

ANG 5012 / ANT 4930

Spring 2024

## FANTASTIC ANTHROPOLOGY AND FRINGE SCIENCE

Time: T periods 9 – 11 (4:05 PM – 7:05 PM)

Place: LEI 0242

Instructor: David Daegling, Turlington B376

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Office Hours: W 1:00 – 3:00 PM; R 4:00 – 5:00 PM.

**COURSE OBJECTIVES:** This course examines the articulation and perpetuation of so-called fringe scientific theories concerning the human condition. We will examine these unconventional claims with respect to 1) underlying belief systems, 2) empirical and logical foundations, 3) persistence in the face of refutation, 4) popular treatment by mass media and 5) institutional reaction. The course is divided into five parts. Part I explores forms of inquiry and considers the demarcation of science from pseudoscience. Part II concerns unconventional theories of human evolution. Part III investigates unorthodox ideas of human biology. Part IV examines claims of extraterrestrial and supernatural contact, and whether the universe is best considered a simulation within a larger reality. Part V further scrutinizes institutional reaction to fringe science, popular coverage of science, and the culture of science in the contemporary United States.

**COURSE REQUIREMENTS:** Attendance is mandatory. Unexcused absences (i.e., other than medical or family emergency) result in a half grade reduction of your final grade. Participation in group and class discussions is required (50% of your final grade). In addition, written work is required for each of the five parts of the course (50% of your grade). These will take the form of essays and short papers to be completed concurrently with our discussions of these topics. Late papers are subject to a full letter grade reduction. There are no examinations. Letter grades will be assigned for all work and will use the UF grade point scheme. For information on letter grades and corresponding grade points the undergraduate catalog can be consulted:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

This course is administered through Canvas (elearning.ufl.edu). Readings are available on the Canvas course page. Links to certain webpages are provided in e-learning and represent a miniscule sample of the material that can be accessed in cyberspace. Required books (Petto & Godfrey, *Scientists Confront Creationism*, Pflock and Brookesmith, *Encounters at Indian Head*) are available at the UF Bookstore.

## **OTHER POLICIES AND INFORMATION:**

Please mute smart phones and other electronic devices during class.

Discussion begins when class commences. To contribute productively to discussion, you should be present to hear all contributions. Please be on time. Discussion can be contentious in this course. You should feel free to express your opinions but you will be asked to defend and justify your statements. Invective is not tolerated.

Plagiarism in any form is subject to university policy as outlined by the Dean of Students (<http://www.dso.ufl.edu/judicial/academic.htm>). UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

All written work in this course requires appropriate citations and an accompanying list of literature cited. Submitted work that does not include citations and an accompanying bibliography receives a failing grade.

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu> Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>

Be aware of and utilize the following campus resources:

### Health and Wellness

*U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center:* Visit the [Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

*Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the [Student Health Care Center website](#).

*University Police Department:* Visit [UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

*UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the [UF Health Emergency Room and Trauma Center website](#).

*GatorWell Health Promotion Services:* For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-273-4450.

### Academic Resources

*E-learning technical support:* Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

*Career Connections Center:* Reitz Union Suite 1300, 352-392-1601. [Career assistance and counseling services](#).

*Library Support:* Various ways to [receive assistance](#) with respect to using the libraries or finding resources.

*Teaching Center:* Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. [General study skills and tutoring](#).

*Writing Studio:* 2215 Turlington Hall, 352-846-1138. [Help brainstorming, formatting, and writing papers](#).

*Student Complaints On-Campus:* Visit the [Student Honor Code and Student Conduct Code](#) webpage for more information.

## COURSE SCHEDULE:

### Part I: Forms of Inquiry

- 1/9 Fringe science quiz
- 1/16 Demarcation and skepticism

### Part II: Human Evolution

- 1/23 African genesis
- 1/30 Primordial religion
- 2/6 Intelligent design
- 2/13 Bigfoot
- 2/20 The aquatic ape
- 2/27 UFOs I. Fortean threads

### Part III: Human Biology and Culture

- 3/5 Pristine humanity
- 3/19 Evolutionary psychology
- 3/26 Alternative medicine

### Part IV: Worlds Beyond

- 4/2 UFOs II. Extraterrestrial contacts
- 4/9 PSI
- 4/16 Living in Minecraft

### Part V: Science and Culture

- 4/23 Institutional science: Behavior and communication

## Course Readings and Assignments

### 1/16 Demarcation and skepticism

Resnik DB (2000) A pragmatic approach to the demarcation problem. *Studies in History and Philosophy of Science Part A*, **31**(2): 249-267.

