Review of Dixon, *Science and Religion: A Very Short Introduction*

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Dixon T 2008. *Science and religion: a very short introduction.* New York: Oxford University Press.

Introduction

I have read many books on the theme of the science and religion debate. Some have enthralled, while others have disappointed. This book, however, is one of the more delightful and informative introductory books I have read and reviewed on the subject. This particular book is part of the *Very short introduction* (VSI) series printed by Oxford University Press. All the subjects in the series (which number a few hundred) are written by experts in various fields, with the purpose of giving a brief, but fairly concise introductory synopsis of a particular subject. It seems that the authors endeavor to make the information accessible to lay people, helping them grasp the basics content of the particular subject.

In the case of this book in the series, the author's insight and historical background to the intriguing interaction between science and theology are, simply put, a wonderful breath of fresh air. Unfortunately, there are many books written on the subject of science and religion which do not highlight and comprehend just how complicated and politically motivated these debates have become. More often than not, books on the subject tend to concentrate on the arguments—creating in the

process their own arguments—rather than on the 'why' of the argument.

Dixon, a senior lecturer in history at Queen Mary University of London, and a member of the International Society for Science and Religion, skillfully unpacks the debate (as best he can in such a short volume), and focuses on issues pertaining to the motivation and intentions of the science and religion arguments. He then repacks it in a way that even a layperson, with little knowledge of the subject, can grasp the fundamental issues, and why the debates are often so emotionally charged.

1. Chapter 1: What Are Science-Religion Debates Really About?

The opening chapter immediately answers the question that is, in my view, often missed in the science and religion debate, namely, what is the debate really about? In other words, what is each group arguing about, and what is the motivation behind the often heated arguments on the subject? From the outset, one must understand that this book focuses more on the history of the argument (with many test cases explored), rather than the arguments themselves. Having read several reviews of this book, I found that most criticism centered on the author's non-criticism of the debates themselves. However, the book clearly states that this is *a very short introduction*, not a lengthy treatise on the subject.

Chapter one commences with one of the most famous historic cases on the conflict between science and religion, that being between the Catholic Inquisition and Galileo Galilei that took place in June 1633. Dixon explains what the trial consisted of, and how it impacted on the

Catholic Church and the scientific fraternity at the time. The main focus is on what the conflict was about, that is, who was actually responsible for disseminating knowledge? Is it the Church, or is it the scientific fraternity? In Dixon's view, it was about the politics of knowledge, rather than a scientific and religious concern. It is political, in the sense that it has to do with the nature of reality and who has the authority to discover and describe it, and by what methods. One quickly realises that the Catholic Church at the time was more of a political establishment (which in my view it still is today), rather than a purely religious one with religious concerns.

Dixon then discusses briefly the controversy surrounding Darwin's *Origin of Species*. Here, Dixon makes a curious observation, namely, that the Darwin debate was not religious, but rather, it was one about science and religion. By this, he means that Darwinian ideology maintains that humans are nothing more than evolved animals, which is not only seen as an insult to religious beliefs, but also to human morality and ethics. However, it must be stated that Dixon is an agnostic, not a Christian. Therefore, it seems that his rationale for writing this book is not to weigh religion against science, or *vice-verse*, but rather, to deal with the bigger question: why is the debate continuing, and why is it so intense? Thus, this book is objectively written, and for this, I commend him.

2. Chapter 2: Galileo and the Philosophy of Science

Chapter two is the commencement of in-depth historical case studies, specifically Galileo Galilei *vis-à-vis* a philosophy of science. The main question that Dixon explores in this chapter is this: how do we know anything? Providing a credible answer to his question is clearly a task for the philosopher. Dixon demonstrates how knowledge is acquired

(epistemology), and suggests four sources, namely: one's senses, one's power of rational thought, the testimony of others, and one's memory. I found this idea to be quite enlightening. In a Christian conception of general revelation within a philosophy of theology, the three sources for acquiring knowledge are nature, God's work in history, and the human make-up. This section, then, rightly argues against these four principles of source, by stating that one's senses may deceive, one's reasoning can be faulty, other people can knowingly or accidentally mislead, and lastly, with increasing age, one's memories can certainly become partial and distorted.

A claim is set forth, that human knowledge of the natural kind, is made rather than found. This is another interesting statement, since Psalm 19 clearly states that what may be known of God is revealed in nature. To solidify this claim, Dixon cites the 17th century advocate of science, Francis Bacon, who wrote that 'all knowledge appeareth to be a plant of God's own planting whose spread and flourishing then had been divinely ordained'. In other words, what people would perceive as mere nature, is divinely orchestrated to reveal God. In the chapter, Dixon goes on to explains what is meant by this, that is, natural theology is a form of discourse about God, based on human reason rather than on revelation (I suspect that the work of William Paley was consulted here).

