

Report

THE JOHN TEMPLETON FOUNDATION MODEL COURSES IN SCIENCE AND RELIGION

by Margaret Wertheim

Abstract. In 1994 the John Templeton Foundation Humility Theology Information Center launched a major initiative, the Science-Religion Course Program, to encourage the teaching of high-quality academic courses focusing on the relationship between science and religion. In the first phase of the program, six courses were selected—four from the United States, one from Canada, and one from New Zealand—to serve as models for other academics wishing to initiate their own classes on the science-religion interface. In particular these six model courses will serve as examples for the second phase of the Templeton Foundation program, which will provide financial support for up to 100 courses at universities, colleges, and seminaries around the world. This paper is a report on the pedagogical strategies and methodologies employed in each of the six selected model courses.

Keywords: epistemology; faith in knowledge; historical interaction; Kantian separation; pedagogy.

In 1994 the John Templeton Foundation announced its intention to fund a major initiative aimed at encouraging the teaching of high-quality courses in science and religion at academic institutions. Thus the Foundation's Science-Religion Course Program was launched, with Robert L. Herrmann as program director. Herrmann is an adjunct professor of chemistry at Gordon College. In June 1994 the first phase of the program was completed with the announcement that six preexisting courses had been chosen as models for the teaching of science and religion, for the purpose of providing pedagogical resources and inspiration for others around the world.

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Each of the model course winners was awarded a \$5,000 prize from the Templeton Foundation. In particular, it was the Foundation's intention that the model courses serve as examples for phase two of its program, wherein up to 100 current or proposed courses in science and religion around the world would be selected as winners by June 1995. The Foundation has recently announced that the program will be repeated in 1996. (Applications are now being invited; see the announcement below.) This paper is a report on the original six model courses selected by the Templeton Foundation in 1994.

The five primary winners were: John Albright, Department of Physics, Florida State University, Tallahassee, Florida; Edward Davis, Department of Natural Sciences, Messiah College, Grantham, Pennsylvania; John Stenhouse, Department of History, University of Otago, Dunedin, New Zealand; Thaddeus Trenn, Institute for the History and Philosophy of Science, Victoria College, University of Toronto, Canada; and Wentzel van Huyssteen, Princeton Theological Seminary, Princeton, New Jersey. In addition, a course presented by Robert John Russell of the Center for Theology and the Natural Sciences in the Graduate Theological Union, Berkeley, California, also was selected on the basis of merit; it did not receive a monetary prize, since Russell was one of the program judges. What follows is a brief outline of the pedagogical philosophies and methodologies employed by each of the model course presenters. The different strategies they pursue not only offer a spectrum of fruitful models for presenting the science-religion encounter in the classroom, but the very diversity of these approaches testifies to the richness of the interface between science and faith in the modern world.

MODEL COURSE WINNERS

John Albright: Moving beyond the Conflict Model. As a lifelong Lutheran and a high-energy particle physicist who has spent extended periods as a researcher at national laboratories in the United States and at England's Cavendish Laboratory, John Albright is intimately embedded in the worlds of both science and religion. His father, a clergyman, taught him at an early age that the two fields were not intrinsically in conflict with one another, and so, as well as teaching physics at Florida State University, Albright teaches his winning course in the university's Department of Religion. His mostly third and fourth year students come from a wide variety of disciplines, with English, political science, religion, and psychology majors prominent. However, while most of his class

are not religion majors, the majority have some church affiliation, notably Roman Catholic and Southern Baptist. Many of these young people, says Albright, are searching for a reconciliation between the religion of their parents and the secular ideas they are encountering in the university halls.

As this is an introductory course, and few students have formal training in either science or religion, Albright's starting point is Ian Barbour's *Religion in an Age of Science*, through which he introduces the class to Barbour's different models of the science/religion interaction. With that theoretical framework in hand, Albright moves on to a careful examination of two major issues wherein science and faith intersect: causality and chance, and creation and evolution. With respect to the former, he explores the religious concepts of predestination and free will in the light of scientific concepts of determinism and chance, here focusing on insights from the theories of physics, notably relativity, quantum mechanics, thermodynamics, and chaos. Albright concludes that contemporary physics undermines deterministic thinking since "quantum mechanics has abolished determinism at the microscopic level and chaos theory has demolished it at the macroscopic level." But even though scientific models can address religious beliefs Albright stresses the integrity of religious insights as well.

