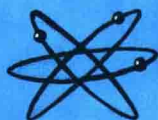


YVES GINGRAS

# SCIENCE AND RELIGION

AN IMPOSSIBLE DIALOGUE



'In this forceful and fascinating polemic, a leading historian and sociologist of the sciences takes up arms against recent calls for dialogue between science and religion. In a survey of past centuries of conflict, censorship and apologetics, and a telling analysis of modern initiatives to establish new kinds of relations between science and religion, Gingras argues that the sciences have achieved autonomous status by building social organizations not to be reconciled with the claims of faith. This book represents an important and provocative intervention in a debate of great contemporary significance.'

**Simon Schaffer, Professor of History of Science, University of Cambridge**

'Yves Gingras' gripping account of four centuries of conflict between religion and science provides a wonderful antidote to the insistent calls for "dialogue".'

**Alan Sokal, Professor of Physics, New York University**

Today we hear renewed calls for a dialogue between science and religion: why has the old question of the relations between science and religion now returned to the public domain and what is at stake in this debate?

To answer these questions, historian and sociologist of science Yves Gingras retraces the long history of the troubled relationship between science and religion, from the condemnation of Galileo for heresy in 1633 until his rehabilitation by John Paul II in 1992. He reconstructs the process of the gradual separation of science from theology and religion, showing how God and natural theology became marginalized in the scientific field in the eighteenth and nineteenth centuries. In contrast to the dominant trend among historians of science, Gingras argues that science and religion are social institutions that give rise to incompatible ways of knowing, rooted in different methodologies and forms of knowledge, and that there never was, and cannot be, a genuine dialogue between them.

Wide-ranging and authoritative, this new book on one of the fundamental questions of Western thought will be of great interest to students and scholars of the history of science and of religion as well as to general readers who are intrigued by the new and much-publicized conversations about the alleged links between science and religion.

Yves Gingras is Canada Research Chair in History and Sociology of Science at the University of Quebec at Montreal.

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# SCIENCE AND RELIGION

## MOVES US FORWARD

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Yves Gingras

# Science and Religion

*An Impossible Dialogue*

Translated by Peter Keating

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# Science and Religion



If there is one truth that history has incontrovertibly settled, it is that religion extends over an ever diminishing area of social life. Originally, it extended to everything; everything social was religious – the two words were synonymous. Then gradually political, economic and scientific functions broke free from the religious function, becoming separate entities and taking on more and more a markedly temporal character.

Emile Durkheim<sup>1</sup>





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# INTRODUCTION

*While religions divide men,  
Reason brings them closer.*

Ernest Renan<sup>1</sup>

This book attempts to explain how the question of the relations between science and religion and calls for a ‘dialogue’ between these two areas of activity, so distinct in their objects and methods, came to occupy a significant place in public discussion in the course of the 1980s. For it was not always so. Until quite recently, the scientific consensus was, as a botanist and Brother of Christian Schools expressed it clearly in the mid-1920s, that ‘science and religion follow parallel paths, towards their own goals’, and that there was no need to search for a necessary ‘harmony’ between scientific discoveries and religious beliefs.<sup>2</sup> As a student in physics during the 1970s, I recall that neither students nor professors spent much time discussing the supposed relations between science and religion nor was there any spirited public debate or a plethora of books on the topic. Even during the 1980s, when studying the history and sociology of science, such discussions were still rare and largely limited to the counter-culture and followers of ‘New Age’ syncretic ‘philosophies’. Thus the question: how did this renewed interest for a ‘dialogue between science and religion’ come about?

As will be seen in chapter 5, the return of these issues to prominence in the intellectual field has, as one of its sources, Pope John Paul II’s decision in November 1979 to review the Galileo trial, a potent symbol in both popular and academic imagination of the opposition between scientific thought and religious beliefs. The mere mention of the condemnation of Galileo by the Holy Office (then known

as the Supreme Sacred Congregation of the Roman and Universal Inquisition) in June 1633 suffices to remind us that the relations between science and religion have an extensive history, and that, on many occasions, they have been quite fraught. While the 1979 decision made at the highest level of the Catholic hierarchy may have triggered interest in the issue, it does not entirely explain the proliferation of publications since the 1980s with titles that juxtapose the words ‘science’, ‘religion’ and ‘God’. The 1960s and 1970s witnessed the rise of a current of syncretic thought associated with ‘counter-culture’ and ‘New Age’ seeking to combine philosophical and religious traditions with the ‘mysteries’ of quantum physics, a theory seen as a challenge to both logic and common sense. This in part created a platform for the many popular books that claimed that the ‘the most advanced’ science had now confirmed the intuitions of the ‘oldest’ spiritual traditions.<sup>3</sup> Since the publication of the physicist Fritjof Capra’s seminal work, *The Tao of Physics* (1975), publishers have sensed a commercial opportunity, and the market has burgeoned with books relating God and science, bearing similarly eye-catching titles. That these associations of science and religion, for the most part superficial, are the result of sincere beliefs or mercantile cynicism is of little importance. What must be understood here, as will be seen in chapter 6, is how some scientific discoveries are used to justify religious and theological positions that have little to do with science. Instead, science’s prestige is used to suggest to religious readers that modern science is in fact compatible with their preferred beliefs. Moreover, faced with the rise of fundamentalist religious sects – often highly critical of research that questions their beliefs – a number of scientists and their organizations, seeking appeasement, have come to support these dubious associations that suggest that believers need no longer be wary of modern science. Far from leading the innocent down the road to atheism, as is often thought, science leads instead, they surmise, to a belief in a nature created by a superior being.

