



Disputed Questions and the Handling of **Evolutionary Theory**

Plus Bonus: Reflections on Scientific Theories

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Disputed Questions have always been around. The classical tradition is to treat such issues as open questions, with free, open, respectful debate.

There are disputed questions in every field (not only science). Science has many, and among American evangelical Christians, evolution is the most disputed of all.



2.

Christian educators have done a poor job of handling evolution the result has been a crisis of faith for thousands of students when they go to college.



3.

the merits of the theory or whether the Bible has anything to do with it.)



This is not a talk about evolutionary theory; it is about pedagogy. (We will not discuss



4 My views about evolution are irrelevant. So are yours.





ON HOWEVER CO IN PART 2 WE WHLL TALK ABOUT A **DEEPER CHRISTIAN ENGAGEMENT** WITH SCIENTIFIC THEORIES (!!) IN GENERAL WITH REFLECTIONS ESPECIALLY PERTINENT BIOLOGY.







6. All should agree that we want to:

- Equip students to engage in the conversation
- Enable them to follow the news
- Help them develop critical thinking skills (comparison, analysis, evaluation, recognizing fallacies, etc.)
- Help them understand the issues
- Enable them to think for themselves



Most Evangelicals

narrow/literal hermeneutic



Other Christians

openness to ANE scholarship



Most Evangelicals

conflation of evolution and atheism



Other Christians

atheism distinct from evolution



Science

2-cause evolutionary model (reductive)

Christian Theology

4-cause creation model (includes intentionality)



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1. Teach.

Students should know

- the history of evolutionary theory
- the tenets of evolutionary theory
- the evidence that scientists claim supports the theory



2.

Keep your own views about the theory to yourself, as teachers must in other fields (e.g. government/politics) where there are disputed questions. (They are irrelevant, and can only risk stirring up controversy. At many schools, views about interpreting Genesis would be considered secondary doctrine anyway.)

3. Distinguish between scientific claims (facts, theories) and truth. (And don't get upset when evolution is referred to as a scientific fact, which it is, by definition.)

PROVISIONAL, CORRIGIBLE

SCIENTIFIC FACTS

SCIENTIFIC THEORIES

TRUE, UNCHANGING



4. Distinguish between atheism and evolution. (And acknowledge that plenty of Christians accept evolutionary theory.)



ATHEISM

Christians Atheists **Scientists** Heroes **Bums** Goatherds

EVOLUTION

5. Distinguish between microevolution and macroevolution. (But be aware of sensitivities pertaining to these terms.)









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No one is upset about this.









Macro

Some scientists are upset about this.



6. Distinguish between evolution and the origin of life. (There is a theory about one but not the other, and life must exist before it can evolve.)

Evolutionary theory Natural Selection Survival of the Fittest Mutation Variation

Evolutionary Theory



Theories on Origin of Life

7. Distinguish between evolution and the age of the earth issue. (Evolutionary theory requires an old earth, but not vice versa.)

Evolutionary theory Natural Selection Survival of the Fittest Mutation Variation

Evolutionary Theory



Hold old is it?

8. Recognize the historical context of Big Bang theory (1928).

(The first scientific evidence that the universe had a beginning!)



9. Encourage students to ask questions. Nothing should be off the table.



10. Discuss the evidence—but do so carefully.

- Scientists, in general, are not in disagreement, only American evangelicals are.
- Avoid implying that the evidence is easily discredited; it isn't. (Scientists are not stupid.)
- Data from fossils and genetics are a mess and are a problem for all theories, including YEC. (FYI, there are artifacts from 8000 y.a. in the British Museum).
- Balance specific claims of weakness with scientists' responses to the claims.



11. Don't drag in the culture war.

- Scientists are not using evolution to destroy Christian faith.
- Our enemy is not scientists and not evolution; it is the Slanderer (who roams around seeking whom to devour).
- Avoid associating evolution with cultural decay. (Correlation does not imply causation.)
- Avoid citing the church fathers; they are pre-Copernican, and not relevant to this discussion.