Here his second theme, that of creation and evolution, plays a crucial role. It is here, he notes, that students often have the strongest sense of a conflict between religious traditions and science. In order to unbundle these issues, Albright reveals that contrary to popular belief the Bible has various creation stories, including two in Genesis. Science, he continues, offers several creation accounts as well, addressing cosmogenesis, geogenesis, biogenesis, anthropogenesis, and culturogenesis, to which the biblical accounts also allude. For example, the story of Cain and Abel refers to the cultural transition from herding to agriculture—a detail of culturogenesis. Furthermore, the Bible itself is deeply imbued with the idea of change and evolution. Once students understand that the Bible does *not* depict creation merely as a singular event at the dawn of time but as an ongoing, continuous, and evolutionary process, Albright finds they are more easily able to move beyond the conflict model to other, more positive models of the relationship between science and religion.

Edward B. Davis: Helping Students Develop Their Own Models.

Along with John Albright, Edward Davis of Messiah College also is concerned to help students see past the idea of conflict. A historian of science who specializes in the science/religion interface during

the seventeenth century, Davis is particularly interested in “the conceptual development of science and the various ways in which the religious views of scientists have affected their professional lives and thoughts.” At Messiah, he too faces an undergraduate population seeking to unify the wide variety of insights resulting from higher education. For his students this problem is lifted up by the fact that Messiah is a Christian college dedicated to providing teachers and students with an environment supportive to their faith. In this context, says Davis, his course has become “crucial to our institutional identity.” Rather than impress upon students any particular position vis-à-vis science and religion, Davis aims to create a class environment that “encourage[s] each student to put together their *own* understanding of the proper relation between scientific knowledge and religious knowledge.” The thrust of his course is to provide students with the intellectual tools to enable them to start developing their own models of the science/faith interaction within the context of their own lives. In an end-of-term paper each student is required to put forward a tentative personal model along with a justification for that model.

As does Albright, Davis begins by introducing students to the different models that have categorized the science/religion encounter historically. Here the class examines the Galileo affair as a critical episode. But after looking through the lens of history, students move forward to examine their own experiences in the world today. Although Davis himself prefers the complementarity model, he finds that some students finish the course firmly committed to the conflict model. However, he notes, “it is a different type of conflict, no longer a naive one.” Having acquired a better understanding of the role of science, a number of students in his last class concluded that, since science seems amoral, and religion is intrinsically concerned with questions of morality, there *is* an innate conflict, one that *should* be acknowledged. Yet Davis stresses that such a position is now the result of “thinking deeply, not naively, about the relationship,” and hence constitutes a valuable step forward in the students’ thinking. The whole point of the course, he says, is to help students learn to think critically about science and religion for themselves, and to develop their own abilities to engage in ongoing analysis as scientific theories and discoveries continue to interact with understanding of faith in their lives.

John Stenhouse: Speaking to Future Historians. While all the model course winners emphasize the changing historical context of the science/religion encounter, history is the very essence of John

Stenhouse's course at the University of Otago in New Zealand, because his classes are aimed specifically at honors-level history majors. Stenhouse himself is a historian who has published widely in the field of science and religion. He is especially interested in the interaction between the two within the context of nineteenth-century New Zealand. This then becomes the focus of his winning course.

Most of the students who attend Stenhouse's course not only know little about theology and church history, but they generally begin, he says, "with fairly negative attitudes toward religion." At the honors level in the British academic system, students are required to do original research, and so this course is divided into an introductory and a research component. In the first half, students study the science/religion encounter in Europe and North America from the eighteenth to the twentieth century, focusing on the Darwinian debates of the late nineteenth century. Then in the latter half of the course, each student is required to produce an original paper, based on primary historical documents, in which he or she analyzes the response of some nineteenth-century New Zealand thinker to the revolution in natural science and its implications for faith. Clergy, politicians, scientists, and ordinary citizens can serve as subjects for these papers. It is this focus on local New Zealand culture that Stenhouse says really draws students in and makes abstract ideas tangible. Such an approach, he suggests, "offers a model that could easily be transplanted into other national, ethnic, and religious contexts."

