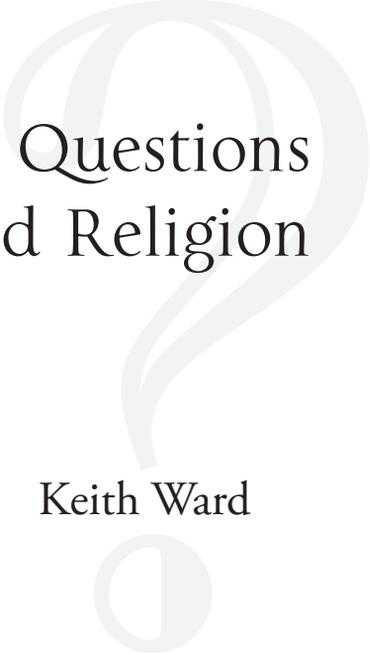


The Big Questions
in Science and Religion



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Introduction



OUR VIEW OF the nature of the universe and of the place of humans within it has changed completely within the last century from anything that could have been imagined in the past. Discoveries in cosmology and evolutionary biology, in computer science and solid-state physics have revolutionized human thinking in fundamental ways.

This book assumes that these new scientific discoveries are basically correct. Scientists' findings are, of course, always revisable, and many of them will almost certainly need to be revised in the light of further research. But they provide the best information we have about the nature of things, and the view they present is wondrous and astonishing.

All past science has had to be rethought in the twenty-first century. That process of rethinking carries important implications for philosophy, morality, and religion. Religious beliefs cannot remain what they were before the rise of modern science any more than ancient scientific beliefs can. It would be absurd to insist that ancient religious beliefs should remain unchanged when our whole view of the universe has changed radically.

But that thought raises the question of whether religious beliefs can survive at all in the scientific age. Have they been resoundingly outdated? Or is there in them something of great importance, even though the way they are expressed will have to change in the new scientific context?

I have spent my academic life in the study of religions, especially of the intellectual beliefs of religions—beliefs about God or the ultimate nature of reality, about the soul and the possibility of immortality, about different ideas of revelation and religious experience.

One result of this study has been to see that religious beliefs have usually been formulated in the light of the best available knowledge about the universe that existed at the time. This leads to the conclusion that the unprecedented and revolutionary changes in scientific knowledge of our age will involve a new formulation of ancient religious beliefs.

But my study has also led me to believe that there is a distinctive central core of religious belief that has something to contribute to human knowledge and understanding, and that is quite different from scientific knowledge. To put it very briefly, there is a nonphysical reality (or realities) that is of supreme value and that humans can become aware of it through various forms of prayer or meditation. In the great religious traditions, this supreme value is said to have the nature of consciousness, intelligence, compassion, and bliss. Human awareness of it is meant to lead to the realization of those qualities in the human world and to the cessation of all forms of egoism and selfish desire.

Religious views usually stress, however, that as human life is in bondage to egoism, to hatred, greed, and ignorance, the way to union with Supreme Value is hard to find and even harder to pursue successfully. Religious life is, thus, often a matter of intense personal struggle and even conflict, as hatred, greed, and ignorance continually threaten to undermine the highest human aims and ambitions.

Science will not resolve these deep existential struggles. But science can help to dispel ignorance about the universe and bring some clarity about the relation of the objective Supreme Value postulated by religion to the observed nature of the physical universe. It may even help to clarify the nature and possible purposes of a being of supreme value.

Many of the greatest natural scientists have been religious believers and have seen their investigations as ways of seeking to understand the wisdom and glory of God in nature. But some scientists and philosophers have argued that only the methods of science can reveal truth about the universe and that religion is intrinsically antiscientific and superstitious. So science has been used both as a support for religion and as a way of undermining religion. That ambiguity remains and must be reflected in any fair treatment of science and religion.

In this book, I have selected what I think are the ten most basic questions about the nature of the universe and about human life, questions that involve both science and religion and the relationship between them. I have attached a subquestion to each main question, appearing in parentheses below the big question that introduces each chapter, to emphasize an important issue to which the main question is of primary relevance. Thus, the problem of the prevalence of suffering in the world—a major problem for any religious view—is a subquestion to which an understanding of evolution is most relevant. And the question of what it means for humans to have free will—a major problem in religion, philosophy, and jurisprudence—I have put as a subquestion to an analysis of the nature of space/time. I hope the relation of subquestions to the major questions will be fairly clear in each case.

