

BORROMEIO SEMINARY *at*
JOHN CARROLL UNIVERSITY

***What Does Science Prove?:
Topics at the Intersection of Science and Religion***
Fall 2016

*Philosophy 398, Section 41
Time TR 2:55-4:10
Aquinas Hall*

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I. COURSE DESCRIPTION

One popular idea circulating in the mainstream is that religion and science are fundamentally incompatible. Jerry Coyne opens his recent book, *Faith vs. Fact*, with the remark that faith is poisonous to science because “faith is no way to find truth.” Neil deGrasse Tyson, hosting FOX’s television series *Cosmos*, likens the Catholic Church to Thought Police responsible for suppressing and executing inquisitive scientists. All of this seemingly points to the following dilemma: one can have either science or religion, but not both. E.O. Wilson captures the dilemma nicely when he says: “I’m not an atheist—I’m a scientist.”

In this course, we will try to avoid the dilemma. To do this, we will focus on the question of what science actually proves with respect to theological claims. Answering this question requires us to focus on three smaller questions. First, what are the relevant theological claims? We cannot say anything about the incompatibility of science and religion until we get clear on the theology. Second, what are the scientifically informed challenges to the relevant theological claims? In what way do scientific critics of religion conceive of their own position? Third, what sort of evidence does the latest scientific data provide? This last question is the core of the course. To answer the scientific challenge to religion requires figuring out what claims the latest scientific research actually supports.

Of course, the relationship between science and religion is not always antagonistic. Sometimes science provides evidence for core theological claims. Thus, in addition to answering the challenges posed by some scientists to religion, we will also identify those areas in which science seems to provide strong evidence for religious claims. This will provide the groundwork for a scientifically informed faith.

We will approach the empirical data with an open mind and make a fair evaluation of the dispute between religion and science. Beyond evaluating the compatibility of science and religion, this course aims to develop both a better understanding of the world through studying a rich array of empirical research *and* a better understanding of key theological claims, particularly those that have an empirical component.

Some of the themes that we investigate in this course include: the origins of the universe, cognitive psychology of religious belief, human uniqueness and immortality, artificial intelligence, moral responsibility and neuroscience, and the historical Adam.

II. LEARNING OBJECTIVES

1. Students will be able to articulate why people might think science and religion are incompatible.
2. Students will be able to define key scientific terms and relevant theological claims.
3. Students will be able to analyze and respond to the alleged conflict between science and religion, broadly construed, as well as particular issues at the intersection of science and religion.
4. Students will be able to illustrate concretely the ways in which science can enrich theology.
5. Students will **begin learning** to read, summarize, interpret, and critically analyze articles in reputable science publications, e.g., *Science*, *Nature*, and *PLOS ONE*.
6. Students will be able to communicate effectively in writing and speech about issues in science and religion.
7. Students will commit themselves to keeping up with current scientific research, beyond the duration of the course.

III. TEXTS AND MATERIALS

I will provide copies of supplementary readings, but you will need to acquire the following texts and materials. No electronic copies may be used. See the bibliography at the end of the syllabus for supplementary readings.

- (1) Austriaco, Nicanor, et al. *Thomistic Evolution*. Tacoma, WA: Cluny Media, 2016.
- (2) Okasha, Samir. *Philosophy of Science: A Very Short Introduction*. New York: Oxford University Press, 2002.
- (3) Three-ring binder (to organize the semester's readings)

IV. GRADED REQUIREMENTS

Class Participation: Active and regular participation is required of all students. This means that all students will be attentive and prepared both to ask and answer questions.

Homework: Reading response questions and reflections are short but serious exercises aimed at fostering understanding of the text and class participation. They may also be helpful study aids before exams. Reading response questions or reflection prompts will be given to you in advance. All responses should be typewritten and printed out *before* the class period for which they are due and turned in during the class. These assignments will be graded on a pass/fail basis, marked with either a check or a note explaining why the assignment was unacceptable. No late homework assignments will be accepted for credit.

