

Science and Belief in God: Concord, not Conflict

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Introduction

- It is widely held that the belief in supernatural entities, like God and the soul, is incompatible with a modern, scientific viewpoint.
- I will examine the relationship between religion and science in Western history, as well as the question of whether these connections are mere accidents or are rooted in the very essences of science and theism

Overview

- I. What is Science?
- II. Is Science Unique?
- III. Is Science Unified?
- IV. Does Science Depend on Theism?
- V. Conclusion

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WHERE THE CONFLICT REALLY LIES



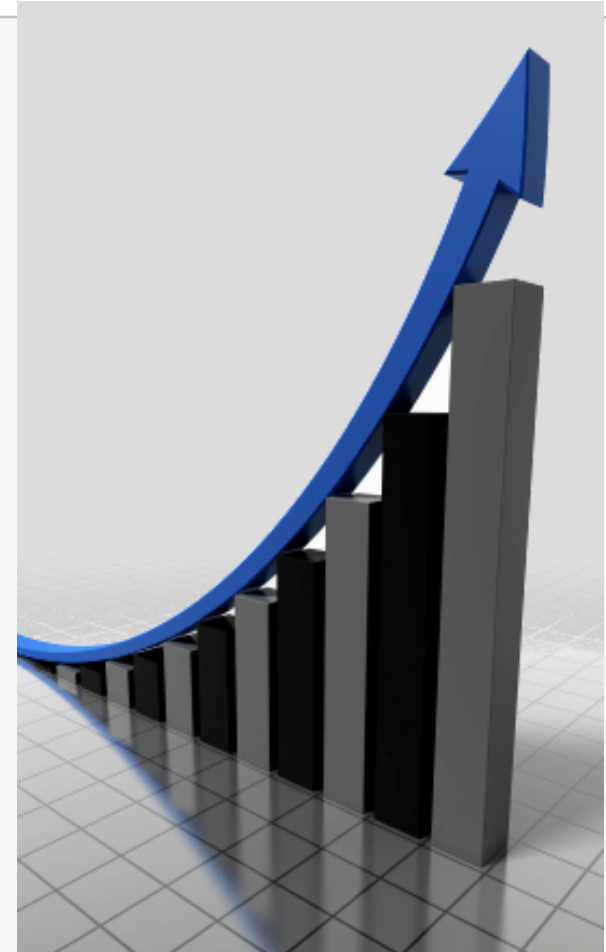
SCIENCE, RELIGION, & NATURALISM

ALVIN PLANTINGA

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I. What is Science?

- Four Definitions:
- Definition 1: *Science* refers to the exponential explosion in knowledge of all kinds experienced over the last several hundred years, necessitating the re-evaluation of all prior beliefs.



Four Definitions

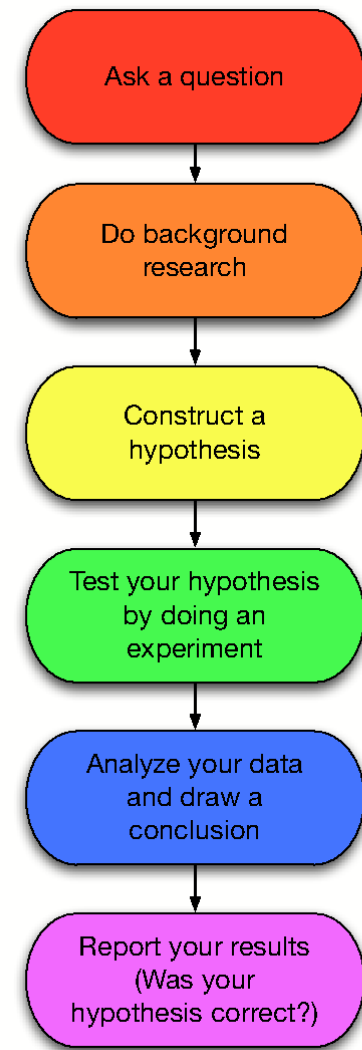


Definition 2: *Science* is a social institution that developed in 17th c. Europe and has spread throughout the world over the last several hundred years, consisting of a new priesthood, a “magisterium of fact” (in Stephen Jay Gould’s ominous phrase), supplanting—or at least severely limiting—the magisterial role of the Church.