NO



12. Discuss options for interpreting Genesis.

- Literal (YEC, AIG, ICR). Note that although popular among evangelicals, this position has zero scientific credibility, and is out of step with massive amounts of recent Christian scholarship. Note also that people are doubling down as part of the current culture wars. Caveat magister.
- Concordist (RTB). (Caveat magister here too.)
- Creation myth/song (Young & Stearley).
- Cosmic framework/temple (Walton).





13. (Baker's dozen!) Have students read books presenting different views and report the authors' arguments to the class.







Christian Reflections on Scientific Theories Preliminary Definitions



Christian Reflections on Scientific Theories Preliminary Definitions Aristotle's Four Causes

 "In the premodern vision of things, the cosmos was seen as an inherently purposive structure of diverse but integrally inseparable rational relations —the Aristotelian *aitia* or *causae*, for instance, which are nothing like the uniform material 'causes' of the mechanistic philosophy—and so the natural order was seen as a reality already akin to intellect." (DB Hart, *Theological Territories*, 154)



Christian Reflections on Scientific Theories Preliminary Definitions Aristotle's Four Causes (Hart: *causae* = rational relations) Material Cause—the substance of a thing (today, we would refer to its N matter and energy) Efficient Cause—the mechanism by which a thing comes to be Formal Cause—the idea of a thing, in the mind of an intelligent being, that leads to the thing's existence as itself Final Cause—the purpose (telos) of a thing, implying the intentionality of a purposer







All scientific theories are reductive, by the standards of the science of the post-Enlightenment era, because they are limited to efficient and material causation only. This is how science is defined today.
A Christian view of the world necessarily involves formal and final causation as well, because it involves the ideas, intentionality, and purposes of the creator.

When I look at your heavens, the work of your fingers, the moon and the stars which you have set in place (Psalm 8)



"Once the notion of causality has been reduced from an integral system of rationales to a single kind of local efficiency, it becomes mere brute fact, something of a logical black box; description flourishes, but only because explanation has been left to wither." (DB Hart, *Theological Territories*, 129)

I made the earth and created man on it; it was my hands that stretched out the heavens and I commanded all their host. (Isaiah 45)

Richard Feynman:

"While I am describing to you *how* Nature works, you won't understand *why* Nature works that way. But you see, nobody understands that." (QED, 10)

Richard Feynman, Nobel Prize in Physics, 1965

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That's Right

on the deepest questions,

scientists—and perhaps teache

What We Know

What We Know (exaggerated)

... but teachers rarely communicate this to students, thus giving a false impression about the

Questions science can't answer-and never will:

Before we launch: 1. A note to skeptics who like identifying God-of-the-gaps arguments ... You might want to claim that one or two of the following are such, but the bulk are definitely not....

2. The following 35 questions are numbered. Make note of the numbers of any questions you would like to discuss further during Q&A.

Questions science can't answer-and never will:

Key people we are tracking in this presentation: David Bentley Hart (Christian; world-class theologian, philosopher, essayist) Thomas Nagel (atheist; world-class philosopher) Additional contributors to this conversation you may want to look into:

 Paul Davies (agnostic; physicist) Antony Flew (atheist converted to Christianity; philosopher) • Robert Spitzer (Christian; priest, apologist) • Walker Percy (Christian; author, physician)

Questions science can't answer—and never will:

1. Why do things exist? (And what sustains them in existence?) (Leibniz: Why is there anything at all, and not — much rather nothing? Hart: This is an enigma, and an infinite question.) 2. What is light? 3. What are electrons? (Quarks too, for that matter.) 4. What is energy? 5. What happens when light encounters matter? (Feynman: no one understands; we can only describe) 6. Why are there physical laws of nature? (Where did they come

from? How did they arise?)