Since my own expertise is in the study of world religions, I have tried to describe religious views in as global and comprehensive a way as possible. I try to show the relation between diverse religious views and how new scientific knowledge may have an impact upon them. It is a fairly unusual feature of the book that the world's religious traditions are considered seriously across a wide range, and this may have its own interest as an analysis of the nature of religious belief.

It has been my great privilege, largely thanks to the Templeton Foundation, to meet some of the world's most eminent scientists and to discuss these topics with them. I think I should mention that I have met more atheists at Templeton-sponsored conferences than anywhere else, so the accusation sometimes made that the foundation is biased in favor of religion is quite incorrect and grossly unfair.

Nevertheless, since such conferences are usually about science and religion and since quite a lot of scientists are religious, it is not surprising that there are attempts by religious believers to portray the relation of religion and science in a positive way. I myself am an Anglican minister, and so I am rather unlikely to conclude that religion is outdated superstition. But that does not mean I have a closed mind—I was once an atheist and only became a believer after I opened my mind to things I had not previously considered with proper attention. But I remember what it was like to be an atheist and have tried to present the antireligious case in an unprejudiced way.

So, while putting a case for a positive and healthy relation between religion and science, I have also presented the problematic points and the main opposing views as fairly as I can. I am not a professional scientist but an enthusiastic, even zealous, lover of science and “overhearer” of scientists. I have done my best to get the science right—I have checked it in every case with experts—but the views I express about the nature and limits of science are my own. I believe that the questions with which this book deals are the greatest intellectual and existential questions facing any thoughtful person in the modern scientific age, whether such persons are religious or not. So, the main purpose of the book is to convey the depth, difficulty, intellectual excitement, and importance of these big questions. My hope is that it may also convey an understanding of the nature of science and of religion. As such, it is a brief record of some of the most impressive achievements of the human mind and of some of the deepest unresolved questions that continue to confront all who agree with Plato that “the unexamined life is not worth living.”



1. How Did the Universe Begin?

(IS THERE AN ULTIMATE EXPLANATION FOR THE UNIVERSE?)

Two Ancient Stories of the Origin of All Things

THERE HAS RECENTLY BEEN a marked growth in the number of firms that offer to trace people's ancestry and genealogy. It seems that many people are interested in knowing their past histories. Knowing where you come from and how you got to where you are tells you something important about yourself. Perhaps knowing your origin will tell you what you really are, your true nature.

Many ancient religions share this interest in how things began and how humans came to be. The oldest surviving written religious account of origins comes from Babylonia (roughly, modern Iraq). The *Enuma Elish* (the words mean "when above" and are the first two words of the epic) exists in fragmentary form and has been dated to somewhere between 1000 and 1800 BCE. Representative of a number of Middle Eastern stories of origin, it clearly influenced the account of origins to be found in the Bible (which was written down much later, perhaps in the sixth century BCE).

In the Babylonian story, the gods arise from a primal deep or chaos, what the book of Genesis calls *tobu-wa-bohu*, the "great deep," though the compiler of Genesis implies that this sea was itself created by one supreme God. In Babylon, however, all the gods arise from the deep, and there is conflict among them that culminates in a great battle between Marduk, god of the city of Babylon, and Tiamat, the great dragon or serpent of the sea. Not surprisingly, given that the Babylonians wrote the story, Marduk wins and becomes the greatest of the gods. The dragon is defeated, and, from her body, earth and sky are fashioned. Humans are made from the blood of Kingu, general of her armies, and they are given the job of tilling the earth to provide food for the gods.

