**Slaying the Dragons** 

"The dragons of the title are the myths, half-truths, and downright untruths that have become fixed in secular thinking and have thus distorted strongly the science–religion debate. The author attacks these dragons with the passion of a latter-day St George and, in a book that is forthright, clear, readable, convincing and sometimes humorous, he sets the record straight. I recommend this book to anyone interested in the relationship between science and religion."

> John Bryant, Professor Emeritus of Biological Sciences at the University of Exeter

"An informed examination of the claim that there is a 'war' between science and religion. Historian of science Allan Chapman shows how this claim is mostly founded on myths and legends. A very enjoyable and instructive read."

Keith Ward, Fellow of the British Academy and Professional Research Fellow at Heythrop College, London.

"In magisterial style, and from an encyclopaedic knowledge of his subject matter, Allan Chapman systematically exposes the multiple myths and flagrant falsehoods propagated by the socalled 'New Atheists'. Chapman convincingly demonstrates how, far from displaying conflict between science and religion, the historical record is shot through with a profound harmony between these two paths to truth, and how Western Christendom provided the fertile soil in which modern science as we know it took root."

The Revd Dr Rodney D. Holder, Course Director, The Faraday Institute, St Edmund's College, Cambridge

"This is a fascinating, timely, and highly accessible study of a vital subject. In a world where the great majority of people are believers no-one can doubt the importance of the subject. And after reading this book, no-one can doubt that the supposed clash of science and religion has been greatly distorted. Slaying the Dragons will enable intelligent people to enter the debate afresh with renewed interest and open minds."

John Pritchard, Bishop of Oxford

"A brilliantly concise history of the relationship between religion and science, and a passionate defence of Christianity. In Slaying the Dragons, Allan Chapman offers a robust and highly readable response to the 'not-so-New' Atheism."

Edmund Newell, Principal of Cumberland Lodge and former Chancellor of St Paul's Cathedral

## **Slaying the Dragons**

Destroying Myths in the History of Science and Faith

Allan Chapman



Text copyright © 2013 Allan Chapman This edition copyright © 2013 Lion Hudson

The right of Allan Chapman to be identified as the author of this work has been asserted by him in accordance with the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

Published by Lion Books an imprint of **Lion Hudson plc** Wilkinson House, Jordan Hill Road, Oxford OX2 8DR, England www.lionhudson.com/lion

ISBN 978 0 7459 5583 4 e-ISBN 978 0 7459 5723 4

First edition 2013

#### Acknowledgments

Scripture quotations taken from the Authorized Version

A catalogue record for this book is available from the British Library

Printed and bound in Great Britain, January 2013, LH26

For Rachel Wife, Scholar, and Best Friend

#### Acknowledgments

This book has grown out of many years of lecturing, to audiences of all kinds, on the historical relationship of science with Christianity, and the many questions and comments thrown at me in discussion, including "Is there anything I can read on this?" To all those who have listened, questioned, and commented, my thanks are due. I am also deeply indebted to Paul Clifford and Alison Hull of Lion Hudson for their invaluable guidance and perceptive comments, which have led me to make a great many additions and improvements to my original manuscript, resulting, I hope, in a much better book. But my biggest debt of all is to my wife Rachel, who has been ready with her typing and editorial skills, advice, criticism, and scholarship at every stage of the process, and whose patience has been truly monumental. It is to her that this book is dedicated.

### Contents

	ACKNOWLEDGMENTS	6
1	MYTHS, MONOTHEISM, AND THE ORIGINS OF WESTERN SCIENCE	9
2	THE ORIGINS OF UNBELIEF Part 1: Ancients and Early Moderns	24
	THE POPULAR MYTH THAT ATHEISM IS NEW	24
	CLASSICAL AND MEDIEVAL UNBELIEF	26
	THOMAS HOBBES, MATERIALISM, AND MAN THE MACHINE	31
	ATHEISTS, DEISTS, AND UNBELIEVERS	37
3	THE ORIGINS OF UNBELIEF Part 2: Dreams of a Brave New World	43
	ROMANTIC AND REVOLUTIONARY ATHEISM	43
	ROBERT OWEN, GEORGE HOLYOAKE, AND THE VICTORIAN SECULAR ATHEISTS	50
	THE MYTH THAT SIMPLE FAITH WAS DESTROYED BY DARWIN IN 1859	56
4	THE HISTORICAL ROOTS OF ANTI-CHRISTIANITY Part 1: Two Persistent Myths	57
	THE MYTH OF THE MEDIEVAL "DARK AGE"	57
	THE MYTH OF THE "ENLIGHTENMENT"	65
5	THE HISTORICAL ROOTS OF ANTI-CHRISTIANITY Part 2: Myths of Changing	75
	Circumstances	75