Eschewing crash courses in theology and church history, Stenhouse instructs his students at the start of the year that if they don't understand any biblical or theological references, they must stop him and ask for clarification. It's a strategy he has found very successful, and much to his surprise, students often become fascinated by issues such as Calvinism. Secularists often come to see religion in a more appreciative light, and some religiously oriented students learn to take science more seriously.

Robert John Russell: Speaking to Future Clergy and Religious Studies Faculty. While Stenhouse's course is tailored for future historians, Robert John Russell's is tailored for future ministers, theologians, and religious studies faculty. His students are master's and doctoral candidates from the nine seminaries that make up the Graduate Theological Union (GTU) in Berkeley, California. Russell himself is not only a theologian and a physicist who specializes in cosmology, he is also an ordained minister in the United Church of Christ. In addition to his position as in-residence Professor of

Theology and Science at the GTU, Russell also is the founder and director of the internationally recognized Center for Theology and the Natural Sciences, which is part of the GTU.

At the heart of Russell's pedagogical strategy is the belief that in the modern world theologians and ministers cannot fully deal with the issues they are called upon to address unless they have an understanding of the theories and discoveries of science. Unfortunately, however, since the Enlightenment and owing principally to Kant, most theological texts have utterly ignored science, disengaging the study of the spiritual, cultural, and ethical from the physical, biological, and cosmological. It is Russell's intention to show his students that this Kantian separation no longer can be justified and that, on the contrary, the discoveries of contemporary physical and biological sciences can impact profoundly on many Christian doctrines.

In order to explore this impact, Russell uses as his principal text Peter Hodgson and Robert King's *Christian Theology*. Here, he says, is a classic example of the very problem he must help his students surmount. While Hodgson and King have produced an excellent theological text, not one of the dozen authors represented in this anthology collection seriously discusses the implications of science to theology, and thereby they imply the irrelevance of science to the issues they address. Russell's strategy is to work his way through Hodgson and King, all the time bringing into the discussion of doctrinal and ethical matters insights from cosmology, physics, molecular biology, and the like. For example, when talking about the doctrine of *creatio ex nihilo* he will bring up insights from general relativity and quantum cosmology about the Big Bang and the early stages of our universe. Or when discussing sin he will bring up sociobiology and examine the implications of genetic predisposition for the question of grace and free will. Thus he weaves theology and science into an indivisible cloth. The idea, says Russell, is for the students finally to have that "aha moment" when they see for themselves that their professional commitment to religion demands a commitment to understanding contemporary science and its implications for faith.

Thaddeus Trenn: The Role of Faith in Both Science and Religion. Thaddeus Trenn, a physicist who became a historian of science, taught his winning course as part of the Christianity and Culture Program at St. Michael's College, an independent Roman Catholic college within the University of Toronto. Now engaged in teaching only part-time (while also looking after a small farming operation), Trenn has, for the past thirty years, been involved in inter-

disciplinary teaching and research concerning science in its historical, philosophical, and cultural dimensions.

The majority of Trenn's students are not from St. Michael's itself but from the broader student body of the secular university. Approximately half are science majors. His core text is Templeton and Herrmann's *The God Who Would Be Known*, which presents a concerted argument for the proposition that contemporary science provides compelling evidence for a divine Creator. Trenn guides his class through discussions of the discoveries and theories presented in the text, considering the evidence they offer for the existence of what Michael J. Buckley has called "a friend behind the phenomena." Yet in spite of the abundant examples, what inevitably transpires is that at some point the class becomes polarized between those for whom the evidence is clear, and those for whom it is patently not—the former tending to be those of religious faith, the latter skeptics. What becomes apparent to the students at this point, says Trenn, is that in fact "the 'evidence' is *not* so evident." This realization becomes a turning point, allowing Trenn to introduce the idea that faith is involved in *all* systems of knowledge, including scientific knowledge. Science is not just a collection of facts, because facts must be interpreted, and all interpretation takes place within a framework of belief.

The role of faith in both religious and scientific knowledge forms the central theme of Trenn's course. On the one hand students develop an appreciation that science alone can never *prove* the existence of a transcendent being. For believers, it can certainly serve to reinforce faith by highlighting the marvelous structure of nature, but it cannot, Trenn emphasizes, bridge the divide for those who are not already open to belief in a benevolent deity. By the same token, students learn that neither can science *disprove* the existence of a supreme being. Although it is logically possible to see the universe as arising from a series of accidents, Trenn points out that this position is itself founded on an intense faith in flukes without meaning. Like Davis, Trenn does not pressure students to accept any particular position about God, but strives to create an environment in which they are free to explore ideas openly. This openness is what keeps students of various orientations coming to the course. By the end, most have come to a more subtle understanding of the role of faith in both science and religion. Furthermore, they have "come to appreciate the simple fact [that] no one can believe *for* someone else. You have to make it your own."

