# SCIENCE, REASON & RELIGION

Derek Stanesby

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Beware lest any man spoil you through philosophy and vain deceit. (Saint Paul to the Colossians 2.8)

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# PREFACE

The relationship between science and religion is one that has received increasing attention in recent years, and the attempt to exploit some of the implications of molecular biology and the new physics has given it fresh momentum. However, much of this work is misguided and philosophically flawed because the term 'science' is used uncritically, often with a deference combining reverence with suspicion, as if it were obvious to all what it is that distinguishes science from non-science.

Some writers attempt to establish theology as a science, thus abolishing the distinction; whilst others hanker after an all-embracing synthesis of natural science and dogmatic theology after the manner of Aquinas; and there are those, following Teilhard de Chardin, who reckon that by extending the boundaries of science we enter the realm of religion; some with modern cosmological theory in mind even suggest that science is the new religion. Most common of all are those who speak of two levels of truth, scientific and religious; or who, bowing to the authority of science, happily relegate religion to irrational faith.

An attempt is made in this book to evaluate critically the notion of science, to examine some of the assumptions implicit in its use, and to suggest that the links between science and religion are to be discovered at a much deeper, philosophical level. It is very much a ground-clearing exercise. But the ground must be cleared, our presuppositions examined, and implicit epistemologies exposed to criticism.

Such is the task of philosophy, and it is of crucial importance. Philosophy is not a detached, esoteric pastime for a gifted and leisured elite; it is fundamental to all our thinking. Philosophy affects the lives of ordinary people, for all human institutions are dependent on an epistemology of one sort or another. The danger today is that the sort of intellectual enquiry which is characteristic of philosophy is being sacrificed to the gods of pragmatism and productivity. Although many of the questions of philosophy are ongoing, some problems can be solved, and the exercise can be stimulating and exciting. But it involves patience and persistence, a constant wrestling with problems, and an acquaintance with the strivings and attempts of others, particularly of the intellectual giants of the past. Philosophy has an indispensable history.

Consequently a critical account is offered of the main movements in philosophy of science this century, of their influence on epistemology in general and on religious thought in particular. The powerful and all-pervading influence of positivism, and its offspring relativism, is examined, and hitherto unexplored implications of Karl Popper's philosophy of science for theology suggested. Authoritarian claims to truth and certainty in science are rejected, and the fallibilism of scientific knowledge is extended into theological thought, so replacing fixed and eternal dogma with tentative knowledge, always open to criticism and amendment. This is the area in which science and religion can find common ground and thus remove from man's mind the shackles of authoritarian dogmatism which stifle and enslave the human spirit with such disastrous consequences.

Such are the ingredients of this attempt to explore the implications of philosophy of science for philosophy of religion. Hopefully it may provide a much needed turning point for the philosophy of religion, and help to put theology back on the larger intellectual map where it belongs.

I would like to record my gratitude to some of the people who have inspired and supported me in this task; to Professor Raymond Plant for some useful and stimulating early discussions; to Dr David Lamb for his later supervision of this work for a doctoral thesis, and for his kindness and many helpful suggestions; to my friend Mr T.A. Greenslade for carefully typing the manuscript and for his astute and invaluable criticism; and above all to my wife Christine, for her unflagging support and encouragement. I would also like to thank the people of St Chad, Ladybarn, for their support and for relieving me of so many parochial duties whilst I was writing this. All of which goes to show that the writing of books is a corporate enterprise.

Finally I would like to dedicate this book to all parish priests, in the hope that in some remote but significant way it may give them courage to persist and help them to discern good philosophy from vain deceit.

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# INTRODUCTION

In the Middle Ages theology was described as the 'Queen of the Sciences', that is, the highest and most authoritative form of knowledge. All rational enquiry had to conform to the canons of theological thought. The knowledge of God surpassed all other knowledge, and there was a sense in which all knowledge was subservient to the revealed truth of God, systematised by theologians and given the imprimatur of the Church. The religious view of the world dominated all thinking, and whenever there were clashes the religious view won the day.

This is not to say that there were clear and separately established disciplines, for example of religion, or theology and science.[1] Although Christian natural theology formed the seed bed for a later secular natural science, theological and empirical speculations were intimately related and interdependent. Christian theology was certainly not hostile to the spirit of empirical enquiry – in fact, the one encouraged the other; but because of the conception of rationality that held sway, empirical questions were contained within the overall metaphysical view of the day. If there was conflict it was between new ideas and old, rather than between religion on the one hand and science on the other.[2]

An earlier example of such conflict comes from fifth-century Athens, from which Anaxagoras was expelled for describing the sun as a red-hot stone. His views were contrary to the prevailing view of the world. But this was no clash between science and religion, because there were no recognised boundaries between them. It is an early example of the clash beween new ideas and old. It is only with hindsight that we discern a scientific spirit of enquiry emerging among the Ionian philosophers.