The chapter then moves on to explain the rise and fall of Galileo, expressing that Galileo belonged to this last category of believers, seeking harmony between the Bible and knowledge of nature. The chapter further identifies something of which many are unaware, namely, Galileo endorsed the view that the Bible communicates how to go to heaven, rather than how the heavens go. In other words, if one wanted to know about matters pertaining to salvation, one should

consult scripture. However, if you were interested in the detailed working of the natural world, then, there are better starting points, namely, empirical observations and reasoned demonstrations. It is here that Dixon initiates his case study on Galileo, and what took place historically.

Galileo, after observing that the world was not the centre of the universe (as taught by the Catholic Church), presented his findings and began his brief crusade of trying to convince the church that they were wrong, and that the scriptures they were utilizing in order to prove geocentricity needed reinterpretation. It is here that Dixon states that the argument was rather political. In other words, who had the authority to make such statements; Galileo or the church? Clearly, the church had much power over the people. According to the Catholic Church, they were the custodians of knowledge and were the only authorised vehicle to disseminate this knowledge to the people. Galileo had no right then, in their view, to make any public statements that contradicted this.

Unfortunately, Galileo came against an institution that had the political power to make creeds and orders, and to call people to judicial meetings. The church, at the time, answered to no one, except the hierarchy within it (I do believe that not much has changed today). Galileo, unfortunately, as a scientist and philosopher seeking truth, had walked into a virtual minefield of political power. Clearly, he did not stand a chance. Galileo's views and actions led to him being tried by the Inquisition. It must be added that Galileo did have a friend in the cultured and educated Maffeo Barberini, Pope Urban VIII, as brought out by Dixon. However, history shows that Galileo, against the express desire of this Pope, printed his findings (using the mathematical equations of Copernicus to validate his findings), which led to the Pope censuring Galileo's work.

3. Chapter 3: Does God Act in Nature?

In my view, this is a fascinating chapter, perhaps because, as a theologian, nature has a special place in my heart. Loosely, I also believe that God and nature are one, but not in the mode of pantheism, but rather, panentheism. God certainly uses his creation to further his plans, but the life of nature flows from him. This is made clear in how God, throughout scripture, uses the elements to speak and guide people in his providence. Dixon shows this by numerous references to how God does this, including the ability of God to either directly or indirectly, through specially chosen prophets, contravenes the laws of nature to achieve his will. Some references are made to parting the Red Sea, the plagues, manna from heaven, Jesus walking on water, and so on.

Dixon them moves on to what he terms *the theologians' dilemma*. By this, he means that theologians are faced with a seemingly impossible task of making sense of divine actions in the world. The part that caught my attention is his discussion on the question, why God acts in some cases, and not in others. His answer is interesting. Perhaps it is a method that God uses to keep people focused on him in faith, meaning that if God intervened in all situations, why would people need faith? He further states that perhaps God is now working through secondary channels, that is, through structures such as the medical profession in dealing with sickness and disease. I have always upheld, in my own practice of theology, that this is the case, especially in this day and age of technological advancements.

Next, Dixon turns his attention to the laws of nature, and deals with the icons of revolutionary science, such as Isaac Newton, Robert Doyle, René Descartes (to mention but a few), and discusses the following

question that is probably asked by many Christians today: did the discoveries of these men relegate God to a 'God-of-the-gaps'? By this, Dixon means to investigate whether the laws that govern nature give the expression that Deism is a preferred belief? Deism simply states that God set up the universe through a set of prescribed laws to bring about creation of life, and was has not seen since.

There are different ways of thinking about the laws of nature, explains Dixon. They need not be seen as entities or forces that somehow constrain all of reality. Instead, they can be interpreted as God's mechanism of keeping order. For God to perform any miracle, he only has to tweak the laws (e.g. the floating axe head, or Jesus walking on water). I sensed a little of CS Lewis's book, *Miracles*, being expressed here, a work that I highly recommend.

Dixon moves on to a subject that, I feel, is best left to physicists, namely, quantum mechanics and the fine-tuning of the universe. I am currently reading Brian Greene's, *The elegant universe*, which is a book on string theory, an offshoot of quantum mechanics. I can categorically state, that I find the subject very difficult to understand. But be that as it may, I certainly stand in agreement with Dixon when he observed that this branch of physics has done much to overturn the cemented ideas of Newtonian laws. Overall, this chapter was interesting and informative.

4. Chapter 4: Darwin and Evolution

The chapter commences with a brief review of Darwin and considers the way his work impacted society.[67] Dixon spends a fair amount of

[67] I have much passion for this subject, and perhaps a person for whom I have much empathy. If anyone has not read anything on Darwin and would like to, I would

time discussing Darwin's religious odyssey, and how this impacted his work. He further gives details of Darwin's family, and the pain he went through in dealing with an influential father and elder brother, who both rejected Christianity, and a wife, who was faithful to her belief in God. Without studying Darwin's personal life, few would understand what he went through and perhaps why he was an agnostic rather than believe in the existence of a personal God. Having read much on Darwin, I found Dixon's information to be accurate and sympathetic.

