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Science and Religion— an introduction

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An initial set of questions which might be suggested by the title is:

- What is meant by science?
- What is meant by religion?
- Is there any interplay between the two disciplines?
- If so, where does this interplay occur?
- What is the nature of the interplay?
- How has the interplay been perceived? — an historical question.
- Can the perceptions be justified? — a philosophical question.

It is unnecessary for present purposes — and certainly risky — to attempt a definition, let alone a rigorous analysis, of what constitutes science or religion; the debates about demarcation criteria are extensive. As far as science is concerned, the physical, life and behavioural sciences are in mind. With reference to religion, the issues under review are mainly connected with major world religions which include articulated theologies in which cognitive claims are being made. Particular attention is paid here to the Christian religion.

Is there any interplay between the two disciplines?

A quick answer to this question is 'yes', both currently and in the past. Accounts of this interplay can be given from historical and sociological perspectives. Whether there is any justification for the claims made about this interplay is a separate matter — a philosophical one.

Where does this interplay occur?

A shorthand way of remembering the categories into which the various aspects of the interplay can be placed is to think of the *'DNA'* of science and religion. Interplay between science and religion occurs over the *data*, the *nature* and the *applications* of science.

The Data of science

Certain scientific discoveries appear to have conflicted with what some people have believed the Bible teaches. This raises questions about the respective literary *genres* of the parts of the Bible under review and the nature of religious language. Trying to read changing scientific ideas out of — or into — specific texts has been, and continues to be, a perilous undertaking.

Examples of some of the issues which have arisen are, the position of the earth in space, the status and age of the earth, the origins of the universe in general and of humans in particular. In addition, the apparent 'fine tuning' of the physical constants, which make life as

we know it possible, has attracted attention. It will be apparent from my use of the word 'discoveries' that I am adopting a realist epistemology, namely that a world exists largely independently of observers and that the task of science is to try to find out about its composition and working. Theories of human nature, based on empirical studies, have also connected with Christian views on the subject.

The Nature of science

Interactions between science and religion have also occurred because of what has been seen as the nature of the scientific endeavour. Some people, for example, have thought that science's assumption of the uniformity of nature renders miracles impossible, or that divine creation is contradicted by the Big Bang. Others have imagined scientific explanations to be the only valid ones; and that reducing everything to accounts of constituent atoms and molecules exhaustively accounts for everything. In the nineteenth century, notions of determinism appeared to undermine ideas of freewill, while scientific proof was deemed necessary for everything, whether scientific or not. Furthermore, science has been viewed as an example of clarity in its use of language, in contrast to religion which is often accused of using obscure talk about harps, thrones and old men in the sky.

The Applications of science

A third set of interactions has arisen out of the ways science and technology are applied. Although moral codes are not necessarily based on religious beliefs, religious beliefs inform moral judgments about such matters as the use of Earth's resources and appropriate criteria for evaluating decisions in the realm of medical ethics.

What is the nature of the interplay?

There are many ways of stating the nature of the interactions. Barbour's fourfold typology of conflict, independence, dialogue and integration is often cited:

Conflict

This is the dominant and persistent view of popular folklore. Science (usually equated with certainty, progress and clarity) and religion (usually equated with darkness, ignorance and superstition) are seen as locked in a never-ending struggle, with science as the inevitable winner. Both the data and the nature of science are portrayed as antithetical to religion, science setting the criteria for what can rationally be believed.

But the 'conflict thesis' is also found among some Christians and may originate from an over-literal reading of the Bible, one which fails to take into account literary *genre* and how language is used in religious discourse. In the forty books of the Bible, over thirty different literary *genres* have been identified.

So, the first of the conflict positions detailed above sees science as the final arbiter of the truth or falsity of the biblical records, often read in a literalistic way, and judges them to be inaccurate. The second position sees the biblical records, which also may be read in a literalistic way, as the final arbiter of what constitutes true (creation) science.

Perhaps the most widespread misunderstanding in popular writings of an adversarial kind concerning science and religion is that there is only one type of explanation — usually a scientific one. But as Flew points out;

> 'there is not just one single, *the* explanation for anything which we may wish to have explained. There may instead be as many, not necessarily exclusive, alternative explanations as there are legitimate explanation-demanding questions to be asked.'[1]

There is no logical incompatibility between scientific explanations in terms of mechanisms and religious explanations in terms of divine agency and purpose.

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1 Flew, A. (1985) *Thinking About Social Thinking: The Philosophy of the Social Sciences*, p.40, Oxford, Blackwell

Independence

Arguments that the disciplines of science and religion occupy watertight compartments are varied. One common stance taken is that science and religion are asking different questions and use different methods. It is often expressed by saying that science answers 'how?' questions and religion 'why?' questions. But this simple distinction trades on an ambiguity in the word 'why'. Science can ask 'why?' questions as well. The question 'why am I here?' can have scientific answers in terms of evolution and the fertilisation of embryos as well as religious answers in terms of divine agency and purpose. Another approach to separating the two disciplines employs the distinction between primary and secondary causation. Yet another strategy is to resort to some form of reasoning derived from Wittgenstinian Language Games.