The great divide between science and religion was heralded by the Copernican revolution of the seventeenth century. From the time of Galileo onwards natural science, as a source of knowledge, developed with a life of its own. Although scientists such as Galileo and Newton were in the main religious men who subscribed to the beliefs and practices of the Church, natural science became independent of religion and of theological enquiry. Nevertheless, the religious view, particularly that resulting from Christian natural theology, continued to assert a strong influence over men's minds. This was as true of Einstein in the

twentieth century as it was of Newton in the seventeenth century and of Kepler and Copernicus before him.[3]

Today natural science rules as queen over all and is commonly accepted as the supreme source of all knowledge. One of the most influential thinkers of the twentieth century, Bertrand Russell, rooted his diverse and wide-ranging philosophy in such an assumption; and Karl Popper sees science as providing the best example of the growth of knowledge, therefore it is only through a study of the nature of scientific knowledge that one of philosophy's central concerns, epistemology, can be pursued. The tables have been turned. Contemporary religious thinkers now tend to take the authority of science for granted and they try to match their theology to the prevailing Western scientific tradition.

It is part of the task of philosophy to examine assumptions and presuppositions which underlie knowledge claims, and which underpin the institutions constructed upon them. Such philosophical enquiry has been directed to both science and religion. Religion has tended to come off by far the worse; it is found to be on very shaky ground when under the microscope of philosophical scrutiny. Certainly the British empirical tradition, from Locke to Hume to twentieth-century positivism, has been highly destructive of the claims of religion, whilst at the same time elevating natural science as the paradigm of all rationality.

But has Western science intellectually eclipsed religion as a rational activity? Religious practices continue; people still pray and worship and profess religious beliefs. And yet it is often asserted that contemporary natural science has relegated all religious belief and practice to the realm of pre-scientific ignorance and superstition. For this reason religion has been very much on the defensive. Religious thinkers have increasingly tended to accept uncritically the prevailing philosophical fashion and have attempted to use its methods in order to provide a rationale for religious belief and practice. This is as true of twentieth-century reductionism as it was of nineteenth-century Modernism. More recently, as a reaction to positivist assertions of the meaninglessness of metaphysics, and therefore of all religious talk, a whole generation of philosophers of religion, following Wittgenstein, has devoted its efforts to the examination of religious language. But such attempted defences of religion come from within the religious tradition; they are very much defences of something under attack. The battle is fought on terms dictated by the critics. Passing references, often of a most superficial and patronising nature, are made to science and its knowledge claims, but scientific activity is generally viewed as a well-established

and philosophically sound enterprise which is immune to the manifold maladies with which the religious apologist has to contend.

However, there has developed in recent years an increasing interest in the philosophical examination of scientific thinking and practice. The philosophy of science is now one of the major areas of philosophical interest, as our subsequent discussion will indicate. The results of such enquiries have revealed widely differing accounts of the practice and rationale of science, and it would appear that in many respects the philosophical assumptions and presuppositions on which many have claimed that science is well based are as shaky and questionable as those on which religious beliefs and practice rest.

The purpose of this book is not to attempt to offer a philosophical defence of religion, nor to contribute to the age-old debate about the existence of God, nor to secure religion on sound, incontrovertible philosophical principles in order to provide it with a worthy intellectual status. Still less do we wish to make the misguided attempt to rehabilitate religion as a sort of science. Rather, we wish to examine the intellectual basis of science in order to demonstrate that the philosophical problems it throws up have much in common with those at the philosophical roots of religion; that the metaphysical assumptions of one are germane to the rationality of the other. Indeed, our discussion will be very much concerned with the whole notion of rationality and the various attempts that have been made to establish the canons on which rational thought is based. Our main concern will be a critical examination of some of the attempts to characterise science, and to identify the philosophical implications for religion that emerge from such philosophies of science. We will attempt to demonstrate the continuity and interdependence of philosophical ideas in science and religion; to show that common lines of philosophical thought run through both; that the fundamental questions are philosophical; that philosophy matters; above all to show that philosophy matters for two of man's greatest concerns: with God and with the world.

Both science and religion are human activities; each contributes to the characterisation of civilised man. Each has a profound bearing on human life and aspirations and achievements. They use a shared human language derived from common origins. Each begins at the same roots of puzzlement and enquiry, of wonder and awe, and the desire to find out how and why the world is. The fundamental concern of each is to grapple with the world and the place of man in it; to make some sort of sense of life; to discern some sort of order in the world. The one provides the assumptions and motivation for the other.

