1. What is religion?
2. How do you justify religious claims?
3. What is science?
4. Is "scientific creationism" science?
5. What are the possible relationships between science & religion?
6. Positions within the evolution/creation continuum

A set of beliefs concerning the cause, nature and purpose of the universe, especially when considered as the creation of a supernatural agency (or agencies), usually involving devotional and ritual observances and often having a moral code for the conduct of human affairs.

Belief: Confidence, faith or trust in the truth or existence of something not immediately susceptible to rigorous proof.

Supernatural: something above or beyond what is explainable by natural laws.

Common Aspects of Religion
- Belief in supernatural beings
- A distinction between the sacred and the profane
- Ritual acts focused on sacred objects
- A moral code believed to be sanctioned by supernatural beings or beings
- Characteristic feelings of awe, adoration, and sense of mystery
- Prayer or other forms of communication with the supernatural being or beings
- A worldview with an overall specification of purpose and place
- Total organization of one's life based on this worldview
- A social group bound together by the above

Stephen J. Wykstra, Osiris 16: p. 34 (2001)
How do you justify religious claims?

Justification of Religious Belief

Experience

(a posteriori)

Revelation

(a priori)

Revelation

(a priori)

 Allegorically
True

Literally
True

“Simply A Story”

Revealed
Text

The Ancient Hebrew Conception of the Universe

To illustrate the history of Uranus and the Earth
1. The waters above the firmament
2. Storage of snow
3. Storage of hail
4. Rooms for the winds
5. The firmament
6. Cataracts
7. The Pillars of Heaven
8. The Pillars of Earth
9. Fountains of the Abyss
10. Center of the Earth
11. Subterranean waters
12. Rivers of the Underworld

**A Stationary Earth & Mobile Sun**

- "The LORD is king, robed with majesty; the LORD is robed, girded with might. The world will surely stand in place, never to be moved." [Psalms 93:1]
- "The LORD is king. The world will surely stand fast, never to be moved." [Psalms 96:10]
- "You fixed the earth on its foundation, never to be moved." [Psalms 104:5]
- "Tremble before him, all the earth; he has made the world firm, not to be moved." (1 Chronicles 16:30)
- "So the sun stood still in the midst of heaven, and hasted not to go down about a whole day." [Joshua 10:13]

**Noachian Flood**

600 year old Noah warned by God, builds ark for family and pair of each animal, flood lasts 40 days / 40 nights, comes to rest at Mountains of Ararat.

**Saint Augustine**

“If it happens that the authority of sacred Scripture is set in opposition to clear and certain reasoning, the person who interprets Scripture does not understand it correctly.”
The “Two Books” metaphor

God

nature

Science & Philosophy

Scripture

Theology & Philosophy

Who wrote the “Book of Scripture”?

- Traditionally Moses
- Nineteenth Century preoccupation with authentication
  - Witter, Alstruc & Eichhorn – discovery of “doublets” based on linguistic style and repetition.
  - Lead to the “Documentary Hypothesis”

The Documentary Hypothesis

- Reference to God
  - “YHWH” – JHWH – Jehovah – J
  - “Elohim” – E
- Concerned with rites, duties and genealogy
  - Priestly – P
- Book of Deuteronomy – D
- “Redactor” – R

Genesis 2:4b –

- J account
  - Older, Reign of King Solomon, ~1000 BCE
  - Imagery of wandering shepherds
  - Water / barren earth
  - Concerned with man
  - Anthropomorphic God

Genesis 1:1 – 2:4a

- P account
  - Younger, Exile in Babylon, 6th C BCE
  - Creation of universe
  - Order over chaos
  - Lush environment
  - Splitting of water
  - Transcendent, unknowable, god
Justification of Religious Belief

Experience (a posteriori)

The Place of Evidence

Belief in God must be supported by objective evidence.

Any belief is rational if and only if there is sufficient evidence to support it, and rationality is in direct proportion to the balance of evidence.

Evidentialism

Non-Evidentialism

Kurt Wise

"If all the evidence in the universe turns against creationism, I would be the first to admit it, but I would still be a creationist because that is what the Word of God seems to indicate."

What kind of God?

- One and only one all-powerful God
- who created the Universe
- and remains immanent in his creation

(i) and (ii) accepted based on reason, but (iii) not accepted

Theism

Deism

Three Major Categories

- Cosmological
  - The universe and everything in it depends on something [God] for its existence.

- Teleological
  - The natural world appears to have been designed by a creator.

- Ontological
  - Existence is entailed by the concept of God.
Causation of Existence

- There exists things that are caused (created) by other things.
- Nothing can be the cause of itself (nothing can create itself.)
- There can not be an endless string of objects causing other objects to exist.
- Therefore, there must be an uncaused first cause called God.

