Darwin and the
The Politics of Evolution
Spring 2012

Gov. 335M, unique #38650
CTI 370, unique #34010
Meeting times: TuTh, 11 to 12:15
Meeting room: WCH 1.120

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Purpose of the Course

Charles Darwin's *On the Origin of Species by Means of Natural Selection*, generally shortened to *The Origin of Species*, is one of the two or three most influential science books ever published. But unlike the case with other science books, *The Origin*, published in 1859, is also of profound political importance. Part of this political importance—the implications of Darwin's theory for religious explanations of the diversity of life—is well understood by all socially aware citizens. But there is much less awareness of the political implications of controversies within the science of evolutionary biology founded by Darwin.

In this class I will explicate and explore both the "outside" and "inside" political implications of the science launched by the *Origin*, and ask the students to evaluate them.

Prerequisites

Upper-division standing.

Assigned Reading

1) Charles Darwin, *The Origin of Species by Means of Natural Selection*, first edition, (Barnes and Noble Classics, 2004) [first published 1859]
2) Jerry Coyne, *Why Evolution is True* (Viking, 2009)
3) Phillip Johnson, *Darwin on Trial,* second edition, (InterVarsity Press, 1993)
4) David Prindle, *Stephen Jay Gould and the Politics of Evolution* (Prometheus Books, 2009)
5) A package of readings, available as Web content from Great River Technologies: This Website contains a great deal more than just the readings. It holds a survey that you are required to take as part of this course. It has a syllabus for the class, and,

additionally, a separate calendar showing the dates of the exams, etc. It will provide you with alerts and announcements.

There are two ways to access the material in the Website:

Method #1: An access card is available for purchase from the Co-op Bookstore.

Method #2: You can purchase the material directly from Great River Technologies—

a. Go to www.grtep.com
b. Click on the "Purchase Access Codes" link in the "Register" box
c. Choose "University of Texas at Austin/Darwin & the Politics of Evolution"
d. Add the publication to the cart by clicking the + sign
e. Click "proceed to checkout"
f. Enter credit card information and register the publication

IF YOU HAVE TROUBLE ACCESSING THE WEBSITE MATERIAL, GET IN TOUCH WITH THEIR WEB SUPPORT PEOPLE:
Email: websupport@greatrivertech.net
Phone: (800) 344-9051

Class Meeting Schedule

I. The *Origin of Species*: context, meaning, politics

Reading:
1. Excerpts from Ch. One of the Book of *Genesis,* in reading package
2. Extracts from William Paley's *Natural Theology*, reading package
3. Stephen Jay Gould, "The Freezing of Noah," reading package
4. Charles Darwin, *On the Origin of Species by Natural Selection*, first edition, chapters 1 thru 6, 11, 13 (pp. 343-361 only), 14
5. Prindle, *Stephen Jay Gould and the Politics of Evolution*, Chapter 2

Date		Topic
January	17	Introduction to the politics of evolution
	19	Reasoning, argument, propaganda
	24	Darwin's historical context
	26	Movie: "Creation" (2009)
	31	"Creation," continued
February	2	Structure of the theory
	7	Documentary: "Life, Darwin, and Everything"
	9	Reception of the *Origin* during the nineteenth century
	14	Test Review
	16	FIRST TEST/FIRST ESSAY DUE

II. Modern controversies within evolutionary biology

Reading:
1. Gould, "The Episodic Nature of Evolutionary Change" in reading package
2. Richard Dawkins, *The Blind Watchmaker*, Chapter 9, in reading package
3. David Prindle, *Stephen Jay Gould and the Politics of Evolution* Chapter 3, pp. 81-103

   [The above three readings address the topic of the pace of evolution].
4. David Barash, *The Whisperings Within*, Chapter 2 (reading package)
5. Albert Somit and Steven Peterson, *Darwinism, Dominance, and Democracy*, Chapter 5 (reading package)
6. Peter Corning, "The Sociobiology of Democracy: Is Authoritarianism in Our Genes?" (this selection is a book review of *Darwinism, Dominance, and Democracy*)
7. Gould, "Our Natural Place," *Hen's Teeth and Horses' Toes*, p. 241 (reading package)
8. Steven Pinker, *The Blank Slate*, "Preface" and Chapter 7, reading package
9. Prindle, *Stephen Jay Gould*, Chapter 4

   [Readings four through nine address the topic of sociobiology].
10. Gould, *Wonderful Life,* pp. 23-52, 189-193, in reading package
11. Simon Conway Morris, *Life's Solution,* xi-xvi, 283-310, in reading package
12. Prindle, *Stephen Jay Gould*, Chapter 3, pp. 103-109

    [Readings ten through twelve address the topic of the progressivity of evolution].