And yet science and theology tend to go their own separate ways. University faculties of science and theology seldom relate to one another. A person may go through life steeped in either scientific or theological learning and never attempt to relate, at least in any depth, his thought and discipline to the other. Theology and science are carefully segregated, few cross references are found in books. The one thing that scientists and theologians do share is a profound ignorance of each other's discipline. From the scientist's point of view theology is not empirically based and is therefore irrelevant to science. From the theologian's point of view science is not a part of the Biblically based revelation and is therefore irrelevant to his theology. Each searches for, and finds, within his own subject, authority. Although he allows criticism from within his own chosen field, criticism from without is either not heard or considered as an illegal, unwarranted trespass on his own chosen field.

There is no one philosophy of science, any more than there is one philosophy of religion. Although many of the questions and arguments are perennial, each is a continually developing subject. This is particularly so in the philosophy of science in which there has been considerable movement of thought in the middle years of this century. We have selected three of the most important movements which we label *positivism, Popperianism* and *relativism*, and have indicated their implications for the philosophy of religion. Consistent with the view that an understanding of the philosophy of science is fundamental to the philosophy of religion, we have attempted to offer fairly detailed and comprehensive accounts of the philosophical positions concerned. In the first instance an attempt has been made to give a clear and straightforward exposition, using where possible the words of the philosophers themselves,[4] reserving critical comment to the end of each exposition, followed by the implications for religion. If philosophy of science is important for philosophy of religion, then it is important for the philosopher of religion to understand the philosophy of science on its own terms. This is why we have attempted to view the philosophy of religion from within the philosophy of science, rather than the other way round.

Many of the arguments, like so much in philosophy, are in the end inconclusive. But the *arguments* are of supreme importance, for philosophy affects the way we live our lives, the way we treat each other, the values we hold, and the sort of institutions we construct. In a science-dominated age men hardly need to be persuaded that science is important (in terms of its potential for both good and evil); but we do

need to be reminded that religion is important (again in terms of its power for good or evil), because it takes into account the incredible complexity and limitations and mystery of human nature, without which men wonder who they are.

## Notes

1. On the whole, whilst aiming at clarity, we will avoid the fruitless attempt at definition. The terms 'theology' and 'religion' will be used fairly loosely, sometimes being interchangeable. In general 'religion' will be used as the wider term, embracing the beliefs and practices of people; and 'theology' will refer to the attempt to systematise forms of religious belief into a rational and coherent pattern.

2. The dependence of modern natural science on the presuppositions originally provided by Christian natural theology have been well documented. Following Whitehead's suggestion in *Science and the Modern World* (1938), Michael Foster produced a seminal article (1973) and more recently Hookyaas (1972) and Jaki (1978), among others, have produced detailed and well-argued accounts.

3. Particularly in terms of the harmony and intelligibility of the universe, a profoundly mystical assumption.

4. This is particularly so in the case of Popper, who is quoted liberally simply because his words are better than any summary account. As Anthony Quinton has remarked, 'A conspicuous virtue of his work is the undeviating clarity and definiteness of the language in which it is expressed . . . he has a moral passion for rational intelligibility' (Quinton, 1982, p. 293).

# 1 THE AUTHORITY OF THE SENSES

*The Empirical Tradition: Positivism*

What is the basis of the contemporary esteem of science, its appeal and its authority? For all that there has been an increasing element of disillusion regarding science and its application in the field of human affairs, a disillusion generated by some of the dubious and deleterious effects of applied science and technology, there is no doubt about the hold that modern science has over men's minds and the control it exercises over their lives. Indeed, to the extent that people have become disenchanted with science, that very disenchantment is based on fear; fear of the power and authority and influence of science.

To what is this authority and appeal attributed? It is commonly held that science derives its power and authority from its empirical method; a method that comprises a sure and reliable inference from observation and experiment. Its authority derives from our senses. On the objective base of our sense experience our scientific knowledge is constructed. The corollary to this assumption is that knowledge that is not based in some way on sense experience is rejected as ill founded and illusory. Hence the rejection of religion by a large majority in the science-dominated Western world.[1]

Francis Bacon, in the early seventeenth century, was one of the first to attempt to articulate what the method of modern natural science is, and he became the forerunner of the British empirical tradition. Although he appears to have accepted the doctrines of Christianity as true, and he allowed room for natural theology, Bacon emphasised the distinction between knowledge inspired by divine revelation and knowledge arising from the senses. Bacon was very much concerned with ameliorating man's lot on earth, and for him that utilitarian aim was best achieved not by detached, speculative thought but by the collection of facts through organised and systematic observation and deriving theories from them. He believed that only such a systematic and detailed experimental method would give man new knowledge of the natural world. This new knowledge, derived through the senses, would give man power to transform human life for the better. Bacon's anti-scholasticism led him to reject traditional syllogistic logic as a means of empirical discovery, and he insisted that if we are to understand nature we must consult nature and not the writings of Aristotle.

