

Cosmic Codebreaker, Pious Heretic

Isaac Newton wrote theology and hoped his scientific theories would help people believe in God. But he harbored a deep secret....

Karl Giberson

October 1, 2002

Born prematurely on Christmas Day 1642, the year of Galileo's death, Isaac Newton was sickly and not expected to live. He spent the first few days of his life in a shoebox behind the woodstove. His father had died a few months earlier, and while little Isaac survived the sicknesses of infancy, he endured a series of childhood traumas, including abandonment by his mother to his grandparents, that left him withdrawn and solitary. Eventually he came to believe that thinking about nature was of far more importance than social distractions like marriage, children, or even friends.

As a young man, Isaac proved incompetent on the farm, once leading a bridle to the barn, unaware that the horse had escaped. Fences he was in charge of were always falling down, and court records chronicle numerous fines he received for allowing livestock to trample the neighbors' property.

More at home in the world of books, Isaac ended up in 1661 at Cambridge University, where the field hands on his farm had long said he belonged. He graduated without fanfare in 1665.

To escape the plague, he returned home for two remarkable years. Out of this brief seclusion came what was essentially a set of blueprints for changing the world: his theory of universal gravity and a number of major contribution to optics. But no one knew, yet, what the daydreamy young man was up to.

Newton returned to Cambridge University in 1667 and was soon, at age 26, Lucasian Professor of Mathematics. His star continued to rise as he made important scientific contributions, explaining everything from the motion of the planets, to the swing of a pendulum, to the formation of rainbows. Or at least explaining such things to himself, as the lectures he was required to give were often delivered to an empty hall.

After the publication of his notoriously difficult book known as the

Principia, a Cambridge student pointed at him and said, "There goes the man that wrote a book that neither he nor anyone else understands."

Despite his general disinterest in explaining his ideas to the public, Newton's work greatly impressed his fellow members of the Royal Society, and by mid-career he became very famous. But he harbored a dark secret that had the potential to bring his rising star plummeting to earth.

Shortly after his widely acclaimed invention of both a remarkable telescope to collect light and an even more remarkable theory to explain light, Newton embarked upon a curious voyage of theological inquiry. The reasons remain hidden but were probably motivated by his impending need to be ordained in the Church of England, if he were to continue to hold the Lucasian Chair of Mathematics.

Whatever the reasons, Newton began a sustained reflection on the Christian doctrines and decided that the Anglican status quo was a thorough corruption of the true, original Christianity. These considerations led him to write over a million words on theology and biblical studies—more than he wrote on any other subject. Newton's theological investigations convinced him that the doctrine of the Trinity was bogus, a successful deception by St. Athanasius in the fourth century. Newton argued that the Scriptures had been altered and early Christian writers had been misquoted to make it appear that Trinitarianism had been the original faith.

He became repelled by what he perceived as the false religion that surrounded him—an idolatrous faith that worshiped Christ as God, when he was but a mediator between God and man. Newton became convinced that the Roman Catholic Church, which had perpetrated the fraud, was the great whore of Babylon. To accept ordination into the Anglican Church would be to "worship the Beast and his image and receive his mark."

So Europe's greatest scientist began to make plans to be unemployed. In January 1675 Newton wrote to the Royal Society asking them to suspend his dues, anticipating that he would soon

be unable to pay them. Newton's prestigious Cambridge University chair was located at Trinity College, no place for a Unitarian. Politics, however, allowed him to keep his post. Being the most famous scientist in the world had its perks.

Though Newton was far from orthodox, he was deeply religious in a number of important ways. He had been involved in distributing Bibles to the poor. More important was the way he attempted to reconcile his science with his religion. Newton and the Rev. Richard Bentley (1662-1742) exchanged a number of letters on whether the universe, as disclosed by the new physical theories, evidenced design. In one of these letters Newton wrote, "I had an eye upon such Principles as might work with considering men for the belief of a Deity."

A popular misconception is that Newton espoused a purely mechanical model of the universe, theologically deistic, requiring of God nothing more than pushing the "start" button. While this is the way things unfolded over the next century, Newton was in no sense a deist. In fact, as is often the case with the founders of great traditions, Newton was not even a Newtonian. His work did lead to what become known as a mechanical description of nature, but this was far from how he saw it; tellingly, the French philosopher Descartes objected to Newton's model because it was not mechanical enough.

