Science & Religion

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Context

Science and religion seem like completely different worlds. But as we saw earlier, questions about religion fall into three classes: scientific, scholarly, and theological. The role of philosophy is to reflect on the underlying methods each type of reflection employs and the connections among them.[1] Below we will focus on the relationship between science and religion. Occasionally, we will draw on theology to clarify what religions teach.

History

Many people assume that modern science by its very nature is completely separate from religion. Some even hold that science undermines religion. But two prominent figures in modern science held quite different views about science and religion.

Isaac Newton (1643-1727), considered the founder of modern, empirical science, was what today we call a "critical thinker" about religion. He had doubts, but they were about the faithfulness of his Anglican tradition to the true Gospel. His breakthrough scientific proposal that gravity is a universal force was meant to replace a naive materialism about the universe (*There must be angels up there making the moon and stars move*) with an affirmation of the *immaterial* reality of physical *laws* governing the movements of material things. To his mind, this proved that it is reasonable to affirm God as the ultimate *immaterial* reality governing our material universe. Most theist theologians today rely on this kind of affirmation of God as a spiritual reality governing the material universe.

Aristotelian Science

The reigning science up to the 16th century was Aristotle's, who aimed to establish what is true about nature by deduction from philosophic principles. Empirical science, by contrast, does not work by logical deductions from philosophic principles; it establishes principles by "induction" from empirical evidence.

Charles Darwin (1809-1882), considered the pioneer of evolution theory, grew up among strong religious traditions, but he became alientated from religion initially through the Unitarian, atheistic, and pantheistic influences of his father and grandfather, and eventually through his scientific findings about the emergence of new species, which contradicted biblical accounts. His views have been condemned by those who regard the biblical account as historical fact. His views have been accommodated by those who regard the biblical account not as factual history but as “emblematic narrative”—in the anthropologist's sense of a story aimed to account for the origins of tribal beliefs about sex, love, ancestors, nobility, waywardness, and death.[2]

Current: Four Approaches

Today, both scientists and nonscientists adhere to religion, just as both religious believers and nonbelievers practice science. Still, people differ widely on the mutual involvements of science and religion. We can distinguish four different views:[3]

Conflict. The view that science and religion are in conflict has been held by philosophers, scientists, and religious believers. The philosophy of "logical positivism," strongly influenced by the success of the natural sciences, claims that *all knowlege claims* must be verifiable or falsifiable by empirical experience. So, because religion, ethics, and metaphysics are not based on empirical data, they do not provide real knowledge. Some eminent scientists (such as Carl Sagan) hold that the universe of our experience is all there is. This opinion is based on a view of that "evidence" is restricted to the data of our senses and excludes the data of our consciousness.

A significant group of mainly American Protestants holds that the Bible presents truths from God which no science can contradict. Called "biblical literalism," this view aims to protect the trustworthiness of God by assuming that all biblical statements must be factually true. However, the majority of Christian theologians have allowed a more metaphorical interpretation of certain parts of the Bible. They cite the authority of St. Augustine as well as frequent “metaphorical” interpretations of Old Testament texts by the New Testament authors themselves. They also point to the fact that before Leopold von Ranke published his *History of Latin and Teutonic Nations* (1824), history books were written to sustain a culture, not to report "what actually happened."[4]

Independent. The view that science and religion can co-exist, but without interaction has been held since the 13th century, when theologians distinguished between a supernatural order and a natural order. Religion was about the supernatural and science was about the natural. Currently, this mutually-independent view is held by Protestants labeled "neo-orthodox." This term, which means "*new-proper-teachings,"* promotes a return to faith-based teachings as pioneered by Karl Barth (1886-1968).

The coexistence of science and religion is also held by some "existentialists," who downplay intellectual analyses in favor of personal commitment and living authentically. They respect the findings of science but do not allow these findings to affect their efforts to live authentic lives. Similarly, "linguistic analysists" (philosophers who determine what people mean by how they use words) distinguish the different meanings attached to words as used by scientists and religious believers, respectively. Because their entire "worlds of discourse" differ, the kinds of knowledge are quite distinct.

No doubt, the idea that science and religion are independent is the view held willy-nilly by the many people who just don't let the question bother them because they never noticed that their own minds naturally seek the ever larger, more comprehensive views of things.