The chapter then describes concisely and accurately Darwin's theory of evolution and natural selection. Dixon commences with Darwin's discoveries during his Beagle voyage and how this influenced him, and then moves on to highlight the scientists and intellectuals of his era that inspired him while developing his theory, i.e. Charles Lyell (geological principles), William Paley (how things can change slowly across long periods of time) and Thomas Malthus (on population). It was Lyell's work on geological principles that had the most effect on Darwin, and led him to develop his theory of 'evolution over long periods of time'. In fact, Lyell and Darwin became good friends, leading Lyell to be the first scientist to support Darwin's work.

The final segment of the chapter is an account of the furious 1860 debate on evolution between Darwin's friend Thomas Huxley, and Bishop Samuel Wilberforce. Often, it is acknowledged that Huxley's argument for Darwin's work is still a force to be reckoned with in debates today. However, with the 'evolution' of knowledge, and how we understand the world to have come about, Darwinism seems to be

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suggest the other excellent *VSI* book, *Darwin*, which is only 125 pages, but provides a good survey of Darwin, who he was, and what his work was about.

losing ground. This is especially so with the rise of Intelligent Design (ID) and other alternative ways of looking at the science of life.

5. Chapter 5: Creationism and Intelligent Design

The chapter begins with a brief scientific introduction to ID, and how the movement arose. It also explains what the movement is about, and briefly discusses some of its proponents, including some of their controversies. One of the controversies specifically dealt with is the ID movement's attempt to get their view of evolution accepted into the American schooling system. To give a background account of this, Dixon addresses a controversy that has generated much debate, namely, the March 1925 Scopes Trial held in the American town of Dayton. The debate generated so much publicity over time that it resulted in making the1960 film Inherit the Wind, a loosely based biography of the event. The trial was often referred to in the media as 'The Monkey Trial', an obvious reference to the Darwinian idea of evolution from ape-like creatures. In this chapter, Dixon does a fairly thorough examination of the trial and the subsequent results and fall-out. Much unnecessary controversy was created by this trial, which has led more people to take a 'dim' view of evolution. The chapter clearly exposes the underlying motives for the trial, and why it had little to do with the science versus religion theme.

On the 21st of March 1925, Austin Pay, the governor of Tennessee, signed an Act that made it unlawful for a teacher employed by the State of Tennessee to teach any subject—especially evolution—that was contrary to divine creation as taught by the Bible. This is where Dixon makes the right connections. He shows that it had little to do with science and religion, and more to do with greedy businessmen and lawyers.

The American Civil Liberties Union saw the passing of this legislation as an excuse to take a stand for intellectual freedom. They placed an advertisement asking for a volunteer to bring a test case. Some of the lawyers and businessmen from Daytona saw this as an opportunity to put their town on the map, and persuaded a local science teacher, John Scopes, to be the volunteer. Although John Scopes was convicted for teaching something that is contrary to divine creation as taught by the Bible, and the businessmen and lawyers got their fame and fortune, it would be another forty years before another trial pitting evolution against creationism would take place. This subsequent trial is often referred to as the Dover School Trial and probably created just as much controversy as the Scopes Trial had.

The Dover School trial is possibly the most widely known trial to have take place in America, perhaps because of the vast technology available to disseminate information. It pitted ID against scientific evolution. The idea behind the ID movement was to demonstrate that the science it presents could be taught in schools, yet it would not push a creationist belief. This meant that the term 'Intelligent Design' could refer to anything, and upheld that when understood correctly, it was a viable alternative to the strict biblical creationist view rejected by the American school system. The ID movement further maintained that it held no specific loyalty to any organisation or view, and that its methods in presenting science were legitimate. Dixon unpacks the arguments carefully, taking no one's side in the debate.

The results of the Dover trial, was that ID was shown to be nothing more than creationism packaged in a different format. Its use of science, especially biology, was shown to be flawed and unacceptable as an alternative to the Darwinian science and biology currently being taught in American schools. The chapter concludes with Dixon seemingly

making a veiled call for acceptable scientific systems to reassess at the tenability of teaching intelligent design in schools, and expressing hope that some good may still come of this peculiar American controversy.

6. Chapter 6: Mind and Morality

This last chapter in the book is probably the most difficult to understand, although it is the shortest. I would reason that it is perhaps a subject matter which is best left to philosophers of the mind and ethicists of morality.