Four Definitions

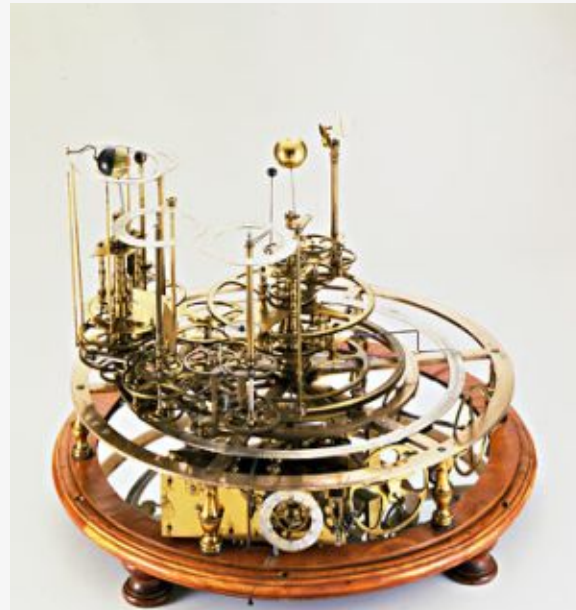
Definition 3: *Science* represents a radically new and vastly superior way of knowing, embodied in something called “the scientific method,” which was discovered or invented in Europe during the seventeenth century.

The Scientific Method



Four Definitions

- Definition 4: *Science* is the history of the inexorable advance of materialistic philosophy against all rivals, including theism.

