SCIENCE VERSUS RELIGION: A FALSE DICHOTOMY?

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The assumption that science and religion are in conflict seems to underlie much of today’s discussion about such matters, but is it a valid one? Does such an oversimplified “war” metaphor encourage us to ignore important details?

Using historical examples from Western science and Western Christianity (the predominant religion in the Western world), this article will investigate the issue of “science versus religion” through the general semantics technique of dating. This technique involves attaching dates to our evaluations of people, objects, and situations as a reminder that change occurs over time — e.g., John Doe (2006) is not John Doe (2005). Its use can help us to remember that if we want to better understand people, objects, and situations in the present, it makes sense to look back at their past.

To begin our investigation let us examine some ideas from probably the most influential and important Christian theologian of all time, St. Augustine. (1)

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Science versus Religion (fourth and fifth century) — Faith and Reason

St. Augustine (354-430) was born in North Africa to a Christian mother and a pagan father. He abandoned Christianity because its teachings seemed uncertain or illogical and the Bible seemed full of contradictions and nonsense. After studying Classical philosophers and traveling to Italy, Augustine found an intellectual approach to Christianity (through Neo-Platonism) and biblical exegesis that pleased him, and he eventually was baptized.

St. Augustine argued for four points that not only became fundamental to Christian theology but are key to the science-religion interaction. They are:

A. The doctrine of the unity of truth — one and the same truth applies to both theology and natural or philosophical knowledge. Contradictions between the two must be resolved intellectually by the use of reason.

B. The doctrine of the two books — the Book of Scripture (the Bible) and the Book of Nature (the created world). These are two complementary ways that God reveals himself to humans.

C. The doctrine of exegesis — both books require careful interpretation. For example, biblical passages have layered meanings: a literal, an allegorical, an anagogical, and a moral meaning. Because biblical interpretation is very difficult, our explanations of some passages should be held only provisionally.

D. In terms of the pursuit of religion versus the pursuit of science or philosophy, religion has primacy, but scientific knowledge is an important handmaiden that assists true religion.

Science versus Religion (seventeenth century) — the “Galileo Affair”

The “Galileo affair” is an often-cited incident in the history of science-religion interactions. Far from being a simple case of science versus religion, it is highly complex and brings up many important philosophical, scientific, and other issues that can best be understood in context.

A key antecedent to the Galileo affair was the publication by Copernicus, in 1543, of his De revolutionibus orbium coelestium, which argued that, contrary to the prevailing Ptolemaic-Aristotelian system, the Sun was at the center of the universe (heliocentrism) and the Earth revolved around it (geokineticism). For a variety of reasons, his theory found little acceptance.
In 1613, Galileo wrote a letter defending geokineticism and arguing that Scripture had to be interpreted in light of scientific knowledge. He further stated that the biblical story of Joshua’s stopping the sun to lengthen the day could be explained thanks to Galileo’s discovery of the Sun’s rotation, which he suggested, powered the planets. In offering to interpret the Scriptures, Galileo was exceeding his scientific expertise.

In 1615, a Neapolitan priest named Paolo Antonio Forcarini published a book reinterpreting the Bible to be compatible with Copernicanism (this shows that there were clergy on both sides of the issue). He sent a copy to Cardinal Roberto Bellarmino, a highly important theologian, who had given Galileo a verbal warning not to continue to hold Copernicanism as literally true. Bellarmino praised Forcarini and Galileo for speaking “suppositionally and not absolutely,” because declaring the absolute truth of the hypotheses would be “dangerous.” He also stated that if there were an undeniable demonstration of the Earth’s motion, then Scripture would have to be reinterpreted very carefully.

But Galileo did not have proof of the earth’s motion. His favored “proof” — that the tides are caused by the motion of the Earth — was actually incorrect. Although Galileo was ultimately right about heliocentrism, he was wrong to claim he had sound proof of it. Chaos would result if the Bible had to be reinterpreted for every scientific proof.

In 1632-1633, Galileo published a book, *A Dialogue on the Two Chief World Systems*, which set out arguments for the Ptolemaic and Copernican systems. He put the arguments of Pope Urban VIII on the last page of the book and into the mouth of a fool. The Pope, who was under duress at the time owing to the Thirty Years War and suspicious that Galileo did not reveal to him details of an agreement that he had made with Bellarmino over Copernicanism in 1616, was furious at Galileo for making him look like a simpleton. Galileo was summoned to Rome and questioned. An Inquisition trial was held and Galileo was convicted in June 1633 of “vehement suspicion of heresy.” He renounced the Earth’s motion and spent the rest of his life under house arrest. (In 1979, Pope John Paul II convened a commission to reinvestigate Galileo’s case. Besides an admission of “errors committed” the report contained a reaffirmation of Augustinian principles of exegesis, as upheld by Galileo, and the ultimate compatibility of faith and reason.)