Wentzel van Huyssteen: Questions of Epistemology. The holder of the James McCord Chair of Theology and Science at Princeton

Theological Seminary, Wentzel van Huyssteen is, he says, "greatly privileged to be able to teach Theology and Science on a full-time basis." A South African by birth, van Huyssteen trained as both a theologian and a philosopher of science. Like Robert Russell's course at the GTU, his is tailored for seminary students and has been designed for an audience that already has a broad knowledge of theology. Although no scientific training is required as a prerequisite, most students so far have had undergraduate science or math majors. As a result the class has quickly progressed to a sophisticated discourse on the science/religion interface. Officially part of a master's program, this course is conducted along the lines of a graduate seminar.

In formulating his course van Huyssteen was inspired by the fact that many physicists (notably Paul Davies and Stephen Hawking) are boldly proceeding to give metaphysical and even theological answers to questions such as, How did the universe begin? When will it end? and What are time and space? Such questions, he notes, raise the conceptual problem of how scientific interpretations and explanations relate to theological interpretations and explanations. Indeed, says van Huyssteen, the "new physics" challenges theologians to respond to the fact that scientists are increasingly "assuming the role of priests." In this course van Huyssteen explores both the challenge that contemporary physics and cosmology present to theology and the reciprocal challenge that theology presents to science and scientific epistemology. Thus, at its core, this is a course about religious and scientific *ways of knowing*, and the interrelations between them.

One of the key points van Huyssteen hopes to impress upon his students is that the current interest in the relationship between science and religion "implies a fall from epistemological innocence." Neither scientists nor theologians are any longer able to get away with exclusive claims to Truth. In the late twentieth century, neither side is able wholly to ignore the other. And indeed, both sides are now focusing on many of the same questions. It is precisely this convergence that van Huyssteen sees as so potentially fruitful. The more scientists and theologians become interested in similar issues, the more they are being compelled into a dialogue with one another. Thus the strict disciplinary barriers that have been in place for the last century are beginning to dissolve. Yet it is not sufficient for scientists and theologians simply to talk to one another; what is crucially needed, says van Huyssteen, is a better understanding on both sides of the epistemological complexities of both ways of knowing. In particular there is the need to understand that theology itself *overlaps*

with scientific rationality and that both science and religion “share in the human quest for intelligibility and ultimate meaning.”

AFTER PHASE ONE

Judging by the response to these six courses, there is a burgeoning desire on American campuses for a critical interaction between religious faith and scientific reason. All six model course presenters have had to limit their class size because demand has been greater than they could happily accommodate. Albright, for example, scaled back from forty to thirty students because, like the other presenters, he “places a high value on classroom discussion, and wants a large percentage of the class to be able to participate.” Yet he has “the distinct impression that the course would fill almost to capacity at whatever level we set” for enrollments. Such courses are of value to a wide range of students who are serious about working out their own philosophies of life, be they religious or secular.

With the selection of the model courses the first phase of the Templeton Foundation’s Science-Religion Course Program was completed and the second phase was implemented. In this phase, up to 100 courses in science and religion worldwide will be selected for awards of \$10,000, with \$5,000 going to the course presenter and \$5,000 to the host institution at the time the course is taught. At the time of writing 158 entries had been received from countries as diverse as Poland, Germany, Russia, Australia, Brazil, Taiwan, and Iran, although the majority have come from North America. Fifty-three applications have been from secular institutions. Along with the 97 applicants from departments of philosophy, religion, and theology, there have been 42 from science departments and 19 from humanities and mathematics. Thus not only are *students* searching for bridges to cross the science-religion divide; so, it would seem, are more and more *faculty*. According to Robert Herrmann, the program’s director, the number of applications received suggests that a more favorable climate for teaching science and religion courses exists than many had believed. With the program to be repeated next year, Herrmann expresses the hope that many more faculty with an interest in the field will be encouraged to make their presence felt on campus.

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