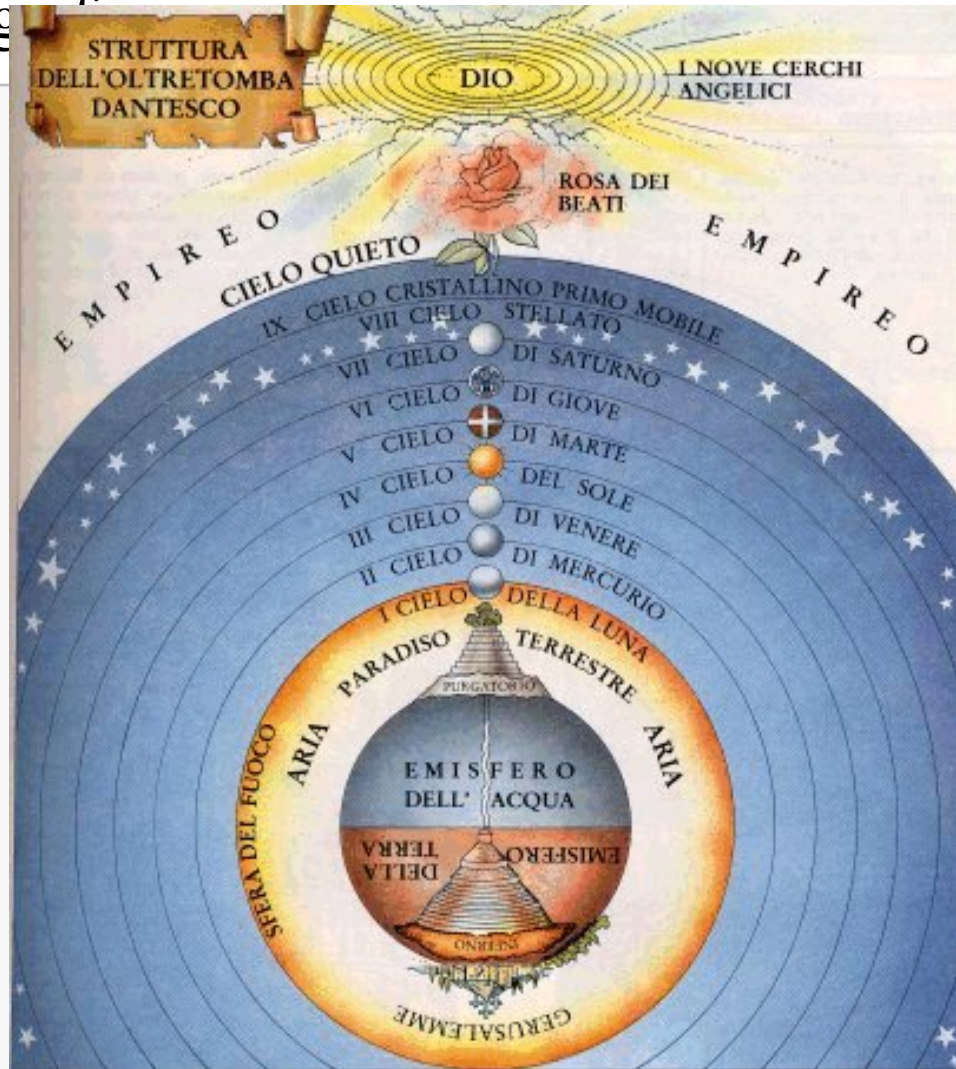


Definition 1

- *Science* refers to the exponential explosion in knowledge of all kinds experienced over the last several hundred years, necessitating the re-evaluation of all prior beliefs.
- The myth of the so-called “Copernican revolution”.

Man was not the center of the ancient universe.

The physical smallness of mankind doesn't entail its cosmic insignificance.



Impact of Copernicus?

- From the ancient perspective, it was the periphery of the cosmos, and not the center, that took pride of place. The outermost sphere was the source of all terrestrial life and motion. The center was a kind of sump in which all that was gross and base settled.

Definition 2

- *Science* is a social institution that developed in 17th c. Europe and spread throughout the world over the last several hundred years, consisting of a new priesthood, a “magisterium of fact”.
- True, as a matter of sociological fact. Does the legitimate authority of scientists extend to matters of religion, metaphysics?

Definition 3: Is Science Unique?

- *Science* represents a radically new and vastly superior way of knowing, embodied in something called “the scientific method,” which was discovered or invented in Europe during the seventeenth century.

The Positivist Myth (part 1)

- The scientific method was the creation of a small group of 17th century investigators, who broke decisively from the past, and who began, for the first time, to interact with the world in a distinctively scientific way.

Positivist Myth, parts 2 & 3

- The scientific method they discovered is uniquely objective, consisting of an impersonal method—in effect, the construction of an investigative mechanism—depending in no way on the history, ideology, or private insight of the practitioner.
- The credibility of this scientific method as a revealer of truth has been abundantly validated by the pragmatic successes and technical powers it has engendered.

Pierre Maurice Marie Duhem

- Discovered the medieval and Renaissance precursors to the new physics of the 17th century, especially the development of impetus theory and other alternatives to the Aristotelian notion of natural place by Jordanus de Nemore, Jean Buridan, Nicholas Oresme, and Leonardo da Vinci, among others.

Willard van Orman Quine

- The difference between science and common sense is a matter of degree, not kind.
(Ontological Relativity and Other Essays, 1969.)
- When we are simply overawed by the technical prowess of scientific culture, we partake in a kind of superstitious cargo cult, like the Pacific islanders who worshipped Western traders as gods.

No such thing as “The Scientific Method”

- On the one hand, there is a cache of rules of thumb, platitudes, and homely advice, drawn from common sense and tradition.

- On the other hand, sets of specific methods and approaches that define specific research programs in science (statistical tests for significance, double-blind experiments, and reliance on well-established scientific instruments).

The Failure of the Quest for a “Demarcation Line”

- Verifiability
- Falsifiability
- Testability
- Repeatability
- Quantifiability
- Operationalizability

Falsifying Falsificationism

- First, it is clear from history that scientists, practicing good science, do not immediately throw away a well-established theory at the first sign of trouble, including even falsified predictions by the theory.
- Second, as Duhem and Quine both demonstrated, no theory is ever simply falsified by a result.

Falsificationism, cont.

- Since no empirical result is ever absolutely conclusive, it is also impossible to falsify anything absolutely, since an absolute falsification would have to be based upon an absolutely conclusive foundation.
- The value of Sir Karl Popper's bromide.

Science is not Unique

If science really were a distinctive mode of knowing, demonstrably superior to common sense and all other methods, we might have an intellectual duty to base all of our beliefs on science alone.

However, since science cannot be demarcated from the rest of knowledge, our ordinary ways of warranting beliefs are under no such cloud of suspicion and remain innocent until proven guilty.

