

He was the first to use the telescope to study the skies. He was the first to discover the moons of Jupiter, the first to announce spots on the sun, the first to realize that the Milky Way is made up of myriad stars and to suggest that the moon is mountainous. He was also one of the first to say that Ptolemy was wrong and Copernicus was

Can a Scientist Also Be a Christian?

by
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right: The earth did revolve round the sun, not vice versa.

These announcements brought Galileo Galilei (1564-1642), one of the founders of modern experimental science, into conflict with the established church. The Jesuits saw in his teaching the worst consequences for the Church of Rome. The old scientist was tried and forced against his will to recant his teachings. He did so, but was reported to have said under his breath, "But the earth does move." More than 350 years later, in 1992, Pope John Paul II stated that errors were made in condemning Galileo.

The case of Galileo is perhaps the best-known illustration of the tension between science and religion. There were others before and since, but whenever the topic of science and Christianity is discussed, warfare and conflict come to mind. Andrew Dickson White even published *A History of the Warfare of Science With Theology in Christendom* in 1896.

Science in a Christian culture

Although tension marks the relationship between Christianity and science, it is often overemphasized. Indeed as some historians of science have argued,

modern science could have developed only in a culture with a Christian worldview.¹ Christians believe in a *personal* God who is independent of His creation. For animism or pantheism, however, nature *is* god—less than personal, but more than inanimate matter governed by abstract laws. Scrutinizing its secrets would be a fearful undertaking.

Christians believe in an *all-powerful* God who created *ex nihilo* and is in control of nature. Thus, nature is expected to be governed by exact (mathematical) laws. God was free to create in any way He chose, and since His ways are not our ways, our logic is likely to be insufficient for understanding nature. We must observe and experiment to determine how God created. God's power over creation is shared with humanity (Genesis 1:28), so we are expected to study nature. In contrast, other traditions have ideas independent of matter, leading to an imprecise, irrational world. For example, in the Greek system, divine creative activity was limited to what man could logically deduce from general principles; no experimentation was necessary.

Christians believe in a *good* God. His creation is good and worthy of study. Humanity is part of God's good creation. Consequently science should be used to benefit humanity by lightening toil and tedium, and by alleviating sickness through various discoveries. Time is linear and life can be improved. This is in contrast with other systems that see the world as imperfect and unworthy of careful study. Manual labor, including that necessary for scientific discovery, was not respectable. Slaves were expendable, since they did only menial work. Time was cyclic and life was a round of routine.

Christians believe in a *rational* God whose creation is predictable, reliable, and governed by laws. Man was created as a rational being and can discover these dependable laws. The arbitrary nature of the gods of other religions, however, would make the study of natural cause and effect relationships seem futile.

Within this context of a Christian worldview that promotes an openness to study God's creation, there need be no conflict between genuine Christian endeavors and scientific quests. Let us consider some of the great scientists, past and present, who have also been committed Christians.

Isaac Newton

Sir Isaac Newton (1642-1727) is an example of a pre-eminent scientist who was also a devout believer.² He developed theories of light and of universal gravitation, and shared in inventing calculus. An interesting evidence of Newton's religious experience is the list of some 50 of his past sins that he drew up in 1662, such as: "Threatning my father and mother Smith to burne them and the house over them"; "Punching my sister"; "Calling Derothy Rose a jade"; "Having uncleane thoughts words and actions and dremese;" "Making pies on Sunday night;" "Swimming in a kimmel [a tub] on Thy day"; "Idle discourse on Thy day and at other-times"; "Not turning nearer to Thee for my affections"; "Not fearing Thee so as not to offend Thee."

According to John Locke, Newton had few equals in biblical knowledge. Newton organized this knowledge methodically and made certain of his beliefs by setting up well defined rules for interpreting the Bible. Newton believed that he was part of a remnant, chosen by God to restore the interpretation of the Bible. He wrote books on Bible prophecy and on biblical chronologies. He believed that the ancient texts provided scientific information, including a description of a recent creation and catastrophic destructions. Although it was not widely realized until this century, Newton held unorthodox Arian beliefs that led him to consider the worship of Christ to be idolatry. Because of his unorthodoxy he would not accept induction into a religious order at Cambridge and risked surrendering his fellowship.

The *Principia* was Newton's synthesis of the new scientific worldview. In the General Scholium to the 1713 edition, he states that its purpose was to establish the existence of God, to combat atheism, and to challenge the mechanical explanation for the operation of the universe. When Richard Bentley gave the first of the Robert Boyle Lectures to defend religion, he drew heavily on the work of Newton. Newton believed that the universe requires an intelligent Creator, and that it is governed by natural laws set up by God and preserved by supernatural acts of special providence.

Michael Faraday

The example of Michael Faraday (1791-1867) effectively refutes the viewpoint that scientists are opposed to revealed theology.³ Faraday was a leading scientist of his generation. He devised an electric motor, invented the electrical transformer, discovered electromagnetic induction, introduced the field "lines of force," proposed electromagnetic waves, and is now honored by having the unit of capacitance named after him—the farad. He was also a fully committed Christian. As Faraday told Ada, Countess of Lovelace, he belonged to "a very small and despised sect of Christians, known, if known at all, as Sandemanians." He viewed his Sandemanian membership as more important than his career in science.

The Sandemanians accepted the Bible as the basis for all action and as the rule-book for church organization. Throughout their history the Sandemanians endeavored to keep themselves distinct from all other religious groups in the belief that they alone accurately followed the directions given in the Bible. Sandemanians emphasized sobriety and moderation in worldly enjoyments. Admission to the church required demonstration before the assembled congregation of one's faith in the saving grace of God and one's commitment to live in imitation of Jesus Christ. Faraday did all these and served the church as an elder.