February	21	Darwinism in the twentieth century
	23	Controversy: The pace of evolution
	28	Pace, continued
March	1	Controversy: Sociobiology
	6	Sociobiology, continued
	8	Documentary: "The Fifth Ape"
	13 and 15	SPRING BREAK; NO CLASS
	20	Controversy: Is evolution progressive?
	22	Progressive? continued
	27	Test Review
	29	SECOND TEST/SECOND ESSAY DUE

III. Darwinism versus creationism in a modern context

Reading: :
1. Michael Behe, "Molecular Machines: Experimental Support for the Design Inference," in reading package
2. Phillip Johnson, *Darwin On Trial*, Chapters 1 thru 4, 9 thru 12

3. William Dembski, "Intelligent Design as a Theory of Information," in reading package
4. Jerry Coyne, *Why Evolution is True,* Chapters 1, 2, 3 (pp. 81-85 only), 4, and 8
5. Prindle, *Stephen Jay Gould*, Chapter Six, pp. 184-195 only

April	3	The modern American politics of evolution
	5	Movie: "Inherit the Wind" (1960)
	10	"Inherit the Wind" continued
	12	Modern politics, continued
	17	Documentary: "Unlocking the Mystery of Life"
	19	Darwinism and creationism
	24	Darwinism and creationism, continued
	26	Documentary: "God Strikes Back"
May	1	Testing Darwinism and Intelligent Design
	3	Test Review
	14 (Monday)	FINAL EXAM/THIRD ESSAY DUE

REQUIREMENTS

Each of the three assignments in this class will be counted equally; that is, each will count one-third toward the final grade. At the end of the semester, the three numerical scores will be averaged, and final grades will be assigned on the basis of the conventional scale: 92.3 and above will receive an "A" in the course, 90 to 92 will receive an "A minus," 88 to 89.7 will receive a "B plus," 82.3 to 87.7 will receive a "B," 80 to 82 will receive a "B minus," 78 to 79.7 will receive a "C plus," 72.3 to 77.7 will receive a "C," 70 to 72 will receive a "C minus," 68 to 69.7 will receive a "D plus," 62.3 to 67.7 will receive a "D," 60 to 62 will receive a "D-minus, and below 60 will receive an "F." Anyone missing a grade (that is, anyone failing to take a test or turn in an essay) will also receive an "F." I may make some small adjustments in these averages to reflect the quality of contribution to class discussion.

The three assignments are due Thursday, February 16, Thursday, March 29, and the day of the final exam, Monday, May 14th. Essays for the first two assignment period are due at the beginning of the class, while essays for the final assignment period are due by noon in my office.

For your three assignments, you may choose to write two essays and take one test, or take two tests and write one essay. It is up to you to decide how you mix the tests and essays, and in what order you choose to do them. You may not, however, "load up" by turning in an essay at the same time that you take a test, thus getting two-thirds of the assignments out of the way on the same day.

ESSAYS

Essays are due at the beginning of class the same day as the tests: February 16, March 29, and the day of the final exam, May 14th, although you may choose to turn in your final essay early. Each essay must be typed, double-spaced, and no more than five letter-size pages long. No legal-size paper. Normal margins. Each must have a cover page giving your name, the class unique number (38650 for Gov. 335m, or 34010 for CTI 370) the semester, and the paper topic in brief.

Topic, first essay: Summarize the important points of Darwin's argument in *The Origin of Species*. Then evaluate TWO of the sub-arguments Darwin makes in support of his theory. Is his reasoning sound? Is his use of evidence sound? In general, are you persuaded by his argument? If you mention a specific argument, it would be a good idea to cite a page in Darwin's book. It might also be a good idea to incorporate "scientific method" as I discussed it in lecture, and as Stephen Jay Gould discussed it in "The Freezing of Noah" in your reading packet.