Is Science Unified?

- Definition 4 of science assumes that the history of science, beginning with Thales and Democritus in ancient Greece and including our recent past, has been one long train of successes on the part of an increasingly materialistic and reductionistic theory of the world.

The Unity of Materialist Science

- The materialist argument:
 - “An intelligent student of intellectual history, surveying an unbroken string of victories on the part of the materialists over their supernaturalistic opponents cannot help but find theistic speculations incredible.”

Recent history: 1950s until now

- The confident predictions of unity-of-science enthusiasts of the 1950s have not been borne out.
- We have not found ways to derive the laws of biology, psychology and the other so-called “special sciences” from the master science of fundamental physics; in fact, new discoveries have made any hope that we might do so seem ever more far-fetched

A Tale of Two Titles

- Putnam and Oppenheim, “The Unity of Science as a Working Hypothesis” (1958)
- Fodor, “Special Sciences: The Disunity of Science as a Working Hypothesis” (1974)

The Emergence of Information

- A non-physical entity.
- Plays an increasingly central role in biology, cognitive psychology and linguistics.

Three Major Strands in History of Science

- (1) a Platonic-Pythagorean mathematical realism,
- (2) Aristotelian teleology,
- (3) Democritean (atomistic) and Empedoclean (non-atomistic) versions of materialism.

1. Faith in Mathematics

- Ancient atomism had proved a scientific cul-de-sac, effectively fruitless after the time of Archimedes and never producing a theory of motion.

Faith in Mathematics

■ Mathematical physics became possible only when Christian thinkers, influenced by Plato's *Timaeus* and, even more importantly, the *Wisdom of Solomon* from the Septuagint version of the Bible (which taught that God has “disposed all things in measure, number and weight”), turned to the study of natural phenomena with a faith in the mysterious, even mystical, power of mathematics to reveal the essence of reality.

■ Kepler's discovery of elliptical orbits depended on a difference of eight minutes of arc in the orbit of Mars.

The Expectation of Precision

- In fact, these Christian thinkers went far beyond their Platonic roots in coming to expect absolute precision in the world.
- Unlike Plato's demiurge, who did his best to order recalcitrant matter, the Christian God created matter itself and could, therefore, be expected to have successfully imposed a perfectly exact form upon it.

2. Heritage of Aristotle's Teleology

- Harvey discovered the circulation of the blood because he believed in a divine architect who had created all things “for a certain purpose, and to some good end.”
- To identify a protein as an “enzyme” or a DNA molecule as a “code” is to use irreducibly teleological concepts, as is any reference to adaptations or disease.

Natural Purpose in Physics

- The teleological tradition lives on in the form of so-called “variational principles,” or “least action principles”.
- From such principles, we can derive the laws of: Newton’s mechanics, Maxwell’s electromagnetic theory, Einstein’s general relativity, and modern quantum mechanics (Feynman).

3. Ancient Materialism vs. Modern Quantum theory

- Quantum theory lacks all four of the essential characteristics of ancient materialism:
 - the absence of mathematical realism,
 - the insistence upon explanation in terms of paradigmatic physical interactions, like collisions, pushings and pullings and other localizable events,
 - the rejection of teleological explanation, and
 - a rejection of holism (i.e., the priority of the Many over the One).

Christian Materialism

March 7, 1277, Étienne Tempier, bishop of Paris, condemned a set of theses of Aristotelian physics as wrongfully imposing limits on God's omnipotence.

Tempier's condemnation of Aristotle coincided with the rise of a new voluntarism in theology, which meant that Christians had to rely on observation and experiment to discover how in fact God had exercised his sovereign freedom.

Boyle, Christian materialist

- Boyle promoted an atomistic, corporeal theory of the world because he regarded the neo-Platonic tendency to introduce intermediary spiritual forces into our picture of the world as detracting from the honor of God as the sole author and governor of nature.
- For Boyle, the universe was not God, but rather a perfectly consistent artifact.

Theistic materialism is superior to the atheistic version

The atheist has no explanation

- for the unity of the physical universe.
- for the amazing consistency, across space and time, of the relatively small number of natural kinds.
- for the simplicity and mathematical elegance of the fundamental laws of matter.
- of how human beings come equipped to understand the physical world's fundamental principles.