Kurtz P (1988) Skepticism about the paranormal: legitimate and illegitimate. *Experientia* **48**: 282-287.

Pigliucci M (2013) The demarcation problem. A (belated) response to Laudan. Pigliucci, M. & Boudry, M.(Eds.), *Philosophy of Pseudoscience: Reconsidering the Demarcation Problem*, pp.9-28.

Thagard P (1980) Resemblance, correlation and pseudoscience. In MP Hanen, MJ Osler and RG Weyant (eds) *Science, Pseudoscience and Society*. Waterloo, Ontario, Wilfrid Laurier University Press. pp.17-27.

Gardner M (1957) *Fads and Fallacies in the name of Science*. NY, Dover. Read Chapter 4, "The Fortean's."

Bregman NJ, McAllister HA (1982) Eyewitness Testimony: The Role of Commitment in Increasing Reliability. *Social Psychology Quarterly* **45** (3): 181-184.

**ASSIGNMENT:** Critically evaluate Thagard's criterion for distinguishing science from pseudoscience. Advocate for **one** of three positions: 1) Thagard's criterion is adequate. If you take this position, you must provide two examples (not found in Thagard's paper) of pseudoscientific endeavors and show how they meet the criterion. 2) Thagard's criterion is inadequate. If you take this position, specify a valid alternative criterion. 3) Demarcation of "true" versus "pseudo" science is not possible. Justify this position through argument or example. 750 words or less, exclusive of references.

### 1/23 African Genesis

Dart RA (1959) *Adventures with the Missing Link*. New York, Viking. Read Chapter 1, "A mystery in limestone," Chapter 9, "The antiquity of murder," Chapter 10, "The hyena myth," Chapter 11, "The bones tell their story."

Ardrey R (1961) *African Genesis*. New York, Delta. Read Chapter 1, "The new enlightenment," Chapter 6, "The romantic fallacy," Chapter 11, "Cain's Children."

## 1/30 Primordial Religion

Gimbutas M (2001) Old Europe in the Fifth Millennium BC. In KM Endicott and R Welsch (eds) *Taking Sides: Clashing Views on Controversial Issues in Anthropology*. Guilford, CT: McGraw-Hill/Dushkin. pp. 138-145.

Meskell L (2001) Goddesses, Gimbutas and “New Age” Archaeology. In KM Endicott and R Welsch (eds) *Taking Sides: Clashing Views on Controversial Issues in Anthropology*. Guilford, CT: McGraw-Hill/Dushkin. pp 146-156.

Allen C (2001) The Scholars and the goddess. *Atlantic Monthly* (digital edition, 1/01).

Sheaffer R (1999) The goddess has no clothes. *Skeptical Inquirer* **23**(3):51-53.

Angier N (2000) Goddess theory. *New York Times Book Review* (9/17).

Talalay LE (1994) A feminist boomerang: The great goddess of Greek prehistory. *Gender & History* **6**(2): 165-183.

## 2/6 Intelligent Design

Petto A, Godfrey LR (2008) *Scientists Confront Creationism: Intelligent Design and Beyond*. New York, WW Norton.

Scott EC (1999) The Creation/Evolution Continuum. *NCSE Reports* **19**(4):16-23.  
(<http://ncse.com/creationism/general/creationevolution-continuum>)

Gish DT (1996) Creation, evolution and the historical evidence. In M Ruse (ed), *But is it Science?* Amherst, NY: Prometheus Books, pp 266-282.

Dembski WA (2004) The logical underpinnings of intelligent design. In WA Dembski and M Ruse (eds.) *Debating Design: from Darwin to DNA*, Cambridge University Press. pp 311-330.

**ASSIGNMENT:** Contrast the approaches of the authors of any two chapters in Petto & Godfrey versus Gish or Dembski in terms of the rhetorical devices used to bolster their respective positions. Demonstrate how the three papers do or do not adhere to their implicit or explicit definition of sound scientific practice (e.g., are the arguments internally consistent)? 1000 - 1500 words, exclusive of references.

## 2/13 Bigfoot

Krantz GS (1984) Research on unknown hominoids in North America. In Markotic V, Krantz G *The Sasquatch and Other Unknown Hominoids*. Calgary: Western. pp 128-147.

Bayanov D, Bourtsev I, Dahinden R (1984) Analysis of the Patterson-Gimlin film, why we find it authentic. In Markotic V, Krantz G (eds) *The Sasquatch and Other Unknown Hominoids*. Calgary: Western Publishers. pp 219-234.