Topic, second essay: Pick ONE of the controversies we have discussed in this section of the course: The pace of evolution, sociobiology, or the question of whether evolution is progressive. Summarize the controversy, that is, summarize the issue as the people on each side view it. Then evaluate the controversy, that is, explain why you agree with one side or the other. (You may come down on neither side, concluding that it is impossible to choose, but if you do, you must explain why). In your evaluation, be sure that you discuss both the arguments used by each side, and each side's use of evidence. Do not forget to include some of the assigned reading in your discussion.

Topic, third essay: Evaluate modern evolutionary theory and the theory of "Intelligent Design." Pick at least two arguments in favor of Darwinist theory and evaluate them. Pick at least two arguments in favor of ID and evaluate them. (One of your pro-Darwinist arguments can be contra-ID. One of your pro-ID arguments can be contra-Darwinism).

By asking you to "evaluate," I mean discussing and judging the theory's assumptions and logical structure, and also discussing and judging the theory's use of evidence.

Do not forget to include material from the assigned reading in your essay: from Coyne, Johnson, Behe, and Dembski. And also, of course, you will be expected to bring in relevant material from the lectures.

Since by this time in the course my own prejudices should be obvious, I want to repeat here my caution that you will not be rewarded for agreeing with me, nor punished for disagreeing. I am interested in the quality of your arguments, not in your conclusions.

TESTS

There are three tests in this class, February 16, March 29, and the day of the final exam, May 14th. Each test consists of two parts. In the first part, there will be twenty-five multiple-choice questions, dealing with concepts to be listed shortly. A correct answer on each of these counts two points. In the second part, you will be given a group

of ten words or phrases, also chosen from the lists provided below. You will be asked to define each word or phrase, and then explain why it is important (or significant) to the study of the politics of evolution, all in sixty or fewer words. A correct definition is worth two points, and correct explanation is worth three points, for a total of five points per term. Thus, each test offers a possible perfect score of one hundred, fifty from the multiple-choice questions and fifty from the short-answer questions.

Because it is impossible to predict the direction of every conceptual discussion ahead of time, I may make a few additions to and subtractions from the following list of concepts during the course of the semester. Basically, however, the following list contains all, or almost all, of the concepts that you will be expected to know.

Because I may slightly fiddle with the concept list over the course of the semester, you should remember that the "official" list of concepts that might appear on a test is the one that I put on the screen during lecture. Thus, the concept list on this syllabus is advisory only, and may not be complete.

CONCEPTS, FIRST TEST

Concepts from the reading:

Darwin, *Origin*: varieties; "endless forms most beautiful"
Paley, *Natural Theology*: "the watch must have had a maker"
Gould, "The Freezing of Noah:" William Buckland, the diluvian theory
Genesis: "Let there be light"
Prindle, *Stephen Jay Gould*: comprehensive realism; historical science; reductionism; Left-Wing Social Darwinism

Concepts from the lectures: essentialism; magic; pareidolia; teleology; creation myth; empiricism; induction; deduction; implication; replication; premise; equivocation; *ad hominem*; spurious correlation; propaganda; argument from design; HMS Beagle; Thomas Malthus; uniformitarianism; Alfred Russel Wallace; fecundity; "struggle;" adaptation; natural selection; evolution; homology; Asa Gray; Social Darwinism; Herbert Spencer; *Archaeopteryx*; St. George Mivart; exaptation; Lord Kelvin

CONCEPTS, SECOND TEST

Concepts from the reading:

Gould, "Episodic Evolutionary Change:" "the trade secret of paleontology," stasis
Dawkins, *Blind Watchmaker*: constant speedism; *Coelacanth;* "Biblical Creation"
Prindle, *Stephen Jay Gould*, Chapter 3 (pp. 81-103): critical elections
Barash, *Whisperings Within*: Huntington's chorea; Why is sugar sweet?
Somit and Peterson, *Darwinism, Dominance, and Democracy*: hierarchy; "the most fundamental question of all"
Gould, "Our Natural Place:" zoocentrism
Pinker, *Blank Slate*: The Pronoun in the Machine; "the triumph of sociobiology"
Prindle, *Stephen Jay Gould*, Chapter 4: adaptationist program; spandrel
Gould, *Wonderful Life*: Burgess Shale; replaying life's tape; *Wiwaxia*
Morris, *Life's Solution*: convergence