Newton's scientific contributions are spread across a number of important works, any one of which could have established his greatness. But it was the *Principia* that most elicited the awe of a generation of thinkers raised on the simple, earth-centered cosmos of Aristotle. It is here that we find the birth of the science of mechanics, that extraordinary union of pure mathematics and careful observation that became the model to inspire science for more than a century. Newton here communicated empirical observations about the natural world, like the fact that bodies of different weight fall at the same rates, in precise mathematical language. The achievement was unprecedented.

Newton changed not only our understanding of the world but also what we mean when we say that we understand the world.

He demonstrated that it was feasible to write accurate equations describing the force of gravity, without trying to explain just what gravity was. This mysterious gravity provided a mechanism to hold the stars in place—the prevailing view, going back to Aristotle, envisioned a set of nested glassy spheres that fixed the heavenly bodies in space. Gravity also explained the movements of objects on the earth and in space—previously, most folk had believed material things were literally "motivated" by innate drives. Gravity kept the planets orbiting regularly about the sun. It held the atmosphere of the earth in place while it hurtled around the sun at what must have seemed, to the horse-riding residents of the seventeenth century, an unthinkable speed (now known to be about 67,000 mph).

But the concept of gravity was hard for Newton's contemporaries to swallow; it seemed a quintessential example of the occultic phenomenon of "action at a distance." To suggest that the earth reached out through empty space and "pulled" on the moon was to speak nonsense, regardless of the mathematical precision of Newton's explanation. But somehow, as if he alone still heard the faint music of Pythagoras, Newton knew that God was a mathematician, and that this was the character of the world.

While the *Principia* is primarily a work of mathematical physics, there are some interesting theological interludes. In the second edition of the *Principia*, Newton suggests that comets might refuel the sun, replenishing the energy lost illuminating the earth. Newton's intuition, informed by his concept of God's providence, suggested to him that the God-given purpose of comets in the creation was to keep the sun healthy. Such speculation, while consistent with Newton's view that God sustains the universe at all times, still stands out against what is otherwise a much more straightforward scientific approach.

The last part of the *Principia* is a "Concluding General Scholium," a short section written for the second edition to refute objections that the Cartesians had raised to the first edition. In many ways it is the most interesting part of the *Principia*. Here we find his oft-quoted coda:

"This most elegant system of the sun, planets, and comets could

not have arisen without the design and dominion of an intelligent and powerful being ...

"He rules all things, not as the world soul but as the lord of all. And because of his dominion he is called Lord God Pantokrator. For 'god' is a relative word, and has reference to servants, and godhood is the lordship of God, not over his own body, as is supposed by those for whom God is the world soul, but over servants. The supreme God is an eternal, infinite, and absolutely perfect being: but a being, however perfect, without dominion is not the Lord God."

Many scholars have speculated about the significance of Newton's theological beliefs and any role they might have played in the development of his scientific ideas. The enthusiastic secularizers of the Enlightenment have dismissed his theological explorations as aberrations, the product of a great mind in decline. By contrast, contemporary creationists present Newton as one of their own, overlooking his considerable theological heresies.

Certainly, his search for a profoundly rational explanation for natural phenomena was fully consistent with his prior belief in the rational creator at the heart of the Judeo-Christian tradition. But to what degree did this creator inspire Newton's search for the hidden rationality of the world? To what degree was the rationality of the Creator derived from the rational substructure of the world, as disclosed in the work of Newton and those who followed him?

All we can say for sure is that Newton's theological affirmations and his scientific discoveries comfortably co-existed in his own understanding of the world. And Newton's understanding of the world, at the time that he lived, far surpassed that of any other human being on the planet whose motions he did so much to explain.

Sometime between 1:00 and 2:00 a.m. on March 20, 1727, Sir Isaac Newton died. He had suffered for some time with kidney stones, urinary incontinence, and gout. Less than three weeks earlier he attended his last meeting of the Royal Society. A week

later he was laid to rest in Westminster Abbey, where his remains reside today.

In his *Memoirs*, Newton provides a self-portrait of his contribution to the world:

"I don't know what I may seem to the world, but, as to myself, I seem to have been only like a boy playing on the sea shore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."

Karl Giberson is a professor of physics at Eastern Nazarene College and editor of Research News and Opportunities in Science and Theology.

Copyright © 2002 by the author or Christianity Today International/Christian History magazine. [Click here](#) for reprint information on Christian History.