Quizzes: Periodic quizzes, either announced or unannounced, will be given on important concepts. Careful reading and attentiveness in class will prepare you for quizzes.

Article Analyses: Three article analyses will be due during the semester. You must submit two during the first half of the term (before Fall Break) and the third analysis before the final day of class. Each analysis should be approximately 500 (475-525) words in length, not counting footnotes (about two pages). Please attach a copy of the original article to your analysis.

The Assignment

1. Find an article in a popular, but reputable, scientific journal, such as *Nature*, *Nature Communications*, *Philosophical Transactions of the Royal Society*, *PLOS ONE*, *Proceedings of the National Academy of Sciences*, *Proceedings of the Royal Society*, *Science*, and *Scientific Reports*. If you wish to use an article outside of one of these publications, please send the article to me for review first. No article may be published earlier than 2014.
2. Identify the central hypothesis or claim that the author(s) make.
3. Identify the methods used to gain evidence for the claim.
4. Summarize the central pieces of evidence used to support the claim.
5. Offer your own analysis of the conclusions the authors/investigators wish to draw from the study.

Op-Ed Essay: Your task is to compose an op-ed essay addressing one of the following two topics: 1) Does science prove that religion and religious belief are false? OR 2) Pick a particular topic in which science and religion seem to conflict: Does the scientific claim *x* show that religious belief *y* is false? I will provide specifications as the due date for the first draft approaches (Nov. 10). A second, revised draft will be due.

Exams: There will be two exams: a mid-term and a final. The final exam will be cumulative, although there will be an emphasis on material from the second half of the course. Exams will consist mainly of short and long essay questions.

V. GRADING

Class Participation, Homework, and Quizzes: 15%
Mid-term Exam: 20%
Article Analyses: 15%
Op-Ed Essay: 25%
Final Exam: 25%

Grading Scale		
92-100	A	78-79 C+
90-91	A-	72-77 C
88-89	B+	70-71 C-
82-87	B	60-69 D
80-81	B-	0-59 F

VI. ACADEMIC HONESTY

Students involved in unethical practices such as cheating, plagiarism, etc. in connection with any work for the course is subject to a grade of 'F' (Failure) for the course. For more information, see the JCU Undergraduate Bulletin. Any instance of academic dishonesty concerning seminarians is also considered a formation issue and may subject the student to dismissal from the seminary.

VII. STATEMENT ABOUT STUDENTS WITH DISABILITIES

In accordance with federal law, if you have a documented disability (learning, psychological, sensory, physical, or medical) you may be eligible to request accommodations from the Office of Services for Students with Disabilities (SSD). Please contact them at (216) 397-4967 or visit the office located in room A-7 in the Garden Level of the Administration Building. Please keep in mind that accommodations are not retroactive, so it is best to register at the beginning of each semester. Only accommodations approved by SSD will be recognized in the classroom. Please contact SSD with further questions.

VIII. CLASS PROTOCOL

Punctuality is required
Cell phones are to be silenced and stowed
Eating is not permitted
Hats are to be removed during class
Portable electronic devices (laptops, iPads, etc.) must be stowed during class

IX. COURSE OUTLINE

A. Science and Scientific Methods

B. Universe: Created or Uncreated?

Scientific Claim 1: The universe is not created. It has existed for infinite time.

Scientific Claim 2: The universe is not created. It is a random outcome.

Religious Claim: God intentionally created the universe in time.

C. The Historical Adam

Scientific Claim: There is no unique historical person (or couple) that is a common ancestor for the human race (and, hence, no unique 'entrance point' for sin, as Paul claims).

Religious Claim: All humans descended through a common ancestor.

"Therefore as sin came into the world *through one man* and death through sin, [...] so death spread to all men because all men sinned" (Romans 5:12).

D. Human Uniqueness - Evolution

Scientific Claim: Humans have been produced by the same mechanisms as every other organic organism and, like them, are strictly material.

Religious Claim: God created human beings with corruptible bodies and immortal souls. They were made in God's image and likeness.

E. Human Uniqueness - Technology and Artificial Intelligence

Scientific Claim: Humans are biological computers.