The Design Argument

- Teleological argument
- Common sense tells us that the universe works in such a way that one can conclude that it was designed by an intelligent designer.

“Were there no example in the world of contrivance except that of the eye, it would be alone sufficient to support the conclusion which we draw from it, as to the necessity of an intelligent Creator”

- William Paley
- *Natural Theology*, 1802
- Analogy: Discovery of watch on ground
  - A designer is the most probable explanation for the universe.
Elliot Sober’s Interpretation

A: X is intricate and well suited to a task T

W₁: X is a product of intelligent design

W₂: X is a product of random physical forces

Paley claims that the likelihood of W₁ given A exceeds that of W₂, i.e. \( P(A|W₁) >> P(A|W₂) \)

(This is abduction to the best explanation)

The Design Argument

- Many of the things we observe are complicated, intricate and work well together. This cannot have arisen by chance and therefore must have arisen by design.

- Design implies a Designer.
  - Argument to Design

- Good, perfect and benevolent design implies a good, perfect, benevolent designer God.
  - Argument from Design

Paley

- Contrivance shows presence of designing intelligence whose attributes “must be adequate to the magnitude, extent, and multiplicity of his operations”

- “Uniformity of plan observable in the universe” reflects the unity and wisdom of God.

- Goodness is proven by
  - Beneficial nature of contrivances
  - Pleasure added to animal sensations

“We have no reason to fear”

“We have no reason to fear”

“…The hinges in the wings of an earwig and the joints of its antennae, are as highly wrought, as if the Creator had nothing else to finish. We see no signs of diminution of care by multiplicity of objects, or of distraction of thought by variety. We have no reason to fear, therefore, our being forgotten, or overlooked, or neglected.”
Is God willing to prevent evil, but not able? Then He is not omnipotent.

Is He able, but not willing? Then He is malevolent.

Is He both able and willing? Then whence cometh evil?

Is He neither able nor willing? Then why call Him God?

Are God and Nature then at strife,
That Nature lends such evil dreams?
So careful of the type she seems,
So careless of the single life;

So careful of the type? but no.
From scarped cliff and quarried stone
She cries, ‘A thousand types are gone:
I care for nothing, all shall go.

The Arguments

**A priori arguments**
- The world contains an infinite sequence of contingent facts
- An explanation is needed which cannot reside within the sequence
- This is God as it needs to be the explanation for its own existence.

**A posteriori arguments**
- Machines are produced by intelligent design
- The universe resembles a machine
- Therefore, the universe was produced by intelligent design

The Conclusion

- Design argument is a flawed analogy
- Limits of our experience of the vast universe
- No definitive proof of the unity, powerfulness, or presence of the creator
  - "a total suspension of judgement is here our only reasonable resource."
Is there a **natural** explanation?

- Design was apparent and did not imply a designer.
- Natural mechanisms were sufficient to explain good (and bad) design.
- "Evil" is a meaningless concept when considering the natural world. Moral evil (i.e. human evil) has natural roots.

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**What is science?**

A systematic method for understanding the natural world with reference to natural law.

Deals in proximate (vs. ultimate) causation.

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**What is Science?**

- Methodological
  - Science can only study nature using natural laws. Supernatural entities, while they may exist, are not allowed as scientific explanations of phenomena.
- Philosophical
  - The supernatural does not exist.

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**Naturalism**

- A unified collection of hypotheses that have been tested and (at least provisionally) explain some aspects of nature.
- Theories can always be rejected following observation, but they currently stand on the top of the epistemological ladder:
  - Theory > Hypothesis > Observation
- Aspects of theories are always in dispute among experts, but the overall framework usually survives repeated scrutiny.

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**Scientific Hierarchy**

- Theory / Fact
- Hypothesis
- Observation
What Makes a “Good” Theory

- Fecundity
- Conclusions are tentative
- Testable against the empirical world either through predictions or retrodictions
- Falsifiable (versus false!)
- Guided by natural law

Generalized Method

- Observe world (collect observations / facts)
- Ask “why” questions
- Make explanatory hypothesis
- Make predictions or retrodictions
- Test predictions or retrodictions
  - By experiment or further observation
  - Assume uniform cause and effect (actualism)
- Eventually results in formation of a theory

Are these “just” theories?

- Theory of Relativity
- Theory of Gravitation
- Germ Theory of Disease
- Theory of Plate Tectonics
- Atomic Theory of Matter
Data Hypothesis Beliefs

Facts Testing

objective truth

Subjective Truth

Public Private

Sphere Sphere

Mythic "Facts"

Theory

Values

Satisfy currency

Address societal issues

Inform policy

Solve everyday problems

Develop technology

Sustainable

Community analysis and research

Gathering data

Interpreting data

Supportive, contradicry, surprising or unexpected data may...

...support a hypothesis.

