am also enrolled in another class that meets at the same time or an overlapping time?* No.
- *What happens if I miss a lot of classes for some other reason?* This class is primarily discussion and participation-based. That means you need to show up, discuss, and participate. If you consistently miss the class for some other reason your grade will probably suffer. I am happy to work with students who have health-related (or similar) reasons for missing class, but you will have to do a bunch of makeup work. Note that you get one “freebie” missed session—and use it wisely.

**Week 1 (September 3): What is human nature? and ‘The Evolution Bootcamp’, Part 1**

- The first part of this session will be a lecture-based introduction to the course and our objectives.
- Students will then participate in an ‘Evolution Bootcamp’ including activities and quizzes to make sure everyone is on the same page concerning evolutionary approaches to behavior. These activities will also allow you to make an informed decision about whether this course is really for you, given the expectation that students already have a solid foundation in evolutionary approaches to behavior.
- There are no *reading responses* or *questions* due for this week.

*Readings:*

- Mayr (2001) *What Evolution Is*. Chapter 2: What is the evidence for evolution on earth? Chapter 4: How and why does evolution take place? Chapter 6: Natural Selection
- Ridley (2003) *Evolution* Chapter 4: Natural Selection and variation

*Topics covered*

- *Evolution, natural selection, and sexual selection*
- *Adaptations*
- *Tools for detecting and measuring natural selection*
- *Tinbergen’s 4 questions (proximate/ultimate distinction)*

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**Week 2 (September 10): What is human nature? and ‘The Evolution Bootcamp’, Part 2**

- The first part of this session will be a lecture-based introduction to primates, humans, and methods to reconstruct the evolution of human behavior.
- Students will then participate in the second part of the ‘Evolution Bootcamp.’
- There is a *reading response* and *question* due for this week but *no assigned discussion leaders*.

*Readings*

- Selections from: Wrangham (2019) *The Goodness Paradox: The Strange Relationship Between Virtue and Violence in Human Evolution*
- Marlowe (2010) *The Hadza*. Chapter 1: The Hadza and evolutionary theory; Chapter 2: habitat and history; Chapter 3: Social organization, beliefs, and practices
- Richerson & Boyd (2004) *Not By Genes Alone*. Chapter 1: Culture is essential; Chapter 2: Culture exists; Chapter 3: Culture evolves.

*Topics covered:*

- *Evolutionary approaches to behavior*
- *Hunter-gatherers and small-scale societies*
- *Chimpanzee and bonobos*
- *Culture and cultural evolution*

### **Week 3 (September 17): Mating**

What do people find attractive in potential sexual partners, and why? This session will examine mating preferences in humans and other animals through the lens of sexual selection, as well as cultural shifts in what is desirable.

#### *Background readings:*

- Buss (2003) *The evolution of desire: Strategies of human mating*. Chapter 1: Origins of mating behavior; Chapter 2: What women want; Chapter 3: Men want something else.
- Emery Thompson & Muller (2016). Comparative perspectives on human reproductive behavior. *Current Opinion in Psychology*.
- Bailey & Zuk (2009). Same-sex sexual behavior and evolution. *Trends in Ecology and Evolution*.

#### *Empirical papers:*

- Muller et al (2006). Male chimpanzees prefer mating with old females. *Current Biology*.
- Scott et al (2014). Human preferences for sexually dimorphic faces may be evolutionarily novel. *Proceedings of the National Academy of Sciences*.
- Von Reuden & Jaeggi (2016). Men's status and reproductive success in 33 nonindustrial societies: Effects of subsistence, marriage system, and reproductive strategy. *Proceedings of the National Academy of Sciences*.

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### **Week 4 (September 24): Marriage and children**

Why get married? Who takes care of children? Is human parenthood similar to parenthood in other species? This session will examine the contributions of males, females, and others to offspring care.

#### *Background readings:*

- Shostak (1981) *Nisa: the life and words of a !Kung woman*. Chapter 4: Discovering sex; Chapter 5: Trial marriages; Chapter 6: Marriage; Chapter 7: Wives and co-wives
- Konner (2010). *The evolution of childhood*. Chapter 15: The evolution of the mother-infant bond; Chapter 16: Cooperative breeding in the extended family. Chapter 17: Male parental care.
- Scelza (2013). Choosy but not chaste: Multiple mating in human females. *Evolutionary Anthropology*.

#### *Empirical papers:*

- Buchan et al (2003). True paternal care in a multi-male primate society. *Nature*.
- Gettler et al (2011). Longitudinal evidence that fatherhood decreases testosterone in human males. *PNAS*.

- Walker et al (2010). Evolutionary history of partible paternity in lowland South America. *PNAS*.