Daegling DJ and Schmitt DO (1998) Bigfoot's screen test. *Skeptical Inquirer* **23**: 20-25.

Fahrenbach WH (1998) Sasquatch: Size, scaling and statistics. *Cryptozoology* **13**:47-75.

Meldrum DJ (2007) Ichnotaxonomy of giant hominoid tracks in North America. *New Mexico Museum of Natural History and Science Bulletin* **42**:225-231.

Dennett MR (2008) Science and footprints. *Skeptical Inquirer* **32**:264-272.

Hart HV (2016) DNA as evidence for the existence of relict hominoids. *Relict Hominoid Inquiry* **5**: 8-31

## 2/20 The Aquatic Ape

Cunnane SC (1980) Aquatic ape theory reconsidered. *Medical Hypotheses* **6**(1): 49-58.

McGraw M (1939) Swimming behaviour of the human infant. *Journal of Pediatrics* **15**: 485-490.

Verhaegen M, Peuch P-F, Munro S (2001) Aquarboreal ancestors? *Trends Ecol Evol* **17**: 212-217.

Verhaegen, M, Munro S. (2011) Pachyosteosclerosis suggests archaic *Homo* frequently collected sessile littoral foods. *HOMO-J Comp Human Biol*, **62**:237-247.

Rhys-Evans PH (1992) The paranasal sinuses and other enigmas: An aquatic evolutionary theory. *Journal of Laryngology & Otology* **106**(3):214-225.

Langdon JH (1997) Umbrella hypotheses and human evolution: A critique of the Aquatic Ape hypothesis. *Journal of Human Evolution* **33**: 479-494.

**ASSIGNMENT:** Why has AAT been largely ignored by the anthropological community? Possible reasons include: 1) quality of scholarship, 2) internal consistency, 3) paleobiological support, 4) compatibility with evolutionary theory. 1000 - 1500 words, exclusive of references.

## **2/27 UFOs 1. Fortean Threads**

Hunter J (2021) Deep Weird: High Strangeness, Boggle Thresholds and Damned Data in Academic Research on Extraordinary Experience. *Journal for the Study of Religious Experience*, 7:5-18.

## **3/5 Pristine Humanity**

Headlund TN (1992) Introduction. In: TN Headlund (ed) *The Tasaday Controversy: Assessing the Evidence*. Washington, DC, American Anthropological Association. pp 9-17.

Berreman GD (1991) The Incredible “Tasaday”: Deconstructing the myth of a “stone-age” people. *Cultural Survival Quarterly* 15(1):3-44.

Molony CH (1992). The Tasaday language: Evidence for authenticity? In:TN Headlund (ed) *The Tasaday Controversy: Assessing the Evidence*. Washington, DC, American Anthropological Association. pp 107-116.

Dumont JP (1988) The Tasaday, which and whose? Toward the political economy of an ethnographic sign. *Cultural Anthropology*, 3(3): 261-275.

## **3/19 Evolutionary Psychology**

Buss, D. M. (1995) Evolutionary psychology: A new paradigm for psychological science. *Psychological Inquiry*, 6(1): 1-30.

Lloyd, E. A. (1999). Evolutionary psychology: The burdens of proof. *Biology and Philosophy*, 14(2): 211-233.

De Waal, F. B. (2002). Evolutionary psychology: The wheat and the chaff. *Current Directions in Psychological Science*, 11(6): 187-191.

Bolhuis, J. J., Brown, G. R., Richardson, R. C., & Laland, K. N. (2011). Darwin in mind: New opportunities for evolutionary psychology. *PLoS Biol*, 9(7), e1001109.



### 3/26 Alternative Medicine

Castro M (1999) Homeopathy: A theoretical framework and clinical application. *J. Nurse-Midwifery* **44**:280-290.

Jacob J, Jimenez LM, Malthouse S, Chapman E, Crothers D, Masuk M, Jonas WB (2005) Homeopathic treatment of acute childhood diarrhea: results from a clinical trial in Nepal. *Journal of Alternative and Complementary Medicine* **6**: 131-139.

Sampson W, London W (1995) Analysis of homeopathic treatment of childhood diarrhea. *Pediatrics* **96**: 961-964.

Upledger JE (1995) Craniosacral Therapy. *Physical Therapy* **75**: 328-330.

