

ANG 5012

Spring 2021

FANTASTIC ANTHROPOLOGY AND FRINGE SCIENCE

Time: W periods 5 - 7 (11:45 AM - 2:45 PM)

Place: TUR 1208H

Instructor: David Daegling, Turlington B376

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Office Hours: W 9:30 – 10:30 AM; R 2:00 – 4:00 PM.

COURSE OBJECTIVES: This course examines the articulation and perpetuation of so-called paranormal and 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 in the world today. 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 cell phones 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 requires appropriate citations and an accompanying list of literature cited. Submitted work that fails to include this receives a grade of E (0 points).

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.

Phone numbers and contact sites for university counseling services and mental health services: <http://www.counseling.ufl.edu/cwc/Default.aspx> 392-1575.

University Police Department 392-1111 or 9-1-1 for emergencies.

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>

We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions. You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution. This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations. Sanitizing supplies

are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class. Follow the instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.

If you are experiencing [COVID-19 symptoms](#), please use the [UF Health screening system](#) and follow the instructions on whether you are able to attend class. Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. Find more information in the university attendance policies.

This course relies heavily on real-time (synchronous) discussion during scheduled class meeting times. The Zoom meetings, which will be open to both online and in-person registrants, will ***not*** be recorded unless the instructor indicates otherwise prior to the beginning of class. In the event that meetings are recorded, please note the following: Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who unmute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

COURSE SCHEDULE:

Part I: Forms of Inquiry

1/13 Fringe science quiz

1/20 Demarcation and skepticism

Part II: Human Evolution

1/27 African genesis

2/3 Primordial religion

2/10 Creationism

2/17 Bigfoot

2/24 The aquatic ape

Part III: Human Biology

3/3 Pristine humanity

3/10 Evolutionary psychology

3/17 Alternative medicine

3/24 RECHARGE DAY: No Class

Part IV: Worlds Beyond

3/31 Extraterrestrial contacts

4/7 Crop circles and PSI

Part V: Science and Culture

4/14 Institutional reaction to fringe science

4/21 Popular coverage and politicization of science

Course Readings and Assignments

1/20 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* **484**: 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."

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

ASSIGNMENT: Articulate a principle by which to distinguish science from pseudoscience **or** should you think that demarcation is not defensible, propose a useful alternative binary scheme. In either case, justify through argument or example. 750 words or less, exclusive of references.

1/27 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."

2/3 Primordial Religion

Gimbutas M (2001) Old Europe in the Fifth Millenium 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.

Meskel 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.

2/10 Creationism

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.

ASSIGNMENT: Contrast the approaches of evolutionary biologists versus creationists in terms of the rhetorical devices used to bolster their respective positions. Do the two camps have different definitions of science? 1000 - 1500 words, exclusive of references.

2/17 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

2/24 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.

3/3 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.

3/10 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.

3/17 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.

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

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.

ASSIGNMENT: Should health care practice be based on a conventional (“allopathic”) scientific foundation or be tailored to public demand? Can the two coincide? 1000 - 1500 words, exclusive of references.

3/31 Extraterrestrial Contacts

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

4/7 Crop Circles and PSI

Jahn RG, Dunne BJ, Nelson RD, Dobyns 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.

ASSIGNMENT: Is it possible to design a controlled protocol for evaluation of crop circles? You are testing the hypothesis that humans cannot produce them. 750 words or less, exclusive of references.

4/14 Institutional Science and Society

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.

Stocklmayer SM, Rennie LJ, Gilbert JK (2010) The roles of the formal and informal sectors in the provision of effective science education. *Studies in Science Education*, **46**(1): 1-44.

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

4/21 Popular Coverage and Politicization of Science

Caulfield T (2004) Biotechnology and the popular press: hype and the selling of science. *Trends in biotechnology*.22(7):337-9.

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

Lee, N. M., & VanDyke, M. S. (2015). Set it and forget it: The one-way use of social media by government agencies communicating science. *Science Communication*, **37**(4), 533-541.

Nisbet, M. C., & Mooney, C. (2009). Framing science. *Science*, **316**: 56.

ASSIGNMENT: Answer one of the following: 1) can scientific practice operate independently of political philosophy? 2) What obligation does the academic scientific community have to investigate “paranormal” or unconventional claims? 1250 -1750 words, exclusive of references.

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