

Darwin and the Politics of Evolution

Spring, 2022 Syllabus

Gov. 353d and CTI 372
Uniques # 37955 (Gov.),
and # 29870 (CTI)
Meeting times: MWF 2-2:50 p. m.
Meeting room: WAG 214

Professor: David Prindle
Office: Batts Hall, room 4.104
Office phone: (512) 232-7214
email: dprindle@austin.utexas.edu
Office hours: M and W, 12 noon to 1:30 p. m.

Prerequisites

Upper-division standing.

Teaching Assistant

Theodore Charm theodorecharm@gmail.com
Office hours: 11 a. m. to 12:30 p. m., Tuesdays and Thursdays

Learning Outcomes

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, which I call "outside" politics—is familiar to all socially-aware citizens. But there is much less awareness of the "inside" politics of evolution—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.

With that introduction, here are the Learning Outcomes for this course:

By the end of the semester, students will be able to. . .

I. Recognize the difference between *ordinary human thinking* and *scientific thinking*, and be able to identify the situation in which each type of thinking is appropriate.

II. Recognize, understand, and evaluate both factual and moral *arguments*, including those I make in class and those made by the authors of the assigned reading. Evaluating arguments will include both appraising *reasoning* and assessing *evidence*. Such skills will be essential to scoring well on the tests and to writing high-scoring essays.

III. Make their own *arguments* in essays, including their own use of reasoning and evidence. The prompts for the essays will, in essence, ask the students to construct their own arguments about other people's arguments.

IV. Assimilate relevant *facts* in both the biological and political realms. Part of mastering facts will be the ability to understand how facts fit into arguments.

A Strategy for These Times

Last year, in the midst of the pandemic, I redesigned my "Darwin and the Politics of Evolution" class to take account of the emergency situation. In essence, I taught the course twice. I performed all my lectures on Canvas, so that every student could, in effect, take the class without ever coming to campus, or seeing me in person. (One of my students stayed in Pennsylvania the entire semester). In addition, however, once a week I came to campus and gave a lecture in person, on stage (wearing a mask, of course). Any student who wanted to, could come to the lecture hall and hear-and-watch the lecture (also wearing a mask). The great advantage of in-person lectures, of course, is that they provide the opportunity for questions-and-answers, as well as, God willing, class discussion.

I won't go into detail, but I also administered the three tests on-line, and the students submitted their essays on-line.

The results were about what you would expect of a desperate improvisation in the face of an emergency. The largest number of students who ever came to a lecture, out of a class of thirty, was four. The best that could be said of the tests, as a measurement of what students learned, was that they were not extremely different from what I would have expected from a "normal" class.

And, as for office hours, I offered them on Skype. For the entire semester, a total of three students from this class came to talk with me.

Now, here we are a year later. COVID is still stalking us, but most of us have been wise enough to get ourselves vaccinated thrice. However, given the facts that not everyone is vaccinated, and that the "omicron" variant is even more contagious than the previous two types of COVID, University leaders have decided to be extra cautious. They have decreed that the first two weeks of the semester must be taught on line.

So, here are the rules that will prevail for the semester, as of the day I write this syllabus, January 11. Be aware that the rules might change before this week, or this month, or this semester, end.

I will be giving lectures on line (via Canvas) until February. Beginning the first class session in February, **I will** be giving all my lectures on campus, on stage. **I will not** be wearing a mask unless the U requires that I do so. After I begin to give lectures in person, **I will not be** posting my **lectures** on Canvas. **I will be** posting my personal lecture **notes** on Canvas the entire semester. (You should be aware that I wrote those notes for myself, not for students. They will undoubtedly contain too much information for you on some topics, and not enough information on other topics. You must therefore interpret them intelligently. But if you think they might help you, you are welcome to them).

During lectures, you must follow whatever rules the U has put in place about mask-wearing and social-distancing at the start of the semester.

If you want to come up on stage and talk to me after a lecture, you are welcome. But I will probably decide to don a mask after I talk, so you should expect to wear one, also. The same applies to my office hours; come to my office, ask questions, chat, or complain, but follow the current UT rules about masking and vaccinations.

As for tests, as I write this, I am planning to give them the "normal" way, with students taking them in-class, maskless. But if the U orders me to administer them some other way, I will comply. You may submit your essays via email.

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 has a syllabus for the class, a glossary of important terms, a reproduction of all the quotations from lecture, and more.

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: All reading materials, plus the glossary, syllabus, and list of quotations from lectures, are available for purchase from the Great River Learning Website.

To access the reading assignments, glossary, quotation list, etc.:

- 1) Go to grtep.com
You will be on the “publication log-in page.”
If you have purchased the access card from the UT Co-op, you will enter the code provided on the card in the First Time User (with access code) box in the top right. If you didn’t purchase a code from the UT Co-op and are paying with a credit card, debit card, etc. then you would click on the “Click Here to Purchase” button under the box labeled First Time User (without access code).
- 2) In the space labelled “Choose your on-line publication,” type “University of Texas-Austin”
This will auto-populate the titles available in the space labelled “Online Publication”. From there, select “Darwin & The Politics of Evolution - Prindle”
- 3) On the screen labelled “Selected Publication,” fill in the required details, among which will be creating your account information, i.e. user id and password and/or credit card information.
- 4) Once your profile is created and either your code from bookstore has been activated and/or credit card payment has been processed, the available sections will be displayed. There is only one section, so that choice is easy.
- 5) Click on “Spring 2020: Darwin and the Politics of Evolution,” and you should have access to all the material.