But be that as it may, Dixon commences his final chapter with a statement that religious responses to evolution in all traditions continue to centre on questions about human nature. For example, how can human beings, created in God's image, also be nothing more than improved apes with mushrooms for cousins? Although this is an interesting and humorous statement, it is non-the-less a statement that has been answered reasonably, in my view, by a growing number of biologists and scientists affiliated to Biologos, an organisation that promotes a belief in theistic evolution. Dixon further comments that since the 19th century, scientific studies of the brain and mind (there is a difference) have provided further challenges to religious beliefs. By this, presumably Dixon means that science is attempting to show that the soul, so important in Christian belief, is nothing but a product of brain activity. It seemingly suggests we are nothing but products of materialism, determinism, and blank atheism, dictated by neuro-transmitters in the brain and events surrounding ones environment. He then poses the question pertaining to what does this mean for belief. It is these types of questions he attempts to answer in this chapter. He begins with the idea of the soul being immortal, and cites ideas of other

religions as proof that humanity collectively believes that wisdom and salvation are found in the life of the mind.

Next, Dixon discusses issues relating to the brain and mind, dealing with the question that scientists began posing as early as the beginning of the 19th century: if the brain is a product of the mind, how is it possible for an immortal soul to exist? The mind and the soul seem to co-exist. It may seem complicated, but the study of 'craniology' or 'phrenology' appears to imply that the traits which many hold as indicators of God's image in humans would be questionable.

Although many scientists since then have raised questions as to the methods used to come to these conclusions, the basic ideas of phrenology, showing that mental functions do correlate with different parts of the brain, seems to be fruitful. Dixon, however, does not leave the question hanging. He goes on to explain that although there have been many recent studies undertaken on brain activity; it now seems as if there are parts of the brain that are involved in religious experiences.

Dixon continues and delves into the philosophical belief systems of dualism and physicalism, two concepts that differ much when applied to theology especially. The idea that he explores here is the compromise of science when utilizing and applying the idea(s) of dualism. Since some scientists have come to realise that there is a realm beyond this one, they have had to dig deep to explain it, without becoming 'religious'. Their reluctance to accept a spiritual realm has led to the formation of the following idea: the' spiritual' realm is not spiritual *per se*, but rather, dual—mental and physical.

However, this does not solve the argument, as correctly stated by Dixon. Having evaluated dualism from many angles and perspectives, I find it to be a weak compromise. Dixon rightly states that the problem

with dualism is the following: how can the physical and the non-physical causally interact with each other, and why should dualism be preferred to the simpler alternative of physicalism?

This is where Dixon highlights an interesting idea. Even if all mental experiences are, in some sense, physical, it is still not a straightforward explanation of what that sense is. Why is it that some parts of matter, that is, complex nerve cells within animals, exhibit the property of consciousness, while others, such as rocks, vegetables, and even computers, do not? This is an interesting question, and one that I have studied extensively. Dixon rightly states that philosophers and theologians have attempted to answer this question by utilising concepts such as 'emergence' and 'supervenience'. This simply means that the mind, although autonomous (i.e. it can live independently from the brain), cannot be reduced to a neurological level. Although I would have liked Dixon to explore this in more depth, he stops short of saying that, or perhaps even alluding to the idea, God works at molecular levels, and brings up and upon people his presence and will.[68]

Other topics in this chapter include issues around the bodily resurrection of Jesus and subjective immortality, topics which are best left to philosophers or theologians. Thus, Dixon's ideas seem a little offbeat, as he over relies on neuroscience to explain issues that are religious in nature. Perhaps only now are some scientists beginning to realise the depth of the subject matter.

Finally, Dixon addresses the issues of selfishness and altruism, two thought-provoking subjects which, as stated earlier, are also best left to ethicists. Although this topic is too vast to explain in a few paragraphs,

[68] See my article, Human Freedom and God's Providence: Is there Conflict? *Conspectus* 8(2):62-75.

he must be commended for trying. However, I would have non-the-less preferred that Dixon left this chapter out, and replaced it with something that is more in line with the overall subject matter.

7. Negatives

Perhaps Dixon could have gone into a more detailed analysis the medieval age, and how the discoveries of that era affected the way we do our theology and science today. Also, I would have welcomed the addition of material that explores how the unfolding ideas of philosophers of the last three centuries have shaped our current understanding of cosmology, for this is an important part of the science and religion debate today. Lastly, I suspect that Dixon errs disproportionately on the side of science. However, he may be forgiven, for like Darwin, he is an agnostic and a historian. The positive aspects of the book far outweigh the negatives.

Conclusion

Overall, this is a great little book that does much in bringing one a little closer to understanding, and maybe, having a greater respect for the science and religion debate. This would, I hope, also include a little sympathy for those scientists, especially Galileo and Darwin, who, over time, have taken such unnecessary criticism from the public and religious organisations in general, because they have been misunderstood, or misrepresented.