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Questions science can't answer—and never will:

7. Why can mathematics (imagined, in our minds) describe nature (not in our minds)? Witness the stunning application of the SU(3) Lie Group to the Standard Model, leading to the prediction and discovery of quarks, and the 1964 prediction of the Higgs Boson, subsequently discovered in 2012. (Eugene Wigner: "The Unreasonable Effectiveness of Mathematics") 8. Why does beauty correlate to mathematical usefulness when modeling nature? (Polkinghorne: beauty as a research criterion) 9. How could conditions for the Big Bang occur? Roger Penrose's improbability value for the low-entropy condition at the Big

Questions science can't answer-and never will:

11. How is it that the entire creation seems to be governed by (And Bohm's hidden variables hasn't seemed to help.) pattern with electrons, and only if no one is looking? (Feynman: "the only mystery")

- 10. How can quantum entanglement happen? (Weird, but it does.)
 - quantum probabilities? (Einstein: God does not play dice)
- 12. Why does the double-slit experiment produce an interference
- 13. Why is a conscious observer required for the collapse of a wave function to a single reality? (And what does this mean?) 14. Why does the world possess a hidden mathematical structure that cannot be observed by human perception alone?

Questions science can't answer—and never will:

15. How did life arise? Note: For a rudimentary form of life to be initiated, the organism must possess, at a minimum: ability to replicate its genetic material "autonomic" genome-replication function instinct and ability to consume nutrients and/or energy somehow Instinct and ability to reproduce, including ability to manufacture molecular components for offspring instinct and ability to take action to avoid harm and stay alive functionality for homeostasis, including chemical regulation and the ability to metabolize and process food

Questions science can't answer—and never will:

15. As well as:
a nearby source of food
molecular complexity to perform all the above
genome sufficiently complex to encode for all the above
instructions to switch all these "on" and keep them on.

Questions science can't answer-and never will:

living person and a fresh corpse.) 17. How can the existence of consciousness be explained? certainly false")

19. How can the existence of triadic communication be

- 16. What is the difference between life and non-life (Stephen J. Gould: No scientist can say what the difference is between a
- 18. How can the existence of intentionality be explained? (Nagel: "the materialist neo-Darwinian conception of nature is almost
 - explained? (Walker Percy: It cannot evolve from dyadic.)

19. How can the existence of triadic communication be explained? (Walker Percy: It cannot evolve from dyadic.) Percy's description from semiotic theory:

Thing 2

Thing 1

Olution

Dyadic Communication

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utterer

Triadic Communication

Questions science can't answer-and never will:

thought, value, reasons, beliefs, desires, and qualia? longing for Love, Goodness/Justice, Beauty, Home) works?

23. How are eyes and brains able to generate a live 3D experience of the environment replicated in the minds of conscious beings?

- 20. How can the existence be explained of meaning, purpose,
- 21. Why is there "the natural intentionality of the rational intellect toward Truth"? (Hart) (Spitzer adds the universal human
- 22. Why is the world intelligible, i.e., why would evolution give us the power to understand anything about how the world

Questions science can't answer—and never will:

24. Why do we experience beauty in nature (sunsets, flowers, etc.), while all other animals exhibit indifference?25. Why do we see ourselves in a mirror? (Percy: A chimp looks behind the mirror to find the other chimp.)

Questions science can't answer—and never will:

26. Why have traits "evolved" far beyond survival and fitness: The colors on a blue jay wing (Stephen Weinberg) • The extravagant peacock feathers (made Darwin ill to look at them; numerous competing theories) The stupendous prowess of birds in flight (This cannot be simply waved away, especially given the unique features of avian physiology.) The human mind and dexterity (ability to invent and perform. vector calculus, threading needles, playing Liszt, watchmakers, Michelangelo, super polyglots). The incredible capabilities of savants (Stephen Wiltshire drawing London from memory, etc.) Bizarre feats of human memory (70,000 digits of pi, etc.)