...support a hypothesis.

...oppose a hypothesis.

...imply refined assumptions

Expected results/observations

Actual results/observations

Hypothesis

Testing

Testing phase

Testing phase
4
Is “scientific creationism” science?

What is Creation?

“The creation [is] the bringing into being of the basic kinds of plants and animals by the process of sudden, or fiat, creation, an example of which is described in the first two chapters of Genesis. … We do not know how God created, what processes He used, for God used processes which are not now operating anywhere in the natural universe.”


What About “Creation Science”? 

“Creation cannot be proved [because] creation is not taking place now, as far as can be observed … and is thus inaccessible to the scientific method.

[Henry Morris, Scientific Creationism, p. 5]

Therefore;

» “Creation science” is not science, and

» Neither is evolution, so

» If one is taught in science class, both should be taught as both are a matter of belief.

“If evolution is taking place today, it operates too slowly to be measurable, and therefore, is outside the realm of empirical science”

[Morris, op. cit.]
“While the theories and opinions of some scientists may contradict the Bible, there is no contradiction between the facts of science and the Bible.”


**YEC Use of Theory**

**Importance of the Flood to YEC**

› Creation event itself cannot be studied scientifically (as admitted by Morris, Gish etc)

› But a Global Deluge can.

  ◦ Inference that the geological record shows the marks of a global flood

  ◦ Therefore, the *Genesis* flood account is validated

  ◦ Therefore, the *totality* of the *Genesis* account is validated

5 relationships between science and religion
Vain Speculation Undeceived by Sense

“I have no idea how the sea could reach so far into the land; I do not know whether this happened during the universal Deluge or during other special floods. ... I do not know, neither do I know the way to find out. Nor do I care. What I do know is that the corals, the shells, the sharks’ teeth, the dogfish teeth, the echinoids, etc., are real corals, real shells, real teeth, shells and bones that have indeed been petrified.”

Giordano Bruno, 1548 - 1600

Original Horizontality: most sediments, when originally formed, were laid down horizontally.

Original Lateral Continuity: the sediment will not only be deposited in a flat layer, it will be a layer that extends for a considerable distance in all directions. In other words, the layer is laterally continuous.

Agostino Scilla, 1670

Steno’s Laws, 1669

Preliminary discourse to a dissertation on a solid body naturally contained within a solid (i.e. on fossils)

Superimposition: Layers of rock are arranged in a time sequence, with the oldest on the bottom and the youngest on the top, unless later processes disturb this arrangement.
Thomas Burnett

*The Sacred Theory of Earth*

1680
Archbishop James Ussher

- **Annals of the Old Covenant from the First Origin of the World** (1650)
  - Creation on the evening preceding Sunday, 23rd October 4004 BCE

Biblical Estimates of Age

- Theophilus – 7,519
- Eusebius – 7,167
- St. Basil – 5,994
- St Augustine – 6,321
- Alphonso X – 8,952
- Lightfoot – 5918

Chaos–Restitution

- Matter & Life Created
- Fossils Formed
- Perhaps multiple cataclysms and creations
- 6-day Edenic Restoration
- Noah’s Flood (local?)

James Hutton

1726 – 1797
Theory of the Earth

**Theory of the Earth, or an Investigation of the Laws Observable in the Composition, Dissolution and Restoration of Land upon the Globe. (1785 / 88 / 95)**

The Earth had a long history and that this history could be interpreted in terms of processes currently observed.

James Hutton & Deep Time

"Here are three distinct successive periods of existence, and each of these is, in our measurement of time, a thing of infinite duration. ...The result, therefore, of this physical inquiry is, that we find no vestige of a beginning, no prospect of an end."

By the early 1800’s

- Earth realized to be older than Ussher’s estimate – but how old?
- (Local?) flood believed to be the cause of some fossils
- Use of naturalistic mechanisms
- Rise of stratigraphy (no assumption of age)

Thomas Chalmers

"There is a prejudice against the speculations of the geologists, which I am anxious to remove. It is said that they nurture infidel propensities ... This is a false alarm. The writings of Moses do not fix the antiquity of the globe."

1804

Charles Lyell

1797 – 1875

- *Principles of Geology* (1830–33)
- *Elements of Geology* (1838)
- *Geological Evidences of the Antiquity of Man* (1863)

"An attempt to explain the former changes of the Earth's surface by reference to causes now in operation"
“The present is key to the past”

- Basic laws of nature had not changed over time
- No causes other than those we can see operating now can be employed in explanations (actualism)
- The intensity of these causes does not change over time (uniformitarianism)

“Scriptural Geology”

James Mellor Brown on geologists:

- “This affords another illustration of men who pull down the bulwark, but disclaim any intention of endangering the citadel. The Trojan Horse, drawn within the walls of the devoted city by friendly hands, is a standing emblem of men acting under the unsuspecting guidance of the Evil One.”