**Science versus Religion (eighteenth century) — Geology and Biblical Chronology**

In the Middle Ages, there was not much reason to think that the Earth and universe were more than a few thousand years old. After all, the Bible was one
of the oldest texts known, and there was no alternative evidence to contradict, or significantly supplement its Old Testament chronology.

However, in the seventeenth century, Nicholas Steno, a Danish convert to Catholicism, studied strata and fossils in Tuscany and he developed geologic theories for their formation. By the end of the seventeenth century, there were attempts to intertwine biblical and geological histories into theories of the earth.

In the eighteenth century, Georges Louis Leclerc Comte De Buffon and Pierre-Simon Laplace proposed new naturalistic theories for origins of the Earth. They progressively increased the age of the Earth, particularly the pre-human period. Such theories were used simultaneously both for and against the reliability of biblical narratives. Some used the findings to reject Genesis entirely, but others saw it as liberating the Bible’s spiritual content by emphasizing its meager value for accurate history and chronology.

Theological divisions over how old the earth was revealed a split between elite and popular opinion. A more educated group applied “higher criticism” (the use of standard textual tools to ask questions about authorship, original context, influences, etc.) to the Bible and as a result they were able to accommodate the new scientific geological findings to biblical descriptions. A less educated group rejected such interpretations and insisted on a literal reading of Genesis. This theological division belies the simplistic notion that there is a single religious response to scientific theories.

Science versus Religion (Nineteenth century) — Evolution

In 1859, Charles Darwin published his epochal On the Origin of Species. Twelve years later he published The Descent of Man. The scientific and theological rejoinders to these works were complex.

Three important features of Darwin’s evolutionary principles were common ancestry, speciation through variation, and natural selection. These ideas impacted theology in diverse ways. For example, there was an impact on biblical authority, specifically in terms of the historicity of Genesis I. Theologians and others who held to strict interpretations of the Bible rejected Darwin’s ideas.

The argument from design (an argument for the existence of God based on the belief that there is a design in the visible world, and thus a designer) was eroded by the notion of random variations and natural selection. On an ethical level, the distancing of God and the notion of natural selection (“survival of the fittest”) were seen as undercutting morality in human relations. The development of the human species from lower organisms was also considered potentially materialistic. (Materialism is a view that material substance is all that exists — no soul, no spirits, no God. The First Vatican Council explicitly con-
demned materialism in 1870. In 1950, Pius XII gave conditional support to evolution, and in 1996, John Paul II declared it “more than a hypothesis.” However, both popes continued the Church’s opposition to materialistic interpretations; the soul exists and is not a product of evolution.) Finally, some theologians found the “lower origins” of man undignified or unsuitable for the *imago Dei*, the doctrine that God created man in His own image.

Contrary to popular opinion, religious leaders were divided in their reception to Darwinism. A number of religious leaders saw evolution consistent with a divine plan and even as *proof* of the divine purpose of the world. Some found in Darwin support for the Biblical teaching that all humankind has a common ancestor (*monogenism*). Liberal theologians, who were anxious to distinguish themselves from conservatives who stuck to biblical literalism, helped to spread evolution. And some conservative theologians, such as the Baptist A.H. Strong, argued that humans are no less human even if evolved from beasts. These different responses and reworkings of Darwinian theory by theologians argue against facile generalizations concerning the interaction between evolution and Christian thought.

**Science versus Religion (twentieth century) — Fundamentalism**

By 1900, most Americans clergy had accommodated some form of an ancient Earth and evolution into their beliefs. The rise of fundamentalism changed this situation.

Fundamentalism (the name derives from a set of twelve tracts, *The Fundamentals*, published between 1910-1915) as a movement began in the early twentieth century. It represents an aggregate of beliefs. These include *naïve literalism* (a belief that the “surface meaning” of the bible is literally true), *biblical inerrancy*, and the residuals of nineteenth century millenarist sects (Millenarism gave rise to many apocalyptic beliefs and movements, including the continuing fundamentalist obsession with the New Testament Book of Revelation).