Dialog. The view that science and religion can engage in productive dialog starts from an acknowledgement that each side has "boundary questions"—questions whose resolution depends on views of other side. Science can explore *how* the natural world works, but scientists rely on religion to deal with questions of *why* there is a natural world in the first place. Religion can affirm *that* God is engaged with humans, but religious believers rely on science to help explain *how* God works in the psychological, sociological, and historical dimensions of human life.

One highly influential contribution comes from Thomas Kuhn. In his *Structures of Scientific Revolutions (1970),* he proposed that all sciences undergo "paradigm shifts" in which the entire conception and methods of scientists shift to a higher viewpoint. In the past few

decades, scientists and theologians alike have opened their minds to the higher viewpoints that might incorporate both scientific and religious knowledge.

Integration. This view anticipates reaching fundamental agreements between science and religion. Since many respected scientists are religious, and many respected religious believers are scientists, some surely have integrated in their minds what other scientists and believers have not. For this integration, they typically rely on philosophy and theology. We can mention four in particiular:

> A "natural theology." This is essentially a philosophy that focuses on what we can understand about God from natural reason. It would honor and incorporate proven scientific views.
>
> A "theology of nature." This is essentially a theology that seeks to update traditional religious doctrines about life in terms drawn from scientific views on the nature of things. It would extend religious commitment to a scientific vision of the universe, such as propose by Teilhard de Chardin.[5]
>
> A "comprehensive metaphysical system." This combines philosophy and theology by showing how their respective aims are part of a larger, more comprehensive world view. Some see everything in the context of process or becoming. Others see everything in the context of "word" as expressions of meaning.[6]
>
> A "generalized empirical method." This combines philosophy and theology by basing, and testing, all metaphysical systems and all technical terms on an analysis of what we do when we know anything.[7]

Current Scientific and Religious Knowledge Compared

The approach in this course falls into this "integration" category, and in the fourth manner of a generalized empirical method. It reveals significant differences in the procedures and validity of our common sense knowing, scientific knowing, historical knowing, aesthetic knowing, religious knowing, and philosophical knowing. In particular, by distinguishing between the scientific and the religious ways of knowing, a generalized empirical method rather quickly sorts out an essential difference between science and religion. In fact, the source of most difficulties in relating science to religion is a confusion about the exact difference between scientific knowledge and religious knowledge.

Scientific Knowledge. The ultimate goal of science is complete explanation of all phenomena (or experience, or data). But, as everyone knows, nothing will ever be explained completely. For example:

> Newton's law of gravity bodies works for big things, but not for subatomic particles. More complete explanations have been provided by Einstein and Heisenburg, but unexplained anomalies remain, such as "black holes" in space from which light cannot escape, and of neutrinos that seem to travel faster than light.
>
> Darwin's theory of evolution explains how new species of animals emerge through a gradual process known as "natural selection." But scientists today seek a more complete explanation of how highly complex neural systems in animals seem to emerge quite suddenly.

So the *working* goal of science is:

> The *progressively more complete explanation* of phenomena.

Note that science does not propose to establish any new "truth." Examples of truth are, "Did Lincoln die?" "Do you have a brother?" "Does God exist?" The answer to a truth-question is Yes or No. Science may start with certain truths—for example that there is a new flu virus. But they aim toward a more complete explanation of *how* the virus works and *how* to develop antibodies. The answer to more-complete-explanation questions is not Yes or No. Rather, it is some plausible explanation of *how* things work or *why* they occur. Scientists humbly propose their explanations as "best available so far."

Of course any scientist may wonder, "*Why* does God allow the flu to kill people in the first place?" But since the data on God's existence are just data and not facts established by empirical tests, the scientist cannot explain *why* God allows the flu by relying on any established methods of science. It would be like explaining *why* fish in the North Sea are dying by saying the Loch Ness Monster ate them. So far we have no conclusive empirical evidence on this beast.