In both his science and his religion, Faraday feared "confusion" of any kind and had a strong need to order his environment. He was cautious about the speculative interpretation of experimental facts, just as the Sandemanians were careful to adhere to the literal word of the Bible. Sandemanian "exhortations" consisted of carefully chosen biblical passages strung together with a minimum of connecting material, just as Faraday's scientific papers consisted of carefully chosen descriptions of experimental facts strung together with a minimum of speculative interpretation. His Christianity infused all aspects of his life—spiritual, social, political, and professional.

Other examples from the past

Many other scientists were devout Christians. Johannes Kepler (1571-1630), a German astronomer and mathematician, said that the doctrine of the Trinity suggested to him the three-part heliocentric system of sun, fixed stars, and the space between them.⁴ Blaise Pascal (1623-1662), a brilliant French mathematician to whose work our computer world is much indebted, became a devout Christian in 1654 and continually carried with him a description of that experience. He wrote numerous devotional thoughts in his *Pensées*, such as: "God wishes to move the will rather than the mind. Perfect clarity would help the mind and harm the will."⁵

Robert Boyle (1627-1691), the father of modern chemistry, was well known for his piety and his scruples in matters of religion. This prevented him from taking the oaths required of a president of the British Royal Society. In his will he left an endowment for an annual lectureship to combat atheism.⁶ Nicolaus Steno (1638-1686), a Danish geologist and anatomist, developed principles for describing sedimentary rocks that are still used in geology. In his later life he was ordained a Catholic priest, gave all his possessions to the poor, and finally died from an ordeal of poverty and fasting.⁷ The Swedish naturalist Carolus Linnaeus (1707-1778), founder of modern systematic biology and the binomial naming system, invoked the language of Genesis 1 in his definition of species.⁸

Lord Kelvin [William Thomson] (1824-1907) believed that the dissipation of useful energy is a universal feature as described in Psalm 102:26, "all of them shall wax old like a garment." This theological concept aided him in developing the second law of thermodynamics. On the same grounds, Kelvin believed that life proceeds only from life, that it is a mystery and a miracle, and was designed and guided by a Creator over long periods of time.⁹

James Clerk Maxwell (1831-1879) summarized all of electricity, magnetism, and optics in a few abstract field

equations that still form the basis for electromagnetic theory today. Similarly, his religious beliefs were conceived in somewhat abstract terms after a deep seated and very personal faith commitment in 1853 that caused him to come away from the established churches. Maxwell was sure that the basis of religion did not lie in rationalist elaborations. He freely acknowledged that science should never be considered a guide to religious truth: "The rate of change of scientific hypothesis is naturally much more rapid than that of Biblical interpretations."¹⁰

Louis Pasteur (1822-1895) of France helped lay the foundation for the germ theory of disease and preventive vaccination. He is well known for the pasteurization technique named after him. His experiments helped disprove the idea that life can arise from non-life. He believed there were two distinct domains in human beings: one science and the other sentiment and belief, and "woe to him who tries to let them trespass on each other in the so imperfect state of human knowledge." Pasteur might have given himself up to what he called "the enchantment of Science," but he bowed before a greater Power. "Positivism," he said, "does not take into account the most important of positive notions, that of the Infinite."¹¹

Present-day scientists

Although not often realized, many present-day scientists are also believers. The German-born rocket engineer Wernher von Braun, was director of the Marshall Space Flight Center in the 1960s and an administrator for planning at NASA headquarters until 1972. In a book foreword, he says: "I find it as difficult to understand a scientist who does not acknowledge the presence of a superior rationality behind the existence of the universe as it is to comprehend a theologian who would deny the advances of science. And there is certainly no scientific reason why God cannot retain the same relevance in our modern world that He held before we began probing His creation with telescope, cyclotron, and space vehicles."¹²

James Irwin formed the evangelical High Flight Foundation the year after he walked on the moon. He later led a High Flight expedition searching for Noah's

ark on Mt. Ararat. If he had been able to dialogue with God while on the moon, he would have asked, "Lord, is it all right if we come to visit this place?" He thought God would have answered, "It's all right as long as you give Me the honor."¹³

Walter Bradley is a Senior Research Fellow in mechanical engineering at Texas A&M University who has received several million dollars in research grants. During the past eight years he has lectured extensively on scientific evidence for the existence of God at most of the major U.S. universities.¹⁴ Henry Schaefer, a quantum chemist at the University of Georgia, is a five-time nominee for the Nobel Prize and was recently cited as the third most quoted chemist in the world. *U.S. News & World Report* (December 23, 1991) quotes him as saying, "The significance and joy in my science comes in those occasional moments of discovering something new and saying to myself, 'So that's how God did it.' My goal is to understand a little corner of God's plan."

In a recent book, 60 leading scientists, including 24 Nobel prizewinners, answered questions about science and God. One of them is Arthur Schawlow,¹ a professor of physics at Stanford University and a 1981 Nobel laureate in physics. He says, "It seems to me that when confronted with the marvels of life and the universe, one must ask why and not just how. The only possible answers are religious. . . . I find a need for God in the universe and in my own life."¹⁵

Long ago, the Psalmist recorded a gem of inspiration: "The heavens declare the glory of God; the skies proclaim the work of his hands" (Psalm 19:1, NIV). Nature calls us to recognize its Creator and nature invites us to probe its mysteries. Within the context of that call and that invitation, there need be no conflict between biblical Christianity and science, between faith and reason. A scientist can indeed be a Christian. 

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