As an account of the ultimate origin of all things, this is rather disappointing. All forms arise out of the formless deep, but why they should

do so or why they should have the nature they have is left unexplained. The writer of Genesis accepts the existence of primal chaos and even of a mysterious “dragon of the deep,” called variously Leviathan or Rahab. Later in the Bible, Psalm 89:9–10 says, “You [Lord God] rule the raging of the sea; when its waves rise, you still them. You crushed Rahab like a carcass.” Rahab is crushed but still lives. But at “the last day,” “the Lord with his cruel and great and strong sword will punish Leviathan the fleeing serpent, Leviathan the twisting serpent, and he will kill the dragon that is in the sea” (Isa. 27:1).

The serpent and the saltwater sea remain symbols of a chaotic and destructive force that God needs to limit and order and that God will finally destroy—so, the writer of the book of Revelation, looking ahead to God’s new creation, is finally able to say, “[T]he sea was no more” (Rev. 21:1).

For the Bible, this is no longer a war of the gods, but there is still the thought that chaos, the threat of the formless, is somehow part of creation. There is also the thought that human nature is somehow corrupted by the chaos-dragon (the snake in the garden, before he lost his legs?). In the Babylon story, humans are made of demon’s blood. They have something of chaos within them, and only the power of Marduk can keep that chaos at bay.

In the Babylonian epic, the origins of humanity tell us something about human life. They suggest that it is compounded of destructive chaos and cosmic order. They suggest that humans are part of a constant cosmic conflict, in which goodness is hard to find. They suggest that human destiny is governed by the gods and that the proper human role is to work hard to make the earth fruitful and thereby to serve the greatest of the gods and win his approval.

The biblical account reflects many of these themes, but it replaces the gods with one supreme God. And it finds the ultimate origin of the universe not in chaos, but in a personal God who creates because the universe is good or beautiful (in Hebrew, *Tob*; Gen. 1:31). This does provide a reason for the existence of the universe.

To be good is to be an object of rational desire, to be something that is desirable for its own sake. In that sense, goodness requires a being that wants and enjoys the objects of desire, and it requires objects that satisfy rational desires. Consciousness of a beautiful object is a paradigm of goodness, for such consciousness is desirable simply for itself. So, to be truly good, there must be an object that is worthy of contemplation and a consciousness capable of such contemplation. It is always a reason for the existence of something that it is such a consciously apprehended object. God can create the universe as an object of divine contempla-

tion. It would be good for God to do so, and the creation of good is a reason for creating anything.

According to the book of Genesis, out of the formless and infinite ocean of possibility, God fashions light. Or rather, God “lets light be,” as though God were releasing a possible form of being into existence, allowing it to come into existence from the shapeless realm of mere possibility. Then, God created, on the planet earth, the atmosphere, the land and its vegetation, sea creatures and birds, animals, and, finally, human beings, made in the “image and likeness” of God (1:26).

There have been many interpretations of this phrase, “the image of God.” But most scholars agree that it implies that humans, like God, have knowledge and creative freedom and share to some degree a responsibility for the care and cultivation of the earth. Most created things are good because they are beautiful, elegant, amazing in form and structure. Humans are good in a special sense because they are fully conscious of that beauty and they can themselves create beauty in new forms. They can appreciate beauty, the beauty of creation and the beauty of the Creator. They realize and are conscious of the goodness and beauty of the world. And that realization, the contemplative and sensitive awareness of beauty, is itself a new and distinctive form of goodness.

The Biblical Story As the Origin of the Scientific Outlook

I have looked at two Middle Eastern stories of origin. One, the Babylonian, belongs to an extinct religion. The other, the biblical, is still with us. One roots all things in primal chaos and sees humans as playthings of the gods, implicated in the conflicts of spiritual forces that are continually at work in the natural world, in storms and earthquakes, in fertility and human warfare. The other carries many echoes of that view; but, in its final form, probably compiled in the sixth century BCE, it roots all things in one God who envisages and actualizes creation because it is good. Humans, made in the image of that one God, must do the same—envisage, actualize, and enjoy the good things of creation and keep the mysterious threat of the unbounded deep at bay.

Between these two stories of origin, there is a division that continues to exist in the most sophisticated contemporary scientific accounts of the universe: the divide between chance and purpose. In the Babylonian account, the gods arise from the formless without any conscious intention. Human lives are determined by the conflicts of the gods, which, again, depend on chance outcomes of a perpetual supernatural contest for power. In such a worldview, there are religious practices—devotion