Hartman SE, Norton JM (2002) Interexaminer reliability and cranial osteopathy. *Scientific Review of Alternative Medicine* **6**: 23-34.

Balon, J, Aker PD, Crowther ER, Danielson C, Cox PG, et al. (1998) A Comparison of Active and Simulated Chiropractic Manipulation as Adjunctive Treatment for Childhood Asthma. *New England Journal of Medicine* **339**: 1013-1020.

Wakefield A J, Murch SH, Anthony A, Linnell J, Casson DM, Malik M, Berelowitz M et al. (1998) Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *The Lancet* **351**: 637-41.

Godlee F, Smith J, Marcovitch H. (2011) Wakefield's article linking MMR vaccine and autism was fraudulent. *BMJ*, **342**:.c7452.

**ASSIGNMENT:** Using conventional (“allopathic”) medical practice as a reference point, is it possible to define what alternative medicine is other than “unconventional”? Why is there consistent public demand for alternative therapies? What constitutes a valid scientific rebuttal of an alternative therapy, and should public funds be expended to support studies that challenge alternative therapies? 1500 - 2000 words, exclusive of references.

### 4/2 UFOs 2. Extraterrestrial Contacts

Pflock K, Brookesmith P (2007) *Encounters at Indian Head*. San Antonio, TX, Anomalist Books.

#### 4/9 Crop Circles and PSI

Jahn RG, Dunne BJ, Nelson RD, Dobyys YH, Bradish GJ (1997) Correlations of random binary sequences with pre-stated operator intention: A review of a 12-year program. *Journal of Scientific Exploration* **11**:345-367.

Sheldrake R, Smart P (2001) A Dog That Seems to Know When His Owner is Returning: Preliminary Investigations. *Journal of the Society for Psychical Research* **62**: 220-232.

Utts, J (2001) An assessment of the evidence for psychic functioning. *Journal of Scientific Exploration* **10**: 3-30.

Hyman R (1986) Parapsychological research: A tutorial review and critical appraisal. *Proceedings of the IEEE* **74**:823-849.

Levengood WC, Talbott NP (1999) Dispersion of energies in worldwide crop formations *Physiologia Plantarum* **105** (4): 615–624.

Grassi F, Cocheo C, Russo P (2005) Balls of light: the questionable science of crop circles. *Journal of Scientific Exploration* **19**:159-170.

Ghidina MJ (2019) Finding God in Grain: Crop Circles, Rationality, and the Construction of Spiritual Experience. *Symbolic Interaction* **42**: 278-300.

**ASSIGNMENT:** Is it possible to design controlled experiments for evaluation of crop circles? You are testing the hypothesis that humans cannot produce them. 1000 words or less, exclusive of references.

#### 4/16 Living in Minecraft

Bostrom N (2003) Are we living in a computer simulation? *Philosophical Quarterly* **53**:243-255.

Greene P (2020) The termination risks of simulation science. *Erkenntnis*, **85**(2), 489-509.

Bibeau-Delisle A, Brassard FRS. (2021) Probability and consequences of living inside a computer simulation. *Proceedings of the Royal Society A* **477**:20200658.

#### 4/23 Science Communication and Institutional Behavior

Peters HP (2013) Gap between science and media revisited: Scientists as public communicators. *Proc Nat Acad Sci USA* **110**(Suppl 3): 14102-14109.

Mann CC (2001) Anthropological warfare. *Science* **291**:416-421.

Osler MJ (1980) Apocryphal knowledge: The misuse of science. In MP Hanen, MJ Osler and RG Weyant (eds) *Science, Pseudoscience and Society*. Waterloo, Ontario, Wilfrid Laurier University Press. pp. 273-290.

Asimov I (1981) Asimov's corollary. In Frazier K (ed) *Paranormal Borderlands of Science*. Buffalo, NY, Prometheus, pp. 223-232.

Caulfield T (2004) Biotechnology and the popular press: hype and the selling of science. *Trends in biotechnology*. 22:337-339.

Hansson SO (2017). Science denial as a form of pseudoscience. *Studies in History and Philosophy of Science Part A*. 63:39-47.

**ASSIGNMENT:** Answer **one** of the following:

- 1) Scientific practice is supposed to be objective, but social scientists and philosophers argue that it is inherently subjective. What are some of the social and cultural factors that underlie bias in scientific investigations and explanations? How might scientists insulate themselves against bias in designing their research and communicating their findings?
- 2) What obligation does the academic scientific community have to investigate "paranormal" or unconventional claims?

1250 -1750 words, exclusive of references.