

HUMANITIES SEMINARS PROGRAM

Fall 2017

EVOLUTIONARY PSYCHOLOGY

Biological insights on how our mind works, but more importantly why it works the way it does

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Biology has well-supported insights into how animals make decisions and why they behave the way they do, in contexts from foraging to cooperation. This knowledge is grounded in theory as well as empirical evidence. Generally these insights also apply to humans: humans evolved, and thus their brain as well as their preferences, capabilities, and learning abilities are all the result of natural selection, as they are for any other animal. In this course, we will cover how biologists arrived at their conclusions about animals and discuss how they apply to humans. We will also talk about psychological research and controversies in this area, and what, if anything, differentiates humans from other animals (intelligence, cultural evolution, free will?).

Anna Dornhaus is Professor of Ecology and Evolutionary Biology and has been on the UA faculty since 2005. She completed her PhD at the University of Würzburg in Germany. Her research centers on understanding complex collective behaviors in social insects like ants and bees, such as how they communicate, divide up tasks, and make decisions as a group. You can read (and listen to) public media reports about her work at <http://socialinsectlab.arizona.edu/content/our-science-public-media>

General remarks about the course

My aim for the course is both to entertain and fascinate you with how complex and beautiful our world is, and how science can reveal this complexity and beauty. I hope that as a result of this course you will also understand that the scientific method is capable of revealing truths about the world and ourselves even when these are uncomfortable or counterintuitive.

Generally the readings for every class will go in more depth and allow you to engage with each topic in more detail; readings also allow us to spend more time on questions and discussion during class. I will try to give a brief overview of each upcoming reading at the end of each class to help you get started (if you can complete the first reading before the first class that would be ideal to get you into the mood, but it is not required). Some scientific readings can be dense, so with any reading you find difficult to understand, I invite you to ask questions right at the beginning of the class about it; I will attempt to answer all questions either then or during that lecture. I give optional 'further readings' below for selected classes; feel free to ask for more detail about those.

Do not hesitate to ask me questions before, during, or after class. In particular, I welcome questions during class about any topic I am presenting or about links between the readings and the lecture. I will attempt to balance interactive discussion with you with making sure everyone can contribute and with covering the main topics that were planned for the day.

Finally, it is useful if you can bring a pen and paper for notes during class; it is of course up to you whether to take notes in general, but we will sometimes have discussions where it will be useful if you can write notes about what you concluded before sharing it with the rest of the class.

Plan for the course

Class date	Topic	Details	Reading for class	Further (optional) reading
Oct 5	Introduction; Types of questions	What is behavioral ecology; the difference between how and why; what is evolution	Chapter 1 of Krebs & Davies, 'Introduction to Behavioral Ecology', ONLY pages 4-10 (i.e. beginning until 'Genes and Behavior')	Futuyma, 'Evolution and creationism'
Oct 12	How does science answer the 'why' questions	The Scientific Method, modeling, experiments, and comparative studies; the timeline does not matter, nor does finding the 'origin point'	Economist 'Live fast, love hard, die young' Chapter 2 of Krebs & Davies 'Introduction to Behavioral Ecology' Chamberlin 'The method of multiple working hypotheses'	(Book 'The triumph of sociobiology' by J. Alcock) Cuthill 'The study of function in behavioural ecology'
Oct 19	Did, and do, human behaviors evolve?	Inheritance, consciousness, and free will; a bit on statistics and what it means to 'explain variation'; human evolutionary history	Pinker 'Why nature and nurture won't go away' Gonick & Smith: Statistics - cartoon on hypothesis testing	(Book 'The blank slate' by S. Pinker) Visscher et al. 'Heritability in the genomics era — concepts and misconceptions' Roskies 'Neuroscientific challenges to free will and responsibility'
Oct 26	Controversies	What some people worry about; science does not care about social consequences and the naturalistic fallacy; testability of evolutionary psychology hypotheses	Bliege-Bird et al., on human hunting Alcock, 'Evolution of human behavior' chapter 14 from 'Animal Behavior'	Wilson 'Man: From Sociobiology to Sociology' chapter 27 from 'Sociobiology: The new synthesis'
Nov 2	Evolution of cooperation and lack thereof	What is interesting about the evolution of cooperation; humans are particularly altruistic, why? Course feedback: tell me how it's going	Economist 'Patience, fairness, and the human condition' Dugatkin: 'Cheating Monkeys and Citizen Bees' (Introduction)	(Book Ridley: Origins of Virtue) (Book Dugatkin: 'Cheating Monkeys and Citizen Bees')

Nov 9	Natural vs. sexual selection and evolution of human intelligence	Did human brains evolve to increase mating success? Other sexually selected traits in humans.	Miller, excerpt from 'The Mating Mind'	Diamond, 'The Third Chimpanzee' – chapter on Human sexual traits (Book 'The Mating Mind' by G Miller)
Nov 16	Having children and parenting	Do people actually try to maximize reproductive success? Evolutionary tradeoffs	Borgerhoff-Mulder et al., human reproduction	Alcock, 'The evolution of parental care' chapter 12 from 'Animal Behavior'
Nov 30	Cognitive shortcuts and economic decisions	Evolved problem solving, and how it leads to 'irrationality'; how this can be manipulated	Mendl & Paul 'Bee happy' Fawcett et al. 'The evolution of decision rules in complex environments'	
Dec 7		Ask me the final questions you want answered today		
Dec 14	Concluding thoughts	Your questions answered; further references	Ferguson 'Genetic Contributions to Antisocial Personality and Behavior: A Meta-Analytic Review From an Evolutionary Perspective'	