Bacon inherited from Plato and Aristotle the notion that the mind is tainted by error and false belief, but unlike his Greek predecessors he held that the source of true knowledge is Nature itself, which does not lie. Consequently the mind has to be purged from all anticipations, conjectures and guesses which are the source of error and impurity. The scientist is thus urged to observe the world around him in order to prepare his mind for the unbiased interpretations of nature. Nature, according to Bacon, 'bears the signatures of God, and it is these, the true forms of things, which are the goal of natural philosophy, and not the false images imposed on things by man's mind' (Hesse, 1964, p. 143). Thus Bacon replaced the authority of religious or philosophical conviction, that is the external authority of revelation or the internal authority of reason, with the authority of the senses.

Here we have the roots of the empirical tradition which has had such a powerful influence on British philosophy. Such is the appeal and authority of observation or sense experience that philosophers from Locke to Russell to members of the Vienna Circle have been preoccupied with establishing and refining the empirical method as the only intellectually respectable account of the way knowledge is advanced.

The central concern in this endeavour consists in a scrutiny of the nature and structure of scientific theories in all their diverse roles in the scientific enterprise. Scientific knowledge finds its expression and application in the great variety of theories that is produced in the name of science. Popper ascribes a vicarious role to the theories that men produce. They play a decisive part in the evolutionary scheme and on them our survival depends. Rational man has emerged from the realms of biological evolution armed with theories with which he can test his environment and probe into the unknown. His theories provide him with undreamed of power and control in the world in which he finds himself. The centrality of theories to science in both its practical and philosophical aspects is well attested by recent history. As Suppe observes, 'the last century has provided science with some of its most spectacular, controversial, and revolutionary theoretical episodes in all branches of science – physical, biological and social' (Suppe, 1977, p. 3). We have only to consider Relativity and Quantum theory in physics, Darwinism in biology, Marxism in the political and economic realm, and the work of Freud, Adler and Jung in psychology to be reminded of the profound and far-reaching effect of theories on the affairs of men.

It was, then, to an examination of the theories of science that philosophers turned their attention. And because modern natural science

flourished once it had been freed from its Aristotelian strictures it appeared that the only satisfactory rationale of scientific theorising lay in its empirical method. Scientific knowledge is based on what is given through observation and sense experience.

It was with this basic assumption concerning the crucial role of sense experience that philosophers analysed the theories of natural science. The greatest successes in natural science in the nineteenth century were in the realm of physics, and so it was that physics became the paradigm of science. The philosophy of science in the last century has in reality been the philosophy of physics. The implicit assumption contained in this approach is that all genuine science can be reduced to physics, or that a subject is scientific to the extent that it conforms to the discipline of physics. The appeal of the physical model for modern science is precisely the appeal of the mathematical model for Greek science: that is the appeal of precision and certainty, and therefore of authority.

The positive acquisition of knowledge via one's sensory equipment thus became the hallmark of a theory of knowledge labelled *positivism*. If we have identified the roots of positivism in the writings of Francis Bacon, it was the British empiricist school of the seventeenth and eighteenth centuries that attempted to develop these ideas into a systematic theory of knowledge. Auguste Comte in nineteenth-century France attempted to develop a positive sociology and to provide a truly scientific basis for the re-organisation of society. He shared Bacon's optimism about the benefits of a positive approach to science for humanity. For Comte, his positivistic programme even formed the basis of a new religion in which the worship of Humanity replaced the worship of God. J.S. Mill paralleled Comte's efforts in England with special regard for the logic of science and a general scepticism towards religion. Herbert Spencer developed important and influential ideas on evolutionary theory, emphasising its positive, empirical basis.

This positivistic programme had a hard-headed and commonsensical appeal. Knowledge is based on empirical facts, to be accepted for what they are without going beyond what is given or laid down. The extravagancies of metaphysics and theology which attempted to go beyond the world of observation into first causes and ultimate ends were ruled out of this positivistic programme. All genuine knowledge is contained within the boundaries of natural science.

But it was in the German scientific establishment of the nineteenth century that positivism developed, and it achieved its most powerful formulation in the writings of those mathematicians, scientists and