Religious Claim: Human rationality makes us uniquely like God.

F. Responsibility and Neuroscience

Scientific Claim: All human behavior is a result of either random or deterministic causal influences that operate below the level of conscious awareness. Thus, humans are not morally responsible for anything they do.

Religious Claim: Humans are capable of moral responsibility; they are able to sin and can suffer eternal damnation as a consequence of sin.

G. Cognitive Psychology and Religious Belief

Scientific Claim: People have religious beliefs solely as a result of evolutionary processes.

Religious Claim: People have religious beliefs because of spiritual realities.

X. COURSE SCHEDULE *

Date	Assignment	Topic
30-Aug	(Pre-Test)	Science and Religion: Setting up the Problem
1-Sep	Church documents (<i>varia</i>); Video on Draper and White	Science and Religion: Setting up the Problem
6-Sep	Rosenberg (2011), pp.20-28; Feser (2014), pp.10-30	Science and Scientific Methods
8-Sep	<i>No Class. Attend Friday, 9/9: William Newsome, Ph.D., Stanford University, neuroscientist</i>	
13-Sep	Carroll, "Does the Universe Need God?"	Universe: Created or Uncreated?
15-Sep	Craig, "The Ultimate Question of Origins: God and the Beginning of the Universe"	Universe: Created or Uncreated?
20-Sep	Collins, "The Fine-Tuning of the Cosmos"	Universe: Created or Uncreated?
22-Sep	<i>No Class – Conference in Bellingham, WA</i>	
27-Sep	Austriaco, <i>Thomistic Evolution</i> selections	The Historical Adam
29-Sep	<i>Nature</i> essay, "Genetic Adam and Eve"	The Historical Adam
4-Oct	Op-Ed Learning Day	
6-Oct	<i>No Class. Attend Saturday, 10/8: Rev. Nicanor Austriaco, Providence College, geneticist</i>	
11-Oct	Exam	
13-Oct	<i>No Class – Feast of St. Charles Borromeo (observed)</i>	
18-Oct	Dennett (1996), pp. 60-83 (N.B. Last day to submit first two analyses)	Human Uniqueness
20-Oct	Gazzaniga (2008), pp. 7-37	Human Uniqueness
25-Oct	Guest – video lecture – Robert Sapolsky, Ph.D., neuroscientist and primatologist	Human Uniqueness
27-Oct	Searle, "Minds, Brains and Programs"	Human and Artificial Intelligence
1-Nov	"Machines Who Learn", <i>Scientific American</i> (June 2016); watch Fei Fei Li Ted Talk for HW	Human and Artificial Intelligence
3-Nov	Critique and Implications	Human and Artificial Intelligence
8-Nov	Guest – Michael Burdett, Ph.D., University of Oxford (via Skype)	Responsibility and Neuroscience
10-Nov	Fischer and Ravizza, "Introduction" (1994) Selections	Responsibility and Neuroscience
15-Nov	Brain Mechanisms of Movement Textbook Selection; Op-Ed Essay Due (first draft)	Responsibility and Neuroscience
17-Nov	Schlegel <i>et al.</i> , "Hypnotizing Libet"; Alexander <i>et al.</i> , "Dissecting the Readiness Potential"	Responsibility and Neuroscience
22-Nov	<i>No Class - 'JCU Friday'</i>	
24-Nov	<i>No Class - Thanksgiving Break</i>	
29-Nov	Nahmias, "Is Free Will an Illusion?"; Misirlisoy and Haggard, "A Neuroscientific Account"	Responsibility and Neuroscience
1-Dec	Bloom, "Religious Belief as an Evolutionary Accident" (Third analysis due)	Cognitive Psych and Religious Belief
6-Dec	Murray and Goldberg, "Evolutionary Accounts of Religion"	Cognitive Psych and Religious Belief
8-Dec	Review Day	The Historical Adam

* N.B. The order of topics is subject to change based on availability of guest speakers. Texts may also be subject to change *with notice*.

XI. BIBLIOGRAPHY

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