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### Week 5 (October 1): Sexual violence

Some theories propose that sexual violence is an evolved strategy. Are some males born to rape? This session will examine sexual violence and parallels in the behavior of other primates.

#### Background readings:

- Smutts (1995) The evolutionary origins of patriarchy. *Human Nature*.
- Emery Thompson (2009) "Human rape: revising evolutionary perspectives." From: *Sexual coercion in primates and humans*.
- Buss & Duntley (2011) The evolution of intimate partner violence. *Aggression and Violent Behavior*.

#### Empirical papers:

- Feldblum et al (2014). Sexually coercive male chimpanzees sire more offspring. *Current Biology*.
- Stieglitz et al (2018) Marital violence and fertility in a relatively egalitarian high-fertility population. *Nature Human Behavior*.
- Henrich et al (2012). The puzzle of monogamous marriage. *Philosophical Transactions of the Royal Society B*.

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### Week 6 (October 8): Kinship

Relatives are such a ubiquitous part of human life that it is easy to miss the question: why live around your kin? This session will examine both the costs and benefits of living and interacting with relatives.

#### Background readings:

- Dawkins (1979) Twelve misunderstandings of kin selection. *Z. Tierpsychologie*.
- Silk (2009) Nepotistic cooperation in non-human primate groups. *Philosophical Transactions of the Royal Society*.
- Henrich & Henrich (2007) *Why humans cooperate*. Chapter 3: Evolutionary Theory and the social psychology of human cooperation. Chapter 5: Family first: Kinship explains most cooperative behavior.

#### Empirical papers:

- Langergraber et al (2007) The limited impact of kinship on cooperation in wild chimpanzees. *Proceedings of the National Academy of Sciences*.

- Krupp et al. (2008) A cue of kinship promotes cooperation for the public good. *Evolution and Human Behavior*.
- Lieberman & Lobel (2012) Kinship on the Kibbutz: co-residence duration predicts altruism, personal sexual aversions and moral attitudes among communally reared peers. *Evolution and Human Behavior*.

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**October 15: No class (Fall Break!)**

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**Week 7 (October 22): Food and society**

Finding food is at the heart of primate groups, as well as human societies. This session will examine how people and other animals find, hunt, share, and even cook their food, with a special focus on how human social and cultural characteristics shape the food quest—as well as how new pathways for finding food shapes human societies.

*Background readings:*

- Kelly (1995) *The foraging spectrum. Chapter 1: Hunter gatherers and anthropology. Chapter 3: Foraging and subsistence.*
- Jaeggi & Gurven (2011) Natural cooperators: food sharing in humans and other primates. *Evolutionary Anthropology*.
- Selections from: Wrangham (2009) *Catching Fire: How cooking made us human*

*Empirical papers:*

- Gilby et al (2017). Predation by female chimpanzees: toward an understanding of sex differences in meat acquisition in the last common ancestor of *Pan* and *Homo*. *Journal of Human Evolution*.
- Dyble et al (2016). Networks of food sharing reveal the functional significance of multilevel sociality in two hunter gatherer groups. *Current Biology*.
- Wiessner (2014). Embers of society: Firelight talk among the Ju/'hoansi Bushmen. *Proceedings of the National Academy of Sciences*.

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**Week 8 (October 29): Altruism**

Some theories propose that human cooperation far exceeds that of other primates. Is human cooperation just a quantitative extension or is it qualitatively different? Do different human populations all cooperate in the same ways?

*Background readings:*

- Axelrod (1984) *The evolution of cooperation*. Chapter 1: The problem of cooperation. Chapter 2: The success of TIT FOR TAT in computer tournaments. Chapter 4: Live-and-

let-live system in trench warfare in WWI. Chapter 5: The evolution of cooperation in biological systems.

- Raihani et al. (2012). Punishment and cooperation in nature. *Trends in Ecology and Evolution*.
- Melis & Warneken (2016) The psychology of cooperation: Insights from children and chimpanzees. *Evolutionary Anthropology*.

*Empirical papers:*

- Smith et al (2016). Camp stability predicts patterns of hunter–gatherer cooperation. *Royal Society Open Science*.
- Mathew et al (2013) The cost of cowardice: punitive sentiments towards free riders in Turkana raids. *Evolution and Human Behavior*.
- Brethel-Haurwitz & Marsh (2014). Geographical differences in subjective well-being predicts extraordinary altruism. *Psychological Science*.

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**Week 9 (Nov 5): Morality**

Do humans have an innate dislike of people from other groups, or is this animosity the product of cultural forces? Do other animals exhibit the same kinds of judgements? Why do we apply different moral rules to different groups of people?