Dialogue

The position referred to as *dialogue* involves comparing and contrasting the methods, presuppositions, language use, and concepts of science and religion. For example, science can guard the exegete against poor interpretations of some biblical passages.

The presuppositions of science — rationality, orderliness, intelligibility and uniformity — can be compared and contrasted with the acts of faith of the believer. The employment of metaphors and models in both religious and scientific discourse repays careful study since both disciplines grapple with the problem of being articulate about that which is novel, invisible and conceptually difficult. The counterintuitive nature of science, particularly of contemporary science, can encourage a greater humility, while the ways in which science raises metaphysical questions, which science itself cannot answer, readily prompts religious questions and dialogue.

Integration

Into this category fall those who wish to reformulate traditional theological thought. Barbour identifies three versions of integration:

> 'In *natural theology,* it is claimed that the existence of God can be inferred from (or is supported by) the evidence of design in nature, of which science has made us more aware. In a *theology of nature,*[2] the main sources of theology lie outside science, but scientific theories may strongly affect the reformulation of certain doctrines, particularly the doctrines of creation and human nature. In a *systematic synthesis,* both science and religion contribute to the development of an inclusive metaphysics, such as that of process philosophy.',[3]

2 One possible confusion in the term theology of nature is that it is also used for theological approaches to the management of the environment.

3 Barbour, I.G. (2000) When Science meets religion, p.27f, London: SPCK

How has the interplay been perceived? — an historical question.

If we go back no further than four hundred years, to the early days of 'modern' science in the West, we find that the first three hundred years of the meteoric rise of modern science were largely ones in which science and Christian belief were seen in harmony. This was despite the Galileo affair which had some deleterious effects on Italian and other science. Many of the early Fellows of the Royal Society of London, founded in 1660, were in Holy Orders (including its first historian) and the 'Two Books' metaphor was widely employed. Here, God is seen as having spoken to humankind in two great 'books' — the Book of Scripture and the Book of Nature. The Book of Scripture is the Book of God's Words — about the creator — while the Book of Nature is the Book of God's Works — about the creation. Interestingly, Charles Darwin prefaced the Origin of Species with one of Bacon's 'Two Book' passages taken from the *Advancement of Learning:*

> 'To conclude, therefore, let no man out of a weak conceit of sobriety, or an ill-applied moderation, think or maintain, that a man can search too far or be too well studied in the book of God's word, or in the book of God's works; divinity or philosophy; but rather let men endeavour an endless progress of proficience in both.'

The 'conflict' view of science and religion, referred to earlier, is largely a product of the nineteenth century struggles of a growing profes-

sional elite in science to wrest the cultural supremacy from the (unpopular) Established Church and make it its own. The self-styled 'bishop' of this movement was, of course, T. H. Huxley, loyally supported by the other eight members of the Victorian X-Club, and by other groups of sympathisers.

The last decade or two of research in history of science, however, has revealed a picture of the interplay between science and religion very different to the popular perception of conflict. The inadequacy of the 'conflict thesis' as a general historical account of how science and religion have interacted has been spelt out in detail by historians of science such as Professors Geoffrey Cantor, Peter Bowler, John Brooke and Colin Russell. Cantor encapsulates this view thus:

> 'The various forms of the conflict thesis have attracted much support, but they are not adequate as general claims about how science and religion have been interrelated in history. To extend the military metaphor, the conflict thesis is like a great blunderbuss which obliterates the fine texture of history and sets science and religion in necessary and irrevocable opposition. Much historical research has invalidated the conflict thesis.'[4]

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4 Cantor,G. (1991) *Michael Faraday: Sandemanian and Scientist*, p.290, Basingstoke: Macmillan

Can the perceptions be justified? — a philosophical question.

The final question of our set is, of course, a starting point rather than a conclusion. It points to a journey of enquiry into the grounds for asserting or denying particular views of the interplay between science and religion and takes the investigator into an examination of specific issues which support of detract from these views.

Further Reading

Barbour, I.G.(2000) *When Science Meets Religion,* London: SPCK

Brooke, J.H. (1991) *Science and Religion: Some Historical Perspectives,* Cambridge: CUP

Lucas, E. (2001) *Can we believe Genesis today,* (2nd ed.), Leicester: Inter-Varsity Press

Polkinghorne, J. (1998) *Science & Theology: An Introduction,* London: SPCK

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Russell, C A (1985) *Cross-currents: Interactions between science and faith,* Leicester: Inter-Varsity Press; reissued (1995) Christian Impact

Trigg, R. (1998) Rationality and Religion: Does Faith Need Reason?, Oxford: Blackwell

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