Questions science can't answer-and never will:

27. How could human evolution produce both Hitler and Mother Teresa? (You can't have it both ways.) Also, all humans do some good and some bad (Why? And why is this limited to humans?). Note also that we can decide whether to do good or bad. (All in all, an evolutionary explanation for morality is far from available.) meiosis be explained? (Every appeal to chemical signaling, gradients, etc., seems just to make the problem worse.) scientific discovery? (The Fitness of the Environment, The

28. How can the beyond-stupefying dances of mitosis and 29. Why is the universe fine-tuned for both complex life and **Privileged Planet**)

Questions science can't answer—and never will:

30. How is it that the incredibly unlikely complex eye supposedly evolved 40 times independently, while the long giraffe neck evolved only once, even though lots of animals eat foliage from trees? (This makes the evolutionary accounts seem like just-so stories.)

31. How can animal intentionality be explained (i.e., intentionality without rationality)? (Pelicans and vultures riding thermal currents, and clearly doing it for *fun*—with pelicans even doing it in *formation*, also birds dancing, birds singing year-round, birds snow skiing, whales and dolphins playing, cows frolicking, puppies playing. But out of the entire animal kingdom, only humans have rationality.)

Speaking of bird song:

Are you willing to say bird song is meaningless? One cannot construct an explanation for bird song—and its meaning—without appealing to all these: • intention • aesthetics joy pleasure • praise Creator

Questions science can't answer-and never will:

32. Why do the organs and systems in living things seem so to discuss organs etc. without referring to purpose.) microorganisms.) 34. Why are we affected deep in our souls by art, calmed or like to dance.) 35. How does memory work? Saying that memories are

- purposeful if they arose merely by chance? (It is difficult even
- 33. Every organism seeks to stay alive and reproduce but why? (This too is intentionality, and includes even plants and
 - delighted by music, compelled to burst into tears at hearing a poem, etc.? (And nothing else does these things, except birds
 - "recorded in synapses in the brain" is absurdly reductive.

Speaking of memory:

Every memory (i.e., the continuous stream of it) contains 4D color video, with a soundtrack; and with smell, tactical feeling, emotional states, time of day, time of year (season); and with how old you were, whether you had learned to play the plano yet, where other people were at the time, whether you were unemployed at the time, or ill that day, whether you had had a good meal that morning or just a bowl of Rice Krispies (and maybe remembering the Rice Krispies ad you saw on TV back in 1968), and how tired you were, and whether you had taken a shower that morning. And so on.

Consciousness in humans (and maybe other species) means that every memory encompasses all others.

Where were you when I laid the foundation of the earth? Tell me, if you have understanding, who determined its measurements—surely you know! Or who stretched the line upon it? On what were its bases sunk, or who laid its cornerstone, when all the morning stars sang together and all the sons of God shouted for joy? (Job 38)

This is not only God telling Job that Job doesn't know. It is God telling humans what humans will never know (at least not in this age!).

- Hart and Nagel: The existence of mind, consciousness, and intentionality cannot be explained in terms of the materialist paradigm (material and efficient causes only).
- Hart and Nagel: Mind and intentionality are pervasive in nature.
- Hart: Nature possesses a rational structure analogous to thought, i.e., like a mathematical equation or sentence.
- Hart: Formal and final causes are indispensable for understanding the world we live in.

Readings:

David Bentley Hart, *Theological Territories* (2020) "Where the Consonance Really Lies" "Should Science Think?" "Consciousness and Grace" "A Sense of Style"

David Bentley Hart, The Experience of God (2013)

Thomas Nagel, Mind and Cosmos (2012)

- **Other Resources:**
- Robert Spitzer, New Proofs for the Existence of God (2010)
- Paul Davies, God and the New Physics (1983), The Mind of God (1992), *Cosmic Jackpot* (2007)
- Antony Flew, *There Is a God* (2007)
- Walker Percy, Lost in the Cosmos (1983)
- YouTube: "Stephen Wiltshire: The Human Camera" (44 min)
- Edward Frenkel, Love & Math (2013)

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