Concepts from the lectures:

gene; allele; Gregor Mendel; genotype; phenotype; DNA; Modern Synthesis; Sexual Selection; R. A. Fisher; The Central Dogma; methodology; phyletic gradualism; fossil; punctuated equilibrium; creationism; naturalistic fallacy; politically left-wing; politically right-wing; SSSM; Richard Dawkins; sociobiology; evolutionary psychology; Science for the People; Pleistocene era; primeval soup; merit; chance; the "Age of Bacteria;" "contingency"

CONCEPTS, THIRD TEST

Concepts from the reading:

Behe, "Molecular Machines:" cilia; "purposeful arrangement of parts;" "we should take a lesson from physics"

Johnson, *Darwin on Trial*: peacock and peahen; Cambrian Explosion; *Teaching Science*; Karl Popper

Dembski, "Intelligent Design as a Theory of Information:" CSI; Actualization-Exclusion-Specification triad

Coyne, *Why Evolution is True*: "the fitter, not the fittest;" *Ambulocetus*; recurrent laryngeal nerve; Seymour Island; Lucy; lactose intolerance

Prindle, *Stephen Jay Gould*, Chapter 6: *Rhagoletis pomonella*; "What creates the fit?"

Concepts from the lectures: "but God guided the process;" "wall of separation;" *En*gel v. *Vitale*; Scopes Trial; Texas State Republican Platform; Discovery Institute; National Center for Science Education; modernism; secular; First Amendment; Secular Humanism; *Lemon v. Kurtzman; The Genesis Flood; Epperson* v. *Arkansas; Edwards* v. *Aguillard; Tammy Kitzmiller* v. *Dover Area School District* ; "Intelligent Design;" irreducible complexity; naturalism; A Designometer?; retrodiction; "provisionally true;" Madagascar hawk moths; Trinidad guppies; *Tiktaalik;* sFltl

Miscellaneous Useful Information

A. Study questions that may help you understand what is important about the terms/phrases/concepts:

1. How does this term help us to understand a causal, moral, or interpretive argument in the lectures or reading?
2. How does this term illustrate/exemplify an important principle discussed in class?

B. Answers to common questions about the tests

1. Is it important to know dates? YES; KNOW THE DATES OF IMPORTANT BOOKS (*ORIGIN OF SPECIES,* 1859), COURT DECISIONS (*LEMON V.* KURTZMAN, 1971) AND THEORIES (PUNCTUATED EQUILIBRIUM, 1972).
2. Will I be penalized if I go over the 60 word limit? YES
3. Must I write in complete sentences? NO, BUT IF WE CANNOT UNDERSTAND YOUR ANSWER, IT IS WRONG

C. Any disabled student may request appropriate academic accommodations from the office of Services for Students with Disabilities, 471-6259.
http://www.utexas.edu/diversity/ddce/ssd/

D. Religious Holidays: By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence. Because I do not take roll, you do not need to "notify" me if you are simply going to miss an ordinary class session, for religious reasons, because you are ill, or for any other reason. (You should, of course, get the lecture material from a friend or from some other source, but you do not have to tell me of your absence in advance). You only need to let me and the TA know of your absence if it will interfere with your taking of a test or completing some other assignment.

E. Dishonesty: I hope it goes without saying that cheating will be dealt with in a merciless manner. But because the University requires me to say it anyway, let me direct you to the UT Honor Code (or statement of ethics) and an explanation or example of what constitutes plagiarism (Link to University Honor Code):

http://registrar.utexas.edu/catalogs/gi09-10/ch01/index.html)

F. Emergency Evacuation Policy

In the event of a fire or other emergency, it may be necessary to evacuate a building rapidly. Upon the activation of a fire alarm or the announcement of an emergency in a university building, all occupants of the building arerequired to evacuate and assemble outside. Once evacuated, no one may re-enter the building without instruction to do so from the Austin Fire Department, University of Texas at Austin PoliceDepartment, or Fire Prevention Services office.

Students should familiarize themselves with all the exit doors of each room and building they occupy at the university, and should remember that the nearest exit routes may not be the same as the way they typically enter buildings.

Students requiring assistance in evacuation shall inform their instructors in writing during the first week of class. Faculty members must then provide this information to the Fire Prevention Services office by fax (512-232-2759), with "Attn. Mr. Roosevelt Easley" written in the subject line.