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

Class Meeting Schedule

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

- Reading:
1. Excerpts from Chapter 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

	<u>Date</u>	<u>Topic</u>
January	19	Introduction to the politics of evolution
	21	Intro, continued
	24	Reasoning, argument, propaganda
	26	Argument, continued
	28	Movie: "Creation" (2009)
	31	"Creation," continued
February	2	Darwin's historical context
	4	Structure of the theory
	7	Structure of the theory, continued
	9	Documentary: "Life, Darwin, and Everything"
	11	"Darwin," continued
	14	Reception of <i>The Origin</i> during the 19 th century
	16	Reception, continued
	18	Test, essay review
	21	FIRST ESSAY, TEST

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 (reading package)
 11. Simon Conway Morris, *Life's Solution*, xi-xvi, 283-310, (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	23	Evolutionary biology in the twentieth century
	25	Twentieth century, continued
	28	Controversy: The pace of evolution
March	2	TV program: "The Simpsons—Lisa the Skeptic"
	4	Controversy: Sociobiology
	7	Sociobiology, (continued)
	9	Documentary: "The Third Ape"
	11	"Third Ape," continued
	14, 16, 18	SPRING BREAK; NO CLASS
	21	Controversy: Is evolution progressive?
	23	Progressive? (continued)
	25	Controversy: Are we all Dr. Frankenstein now?
	28	Frankenstein? continued
	30	Controversy: What is life?
April	1	Test/essay Review
	4	SECOND TEST/SECOND ESSAY DUE

III. Evolutionary biology versus creationism in a modern context

- Reading:
1. Michael Behe, "Molecular Machines: Experimental Support for the Design Inference," (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," (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
 6. Prindle, *The Politics of Evolution*, Chapter Five, (reading packet)

April	6	The modern American politics of evolution
	8	Modern politics, continued
	11	Documentary: "Unlocking the Mystery of Life"
	13	"Mystery of Life" continued
	15	Evolutionary biology and creationism
	18	Biology and creationism, continued
	20	Documentary: "The Revisionaries"
	22	"Revisionaries," continued
	25	Testing evolutionary biology and intelligent design
	27	Testing, continued
	29	Documentary: "Expelled"
May	2	"Expelled," continued
	4	Overflow
	6	Test/essay review
Not yet available		FINAL EXAM/THIRD ESSAY DUE

REQUIREMENTS

Each of the three assignments in this class will, in general, 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." In addition, anyone missing a grade (that is, anyone failing to take a test or turn in an essay) will receive an "F." I may make some small adjustments in these averages to reflect the quality of contribution to class discussion.

As I compose this syllabus, under conditions of historical uncertainty caused by the pandemic, it is still not clear whether the tests will be given in-person or virtually. Whatever the format, we will adjust and comply. The three assignments are due Monday, February 21, Monday, April 4, and **the day of the final exam**. 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, either physically submitted in my office or virtually submitted to my email address.

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 in one day.

ESSAYS

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.

Essays are due at the beginning of class the same day as the tests: February 21, April 4, and **the day of the final exam, which is not yet available**, 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, 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 (first edition, Barnes and Noble Classic, 2004). 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 first three controversies we have discussed in this section of the course: the pace of evolution, sociobiology, or the question of whether evolution is progressive. (Do not choose the "What is life?" or "Frankenstein?" controversies). 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 scientific evolutionary 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.

TESTS

There are three tests in this class, February 21, April 4, **and, the day of the final exam, which is not yet available.** 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. Therefore, 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, and/or post on Canvas along with my personal lecture notes. 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; *non-sequitur*; equivocation; *ad hominem*; spurious correlation; "three types of lies;" propaganda; sophistry; argument from design; HMS Beagle; Thomas Malthus; uniformitarianism; Alfred Russel Wallace; analogy; fecundity; "struggle;" adaptation; natural selection; evolution; homology; rudimentary organs; "book metaphor;" "only a theory;" Asa Gray; Social Darwinism; Herbert Spencer; eugenics; *Archaeopteryx*; St. George Mivart; exaptation; Lord Kelvin; Peter Kropotkin

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:

Gregor Mendel; gene; allele; 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; Science for the People; Pleistocene epoch; evolutionary psychology; J. Phillippe Rushton; "race realism;" "implicitly defend the status quo;" primeval soup; merit; chance; the "Age of Bacteria;" "contingency;" "inhumanism;" "Frankenstein;" positive eugenics; "X-Men;" James Watson; recombinant DNA; Asilomar conference; Paul Berg; CRISPR; "designer babies;" life; Miller-Urey experiment; self-organization theory, "volcanic pools" theory; statistical fallacy

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?"
Prindle, *Politics of Evolution*, (reading package) Chapter 5: "Establishment Clause;" *Wisconsin v. Yoder*

Concepts from the lectures: "but God guided the process;" "wall of separation;" *Engel 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* ; SBOE; "Intelligent Design;" irreducible complexity; naturalism; A Designometer?; retrodiction; "provisionally"

true;" Madagascar hawk moths; Trinidad guppies; *Tiktaalik*; sFltl; PDE10A; epigenetics; "science can be a form of worship"

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/>

As with other rules, those pertaining to disabled students might have to be modified during the course of the semester because of the ongoing pandemic. We will all just have to resolve to adjust to circumstances. Contact me or the TA if you have a problem.

- 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.

If you have to be absent from class for religious reasons on the scheduled day of a test, the obvious way to deal with the problem is to write an essay instead of taking the test, and submit it the day before it is due. As a result, you should consult the class schedule contained in this syllabus, and plan your test-taking, or essay-submissions, so that they will not clash with your religious obligations.

As with other rules, those pertaining to religious holidays might have to be modified during the course of the semester because of the ongoing pandemic. We will all just have to resolve to adjust to circumstances. Contact me or the TA if you have a problem.

- 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 are required 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 Police Department, 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.