Charles Lyell

“We cannot sufficiently deprecate the interference of a certain class of writers on this question... While they denounce as heterodox the current opinions of geologists, with respect to the high antiquity of the earth and of certain class of organic beings, they do no scruple to promulgate theories concerning the creation and the deluge, derived from their own expositions of the sacred text, in which they endeavour to point out the accordance of the Mosaic history with phenomena which they have never studied, and to judge of which every page of their writings proves their consummate incompetence.” [1827]

Adam Sedgwick

“[T]he goodly pile, gentlemen, which many of you have helped to rear, after years of labour, has been pulled down and reconstructed; but with such unskilful [sic] hands that its inscriptions are turned upside down; its sculptured figures have their heads to the ground, and their heels to the heavens; and the whole fabric, amid the fantastic ornaments by which it is degraded, has lost the beauty and the harmony of its old proportions.” [1831]
Hugh Miller

“The follies of the present day are transcripts, unwittingly produced, and with of course a few variations, of follies which existed centuries ago; and it seems to be, that scarce an explanation of geologic phenomena has been given by the anti-geologists of our own times, that was not anticipated by writers of the sixteenth and seventeenth centuries.”

Conflict

› “I don’t know any historian of science, of any religious persuasion or none, who would hold to the theory that conflict is the name of the game between science and religion, it simply isn’t true.” (Colin Russell)

› The prime sources for the conflict thesis are two “historical” works:
  • J.W. Draper’s “History of the Conflict between Religion and Science” (1874)
  • A.D. White’s “History of the Warfare of Science with Theology in Christendom” (1896)

John William Draper

› Believed in the positivism of Auguste Comte which held that civilization moves through stages of which science is the peak.
› Spoke of the “expansive force of human intellect and the compression arising from traditionary faith.”
› Continually quotes authorities out of context – most notably St Augustine
› Vehemently anti-Catholic

Andrew Dickson White

› Founder of Cornell, the first major secular university in America
› He hoped Cornell would be “an asylum for Science—where truth shall be sought for truth’s sake, not stretched or cut exactly to fit Revealed Religion.”
› In response to attacks on him by Protestants, he wrote ‘History’ to describe how pernicious Catholicism was.
› Eventually, even Christian groups took White to task for perpetuating myths by his biases and cooking of the facts.

Stephen Jay Gould

“No such conflict [between science and religion] should exist because each subject has a legitimate magisterium, or domain of teaching authority…. The net of science covers the empirical universe: what is it made of (fact) and why does it work this way (theory). The net of religion extends over questions of moral meaning and value.”
The Columbine Shootings happened “because our school systems teach the children that they are nothing but glorified apes who have evolutionized out of some primordial soup of mud.” (June 16, 1999)

Tom DeLay

Rates of Religious Adherence (US)

[Graph showing rates of religious adherence from 1776 to 2000]

Data from Finke & Stark, 2005

http://www.templeton-cambridge.org/fellows/vedantam/publications/2006.02.05_aden_and_evolution/
"If science proves some belief of Buddhism wrong, then Buddhism will have to change. In my view, science and Buddhism share a search for the truth and for understanding reality. By learning from science about aspects of reality where its understanding may be more advanced, I believe that Buddhism enriches its own worldview."

NYT, Nov 12th 2005
Old Earth Creationism (OEC)

- Harmonization of theology and scientific data that began in the 1700’s.
- Acceptance of the age of the Earth but general rejection of evolution
- Gap Creationism
- Day-Age Creationism
- Progressive Creationism (PC)

Progressive Creationism

- Majority view among modern OEC’s
- Acceptance of modern chemistry, physics, geology, and most of biology.
- Sequential creation of groups (“kinds”) by God or Pre-programmed appearance of organelles, organs or organisms.

Theistic Evolution

- The view of creation taught at the majority of mainline Protestant seminaries, and it is the position of the Catholic Church.
- God creates through the laws of nature
- Acceptance of descent with modification
- To what degree does God intervene?
  - Origin of humans? Origin of human mental capacity?

Agnostic Evolution

- Individuals who accept the scientific evidence that evolution occurred but do not consider important the question of whether God is or was or will be involved.
Literalism
- Young Earth Creationism
- "Scientific Creationism"

Old Earth
- Progressive Creationism

Naturalistic
- Theistic Evolution
- Agnostic or Atheistic Evolution

Literalism
- Intelligent Design

Old Earth
- Intelligent Design

Naturalistic
- Naturalistic "Design"

Literalism
- Methodological Theism
- Philosophical Theism

Old Earth
- Methodological Naturalism
- Philosophical Theism

Naturalistic
- Methodological Naturalism
- Philosophical Naturalism or Theism