Fundamentalism is as much a social as a religious movement. It is also a reactionary movement in response to social anxiety over the loss of an old order (a religiously oriented Anglo-Saxon Protestant America) and fear of perceived foes (urban culture, modernity, intellectuals, industrialization, and immigration).

Fundamentalist “hot-button” issues have changed over time. Initial opposition was mainly to higher criticism (evolution was treated benignly in *The Fundamentals*). Evolution became a major issue largely in response to the enormous growth of public high schools between 1900-1920 that exposed rural populations to modern science.
Fundamentalists gained wide exposure in the famous Scopes “Monkey trial” of 1925. William Jennings Bryan, who had begun crusading against evolution in 1922, was a prosecutor in the case and he was humiliated on the witness stand by defense-counsel Clarence Darrow. Due to a legal technicality the issue of whether states could prohibit the teaching of evolution was not settled in the Scopes case.

Fundamentalist opposition to evolution came back in the 1960s. This return was sparked, in large part, by improved secondary school education in the rural South and Midwest, which included instruction on evolution.

The Creation Science Society was founded in 1963 (creation science is based on naïve literalist readings of Genesis 1 and flood geology — the use of Noah’s Flood as an explanation for geological phenomena like mountains, fossils, canyons, etc.). In 1968, that Creation Science Society, and other supporters of creationism, failed to stop the U.S. Supreme Court from overturning a state ban on evolution. After this failure, fundamentalists turned to the *equal-time strategy*. Creation science was promoted as an alternative to evolution.

In 1987, the Supreme Court recognized creation science as religious doctrine, not science. To mask identifiably religious content in order to pass Constitutional muster, *neocreationism*, of which Intelligent Design is a part, was promulgated. That philosophy is currently being advanced by creationists as an alternative to evolution.

Although creationists are a minority of the Christian community, their religious views are disproportionately reported on in the media. That is also the case with scientists who espouse “scientism” — a philosophy that exalts the view of science and scientific inquiry to an *absolutely* predominant position, capable of solving, explaining, and/or passing judgment on everything (in some ways, scientism is equivalent to science as religion). Advocates of fundamentalism and advocates of scientism tend to get more news recognition than theologians and scientists who hold more balanced positions because the media favors publicizing controversy and extreme views.

The Big Bang model of the earth’s creation, proposed initially in 1927 by Georges Lemaitre, a Belgian priest, offers evidence that science and theological views can “peacefully” coexist. The Big Bang model in its final form upholds the Christian notion of a cosmos with a definite beginning and a *creatio ex nihilo* (“creation out of nothing”). This article of faith stresses that God alone is eternal and is the creator of everything. Pope Pius XII embraced the Big Bang model in 1951.
Science versus Religion (the present) — An Overview

Over the last two hundred years science and theology have traveled in opposite directions in terms of professionalization, authority, and status. Scientific activity has been regularized by professionalization, granting it greater authority. Theological activity has become diffuse by decreased ability to professionalize theologians; the result has been lower-level theology and a loss of status and authority. This trend in theology is exemplified by the triviality of the theological content of the anti-evolution debate (biblical literalism) relative to historical theological positions.

In traditional Christian theology, biblical literalism has been a non-issue. Biblical literalism/evolution may be an issue now because people are not familiar with historical and “high-end” theology. For example, the notion of secondary causation suggests that God does not have to directly cause everything. Once God puts things in motion things can happen without divine intervention.

Some scientists, crusading for materialism and atheism, have fanned fundamentalist fears. Such scientists may have forgotten the difference between a professional policy of not invoking supernatural action and a personal credo against everything supernatural. While it is true that science has furnished theology with a more verifiable sense of man’s place in the world (e.g., scientific evidence showing progressive increases in the age of the earth and size of the universe has progressively undercut literalist biblical readings), it is also true that Christian theology provided significant institutional support (patronage) for studies of the natural world in the last millennium; the scholastic tradition of disputation was important to the advancement of science; and many founders of modern science were devout religious believers (e.g., Kepler, Copernicus, Galileo, Newton, Boyle).

That theologians and scientists exist in separate “camps” is a relatively recent division. Movement of ideas between theological and scientific thought has been more usually the case. Historical perspective underscores this fact and can allow us to engage in potentially valuable discourse about science and religion on a more thoughtful and productive level.
NOTES

1. The inspiration for this article and much of the information contained in it comes from The Teaching Company lecture series “Science and Religion” (Chantilly, VA: 2006), taught by Johns Hopkins Professor Lawrence M. Principe.

REFERENCES