Religious Knowledge. While the goal of science is to provide plausible explanations of how or why things occur, the goal of religion is to help people share life intelligently and responsibly with God. The knowledge sought by religion is essentially a set of values (priorities, what's good, what's worthwhile, whom we might love). The chief value

proposed by religions is believing *in* God. This is far more than believing *that* God exists. Believing *in* God requires a loving engagement with God. Different religions point to different avenues by which God engages us: beauty in nature, prophets, books, persons, religious leaders, historical traditions, and personal inspirations.

So we may define "scientific knowledge" as the best available explanations of data, and define "faith" as the knowledge born of engagement with God. Faith "knowledge" includes *values* such as self-sacrifice, humility, compassion, rules against killing, and trusting in God's love. As a result of values like these, faith knowledge includes *truths* such as "Muhammad is Allah's prophet" or "David was chosen by Yahweh" or "Christ is the gift of God's real self to humanity." In short, then, science seeks the best available explanations of data; religion seeks to know what values and truths come to light when one lovingly engages God in faith. The more central such religious truths are to one's faith, the less completely we can give full explanations. This is because the core of faith is an engagement with a being far beyond human comprehension.

Example: Knowlege of Creation. Darwin's theory of evolution is the main source of the recent appearance of "biblical literalism." The debate about creation has become polarized between "Creationists" and "Evolutionists," although there are many nuanced positions in between. Most confusion over this issue can be resolved by noticing the difference between scientific and religious knowledge.

We noted that science proposes evolution as a "best explanation so far" of data on the appearance of species and the transformations of viruses. Science does not ask *why* or *for what purpose* species and viruses change the way they do, only *how* the data on these changes may be best explained. The express this *how* in laws and probabilities that apply to well-defined sets of data. It is beyond the goal of science to assert a truth about God's role. So evolution is not "true" because truth is an answer to a Yes/No question, not a *how* question. Nor is evolution "just a theory," as if theories are just ideas with no relation to reality. A more accurate term for evolution is that it is an *amply verified hypothesis.* In countless experiments, the hypothesis of an evolutionary process has been verified as the best-available explanation of the data.

Religion proposes that God made everything. Faith reveals the value of believing this because it first reveals the value of believing *in* God. But faith does not assert *how* God made everything. Biblical statements on

creation are clearly aimed to elicit belief *that* God is creator, not to elicit belief in *how* God creates. This seems evident from the absence of any attempt to resolve discrepancies between the two descriptions of *how* God creates found in chapters one and two of Genesis,[8] as well as from comparisons of these accounts with other origin-myths such as the *Epic of Gilgemesh.* There is no apparent contradiction to hold *that* God creates everything, largely through the process we call evolution.

Unresolved Issue: The Human Sciences and Religion

Much of the discussion about science and religion is focused on the natural sciences—physics, chemistry, botany and biology. A more troubling matter regards the human sciences—psychology, sociology, economics, political science, and cultural anthropology. Here again, a generalized empirical method that analyzes what we do when we think brings to light the serious nature of this more troubling matter, namely, that we humans often *act against our own nature*. What does this mean?

Both the natural and the human sciences seek to provide best available explanations of data. The difference is that the data on *natural* processes reveal intelligible laws and statistical averages. Nothing in nature can violate its "natural" functioning. Scientists working in the natural sciences expect everything to function according to some laws or probabilities, even though they may not yet know what these laws or probabilities are. But the data on humans reveal the *meanings* behind our words and what *values* lie behind our choices. Psychologists seek to clarify what slips of the tongue *mean;* cultural anthropologists seek to clarify the *values* of a long-lost tribe in New Guinea. But human meanings and values can be distorted in ways that laws and probabilities cannot explain. We can do morally evil acts. We can ignore questions that press on us. We can seek values that are purely self-serving. We can act against our better judgment. Unlike the rest of nature, we are radically free to choose what we are becoming, which unfortunately includes acting against our own rational, moral nature. So besides looking at laws and probabilities, the human sciences also look at meanings and malice.

Here's a chart that lays out the basic differences:

	Examples	Methods
Natural Sciences	Physics, chemistry, botany, biology	Laws and probabilities
Human Sciences	Psychology, Sociology, Political Science, Cultural Anthropology, Economics	Laws and probabilities Interpretation of meanings. Critical thinking that anticipates bias, irresponsibility, malice

The human sciences have yet to agree on a method for dealing with entities that can violate their own nature. The sources of the data are the minds and hearts of real people which, as everyone knows, can be biased, in error, and irresponsible. So the human sciences need a method for identifying these dysfunctions and for identifying those social institutions that are improving the human condition and those that are not.