Science Depends on Theism

- It was from the perspective of theism—and from the perspective alone—that it was predictable that science would have succeeded as it has.
- Why did science arise in Europe in the 13th-19th centuries, instead of India, China, the Islamic world, central America?

Role of Christianity

- Without the faith in the rational intelligibility of the world and the divine vocation of human beings to master it, modern science would never have been possible:
 - Alfred North Whitehead, *Science and the Modern World*,
 - Joseph Needham, *The Great Titration: Science and Society in East and West*

More sources

- Michael Foster, “The Christian Doctrine of Creation and the Rise of Modern Science,” *Mind* 43 (1934): 446-468; and “Christian Theology and the Rise of Modern Science I and II,” *Mind* 44 (1935):439-483 and *Mind* 45 (1936):1-27.
- Stanley L. Jaki, *The Road of Science and the Ways to God*
- Eugene M. Klaaren, *Religious Origins of Modern Science*

Seven theological preconditions

- 1. The belief in the intelligibility and mathematical exactitude of the universe, as the artifact of a perfect Mind, working with suitable material that it has created *ex nihilo*, and the closely connected Hebraic conception of God as a law-giver.
- The idea of a “law of nature” was introduced by Christian theologian Basil of Caesarea (329-379), *The Six Days*.

Six theological preconditions

- 2. A belief in the fitness of the human mind, created in the image of God, to the task of scientific investigation, conceived of as a *vocation given by God*.
- 3. The need for observation and experiment to discover how in fact God has exercised his sovereign freedom and absolute omnipotence in crafting and legislating for the creation.

Seven theological preconditions

4. The *disenchantment* of the world by theism, clearing away the potentially discordant divinities and semi-divinities of polytheism and animism.
5. The conception of nature as a divine “book”, parallel to the Bible.

Seven Theological Preconditions

6. The linear view of time, beginning with creation and passing through the unique, unrepeatable events of “the divine comedy,” in place of the otherwise ubiquitous conception of a cyclical Great Year. The possibility of progress.

7. The elevation of the dignity of matter and of manual work, a consequence of the theological doctrine of the Incarnation (Jesus as God in human form), especially given Jesus’ occupation as a carpenter or stone cutter.

Alvin Plantinga

- Chapter 10 of *Warrant and Proper Function* (1993); Chapter 10 of *Where the Conflict Really Lies* (2011).
- Demonstrates that scientific materialism, without a Designer who intended man to be equipped with an aptitude for truth, leads inexorably to an epistemological catastrophe, the “epistemic defeat” of all the materialist’s aspirations for knowledge

Plantinga's Argument

The materialist must believe that humanity is solely the product of an undirected and unplanned Darwinian process—random changes culled by natural selection.

Natural selection cares only about behavior that promotes survival and reproduction: it has no interest in truth as such. There is no good reason to believe that an aptitude for truth is the only way, or even an especially likely mechanism, for producing survival-enhancing behavior.

The materialist's quandary

- Lacking any explanation for his reliability, other than appeal to dumb luck, the materialist occupies a position that is untenable for the purposes of asserting claims to scientific knowledge.

My argument in *Naturalism: A Critical Appraisal* (2000)

- 1. We select theories on the basis of their ‘beauty’ (elegance, simplicity, symmetry): Steven Weinberg, *Dreams of a Final Theory*. The data alone never suffice.
- 2. Knowledge depends on a reliable mechanism: a causal explanation of how our beliefs track the truth.
- 3. Only a supernatural cause could bias the laws of nature toward beauty, simplicity.

Science vs. Materialism

- Materialism, therefore, can draw no support whatsoever from modern science, since scientific realism entails that materialism is false.
- If scientific theories are treated as mere useful fictions, science would have no bearing on the truth or falsity of materialism at all.

Science supports theism

- By contrast, theists can point to the success of science as the confirmation of their metaphysical position, the verification of a daring prediction made by theists hundreds of years ago.

Conclusion

- There is a price to be paid for scientific realism, for the conviction that our scientific theories provide models of the real world, models that we have some reason to believe may be approximately correct.
- This price is our admission that the physical realm does not exhaust reality, but that it is instead the artifact of a reasonable God who has fitted us to the task of investigating it.