Another important factor in the exponential growth of studies devoted to the study of the relationship between science and religion over the past twenty years has been the work of John Templeton (1912–2008) and his Foundation. As we will see in chapters 5 and 6, this Foundation, endowed with more than a billion dollars, distributes millions yearly to researchers who seek links between science, religion and spirituality. Since the mid-1990s, the Templeton Prize has frequently been bestowed upon astrophysicists who offer – directly or indirectly – religious or spiritual interpretations of modern physics and cosmology. The Foundation has also played a major role in

foisting the theme of a 'dialogue' between science and religion onto the history of science. It will also be seen in chapter 6 that these so-called 'dialogues' are little more than a modern version of natural theology, employing arguments that have barely changed since the end of the seventeenth century.

But before analysing the rise of the discourse on the relationship between science and religion, we will examine the long history of their conflicting relations. For despite the recent trend among many historians of science to say that the conflict between science and religion has been largely exaggerated, it remains the case that many scientific theories have historically been perceived as incompatible with certain religious beliefs that are based on the literal reading of sacred texts. While it is true that these clashes of world views are in some respects contingent and become open conflicts only when organized social groups or institutions confront the offending science, it is also true that the clashes are often predictable and even inevitable when a given science takes on issues and problems that resonate with those discussed in 'sacred' religious writings. In sum, if mathematics or taxonomy pose few problems for organized religion, the same cannot be said for cosmology, geology, evolutionary biology and the social and human sciences, especially those that deal with the history of religion and the origins of humanity. As noted by the sociologist Max Weber at the beginning of the twentieth century, 'the tension between religion and intellectual knowledge definitely comes to the fore wherever rational, empirical knowledge has consistently worked to the disenchantment of the world and its transformation into a causal mechanism. For then science encounters claims of the ethical postulate that the world is a God-ordained and hence somehow meaningfully and ethically oriented cosmos'. He added, moreover, that 'the extent of consciousness or of consistency in the experience of this contrast, however, varies widely'.<sup>4</sup>

The undeniable historical conflicts between different sciences and various religions participated in a struggle for power between institutions and groups with divergent and often opposed interests. At the dawn of the development of modern science in the seventeenth century, the power and prestige of scientific institutions paled in comparison to that of the Christian Church that dominated the intellectual world. Having become a symbol of the history of the relationship between science and religion, the condemnation of Galileo in 1633 merits special attention in the first two chapters. Chapter 1 shows how the balance of power between scholars and theologians explains Galileo's condemnation. Though this history has often been



told, we focus here on less discussed aspects related to the defence of the *autonomy* of astronomers' and natural philosophers' discourse vis-à-vis that of theologians. Chapter 2 then recalls the numerous attempts by philosophers and scientists in the three centuries that followed to overturn his condemnation and rehabilitate him, as well as the books of Copernicus and Kepler, which had also been condemned. This saga was finally put to rest by Pope John Paul II in 1992 on the 350th anniversary of the death of the Italian scientist. We will see in chapter 3 that although cosmology was long the source of many a bone of contention between science and Christian theology, it was replaced at the beginning of the nineteenth century by natural history and geology. Subsequently institutionalized, these sciences applied a naturalist methodology to the whole of nature with the result that invocations of the divine (or of miracles) no longer had a place in science by the middle of the nineteenth century. This long process of autonomization thus accompanied the relegation of God to the periphery of scientific discourse, even for scientists who, as individuals, remained fervent Christians.

Against the current trend – dominant in history of science since the end of the 1980s – that tends to deny or minimize the existence of significant conflicts between science and religions, chapter 4 reviews the many cases of censorship of the scientific literature by the Roman Church and its organizations (the Congregation of the Index and the Inquisition) from the beginning of the seventeenth to the middle of the twentieth century. It will also be seen that although the many Protestant sects were less organized than the Catholic Church, they were also able to prohibit publications and to dismiss or silence scientists whose scientific views contradicted their religious credos.

Although the Catholic Church, as an institution and an organization, has finally lost much of its temporal power, less centralized religious organizations (such as those of Protestants and Muslims) now act as pressure groups to block the teaching of theories they deem offensive (such as the theory of evolution), or research they deem immoral (such as stem cell research). Seeking to ban subjects offensive to their 'deep' convictions, they may take control of local school boards or adopt laws to limit the teaching of scientific theories such as evolution, as has happened in the most conservative states of the United States (since the 1920s) and in some Muslim countries (since the 1980s). They may also seek to impose the teaching of religious conceptions under the guise of science, as the long American debate around the notion of 'intelligent design' has shown.<sup>5</sup>