> For example, many psychologists today expect that there must be an explanation for every quirk; they consider themselves "psycho-analysts" because they analyze behavior and propose to explain it. But there is no explanation of *why* we act against our better judgment. It is an essentially irrational act.
>
> In a similar manner, defense attorneys in court always propose explanations of *why* their clients acted as they did; attorneys know that only a plausible explanation can justify any act, and that the entire system of law is based on the assumption that certain wrongdoing cannot be justified.

The religious term for acting against our better judgment is "sin." A secular term is “malice.” The data on malice is everywhere available. Today, what many scientists, philosophers and theologians are seeking is a comprehensive scientific method for dealing with malice that is as universally accepted as the methods in the natural sciences. But we can at least draw two immediate conclusions from our analysis so far:

> Liberal tolerance is insufficient. Malice must be dealt with. A toleration of every belief of others is not acceptable to science, philosophy, or theology. Such toleration is tacit approval of what religions denounce and practitioners of the human sciences seek to prevent. Likewise, an acceptance of one's own religious

> traditions without seeking to understand their meaning and purge them of errors exposes profound and hard-won religious values to the forces of decay.
>
> Condemnations of sin is insufficient. Among adults, religious condemnations of sin will be more effective if coupled to scientific analysis of the core data—that people act against their better judgment. This phenomenon needs to be addressed in psychology, sociology, economics, political science and cultural anthropology.

Finally, notice that while the "science vs religion" question always gets the headlines, the debate is typically focused on the appropriate spheres of these two great areas of human wonder. But what many scientists and even thologians overlook is this most troubling experience of every person:

> Unlike the rest of nature, we can violate our natural functioning.

Here is probably the core question that faces both science and religion. So, rather than debate the proper spheres of science and religion, perhaps we should promote a common investigation on this, the most troubling experience imaginable.

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1 See Lecture 1A.

2 Anthropologists often use the term *myth* to describe stories about human origins, troubles, and destinies. This distinguishes them for *fables* or what we call *fictions,* which make no claims to be true. I use the term *emblematic narratives* here because to many people, *myth* is identical to *not true fact.*

3 These four approaches are taken from Peterson, Michael, et al., *Reason & Religious Belief: An Introduction to the Philosophy of Religion* (New York: Oxford University Press, 2003), ch. 12.

4 In an appendix to von Ranke's *History of Latin and Teutonic Nations* (1824), he states, "You have reckoned that history ought to judge the past and to instruct the contemporary world as to the future. The present attempt does not yield to that high office. It will merely tell how it really was." See http://www.age-of-the-sage.org/history/historian/Leopold_von_Ranke.html.

5 Teilhard's groundbreaking work, *The Phenomenon of Man* (New York: Harper & Row, 1960) incorporates the concepts of evolution, anthropology, and astronomy to give a vision of the universe as an ever deeper and profound emergence of human

consciousness while also an ever expanded view of Christ. Teilhard was a Jesuit priest and paleontologist. He completed the work in the 1930s but, because it was out of line with orthodox Catholic teaching about scientific views of the universe, the book was not published until 1955, shortly after his death.

6 The example given by Peterson, *op. cit.,* pp 261-61, is the work of Alfred North Whitehead, who proposed that all reality is essentially a process. So neither Newton's science nor most religious doctrines can adequately account for the continuous "becoming" of all reality, including God.

7 A generalized empirical method is based on the standard empirical method of modern science but "generalized" to investigate the data of consciousness—particularly the data on asking questions, proposing hypotheses, testing them for validity, making moral commitments, and being religiously converted. This method is the result of the work of Bernard Lonergan. See "Bernard Lonergan (1904-1984)" at www.iep.utm.edu/lonergan/

8 The first chapter of Genesis, in which God is called *Yahweh*, was written about the time of David (1000 BCE). The second, in which God is called *Elohim*, was written about a century later. See Robert Alter, *The Five Books of Moses* (W. W. Norton, 2004) 10-11, 20.