*Background readings:*

- Krebs (2008). Morality: An evolutionary account. *Perspectives on Psychological Science*.
- Haidt & Graham (2007). When morality opposes justice: Conservatives have moral intuitions that liberals may not recognize. *Social Justice Research*.
- Haslam & Loughnan (2014). Dehumanization and infrahumanization. *Annual Review of Psychology*.

*Empirical papers:*

- Tan et al (2017). Bonobos respond prosocially toward members of other groups. *Scientific Reports*.
- Rai et al (2018). Dehumanization increases instrumental violence, but not moral violence. *Proceedings of the National Academy of Sciences*.
- Barrett et al (2016). Small-scale societies exhibit fundamental variation in the role of intentions in moral judgment. *Proceedings of the National Academy of Sciences*.

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**Week 10 (November 12): Aggression**

Is human nature rooted in aggression and violence? *How do we compare to nonhumans in our degree of aggression? This session will focus on within-group patterns of violence.*

*Background readings:*

- Wrangham (2017). Two types of aggression in human evolution. *Proceedings of the National Academy of Sciences*

- Cohen et al (1996). Insult, aggression, and the Southern Culture of Honor: An “experimental ethnography.” *Interpersonal Relations and Group Processes*.
- Cross & Campbell (2011) Women’s aggression. *Aggression and Violent Behavior*.

*Empirical papers:*

- Wilson et al (2014). Lethal aggression in *Pan* is better explained by adaptive strategies than human impacts. *Nature*.
- Carre (2017) Exogenous testosterone rapidly increases aggressive behavior in dominant and impulsive men. *Biological Psychiatry*.
- Woelfer & Hewstone (2015). Intra- versus intersex aggression: Testing theories of sex differences using aggression networks. *Psychological Science*.

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**Week 11 (November 19): Warfare**

This session will continue to examine if human nature rooted in aggression and violence, but focus on between-group patterns of violence—warfare. Why do groups of people try to kill each other? Do other species do the same?

*Background readings:*

- Chagnon (1968) *Yanmamö*. Prologue. Chapter 6: Yanmamö warfare.
- Wrangham & Glowacki (2012) Intergroup aggression in chimpanzees and war in nomadic hunter-gatherers. *Human Nature*.
- Zefferman & Mathew (2015). An evolutionary theory of large-scale human warfare: Group-structured cultural selection. *Evolutionary Anthropology*.

*Empirical papers:*

- Langergraber et al (2017). Group augmentation, collective action, and territorial boundary patrols by male chimpanzees. *Proceedings of the National Academy of Sciences*.
- Bauer et al (2013). War’s enduring effects on the development of egalitarian motivations and in-group biases. *Psychological Science*.
- Glowacki & Wrangham (2015). Warfare and reproductive success in a tribal population. *PNAS*.

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**November 26: No class (Almost Thanksgiving!)**

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**Week 12 (December 3): Religion**

What are the evolutionary and cultural foundations of religious beliefs and practices? How does the diversity in religious behavior emerge, and are there any commonalities across cultures?

*Background readings*

- Bloom (2012). Religion, morality, evolution. *Annual Review of Psychology*.
- Boyer (2003) Religious thought and behaviour as by-products of brain function. *Trends in Cognitive Sciences*
- Atran & Henrich (2010). The evolution of religion: How cognitive by-products, adaptive learning heuristics, ritual displays, and group competition generate deep commitments to prosocial religions. *Biological Theory*.

*Empirical papers:*

- Kuehl et al (2016). Chimpanzee accumulative stone throwing. *Scientific Reports*.
- Botero et al (2014) The ecology of religious beliefs. *PNAS*.
- Purzycki et al (2016). Moralistic gods, supernatural punishment and the expansion of human sociality. *Nature*.

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**Week 13 (December 10): Power and inequality**

Are humans naturally egalitarian? What is the relationship between human power and dominance in animals? How do large-scale political institutions like states arise? What are the origins of societal inequality in humans?

*Background readings*

- Boehm (1999) *Hierarchy in the Forest: The evolution of Egalitarian Behavior*. Chapter 1: The question of egalitarian society; Chapter 2: Hierarchy and equality; Chapter 3: Putting down aggressors; Chapter 4: Equality and its causes.
- King et al (2009) The origins and evolution of leadership. *Current Biology*.
- Haushofer & Fehr (2014). On the psychology of poverty. *Science*.

*Empirical papers:*

- von Reuden et al (2014) Leadership in an egalitarian society. *Human Nature*.
- Borgerhoff Mulder et al (2009) Intergenerational wealth transmission and the dynamics of inequality in small-scale societies. *Science*
- Cote et al (2015). High economic inequality leads higher-income individuals to be less generous. *Proceedings of the National Academy of Sciences*.