	THE PROBLEM OF ETERNAL DAMNATION	75
	BIBLICAL CRITICISM, "MYTH", AND EARLY BIBLICAL ARCHAEOLOGY	79
	NATIONALISTIC CHRISTIANITY	89
	THE GROWTH AND POWER OF SCIENCE	92
6	SOME POPULAR MYTHS ABOUT SCIENCE AND RELIGION	94
	CHRISTIANITY AND SCIENCE IN "CONFLICT": TWO NINETEENTH- CENTURY AMERICAN "ATHEISTS"	94
	ALL CHRISTIANS ARE REALLY BIBLICAL FUNDAMENTALISTS	98
	THE CHURCH HAS ALWAYS PERSECUTED SCIENCE AND SCIENTISTS	100
	RELIGION CAUSES THE WORLD'S TROUBLES: ONLY SECULARISM CAN BRING PEACE	107
7	MONKEYING AROUND WITH HISTORY: THE MYTH OF THE BIG 1860 "OXFORD DEBATE" ON EVOLUTION	113
8	THE MYTH OF THE YOUNG EARTH AND THE ORIGINS OF EVOLUTIONARY IDEAS	121
	DATING THE CREATION	121
	THE ORIGINS OF LIFE: PRE-DARWINIAN IDEAS OF "EVOLUTION"	130
9	CHARLES DARWIN: MONKEY, MAN, AND MYTH	136

10	COUNTERING THE "BIG LIE"	149
	WHY IS NATURE CONGRUENT?	149
	WHY DO HUMANS RESPOND SO POSITIVELY TO BEAUTY AND ELEGANCE?	151
	SCIENCE DESCRIBES EFFECTS, RELIGION TALKS OF CAUSES AND PURPOSES	156
11	DOES SCIENCE CHALLENGE RELIGION? THE GREAT ATHEIST MYTH	160
	LACK OF NEW SECULARIST IDEAS	160
	WHY HAS RELIGION FAILED TO DIE AWAY?	166
	ARE ATHEISM AND SECULARISM MORE SUPERSTITIOUS THAN CHRISTIANITY?	169
	DOUBTING SCEPTICISM	173
	SEDUCTION BY REDUCTION	176
12	THE AGE THAT LOST ITS NERVE: THE DILEMMA OF CHRISTENDOM IN THE MODERN WORLD Part 1: Myths and Mechanisms	180
	THE MYTH OF A SECULAR SOCIETY	182
	FORCED TO ACT: MECHANISM AND EVOLUTIONARY AND NEUROLOGICAL DETERMINISM	186
	THE HISTORICAL ORIGINS OF	

SOCIAL SCIENCE EXPLANATIONS, AND THEIR EXPLOITATION BY SECULARIST MYTH-MAKERS 194

13 THE AGE THAT LOST ITS NERVE: THE DILEMMA OF CHRISTENDOM IN THE MODERN WORLD Part 2: The Myth of Secular Transcendence 204 THE MYTH OF HUMAN PERFECTIBILITY 205

THE UNACKNOWLEDGED PILLAGING OF CHRISTIAN MORALITY BY	
SECULARISTS	209
BELIEVING IN AN EXTERNAL TRANSCENDENT REALITY	214
WHY MUST HUMANS BE ALWAYS SAVING SOMETHING?	216
SAVING SOMETHING:	210
REINVENTING HEAVEN	218

14	REDISCOVERING THE COMPASS, OR WHERE DO WE GO FROM	
	HERE?	223
	RECLAIMING CHRISTIAN IDENTITY	223
	HOW "ENLIGHTENED" ARE THE NEW ATHEISTS?	234
	CONCLUSION: SO WHERE DO WE STAND, AND WHAT DO WE DO?	238

15 POSTSCRIPT: WHY DO SO MANY MODERN INTELLECTUALS WASTE THEIR ENERGY ATTACKING CHRISTIANITY? 242 WHY GET HOT UNDER THE SECULAR COLLAR? 242 SURVIVING THE CRUCIFIXION 244 HISTORY? BUT THE GOSPELS WERE JUST MADE UP – WEREN'T THEY? 247 FURTHER READING 250 INDEX 252

# Myths, Monotheism, and the Origins of Western Science

For much of the twentieth century, and especially since the 1960s, the Judeo-Christian faith, and Christianity in particular, have been under increasing assault. This assault has come from several directions: from particular interpretations of scientific progress; from certain styles of radical politics, often based on social science presuppositions; from fashionable philosophers and social pundits; and, by the late 1990s, from the media. And one of the great ironies is that while Great Britain has an established church, the Christian faith has become a thing of ridicule and mockery in many circles. National Health Service Trusts have suspended nurses who would not remove crucifixes hanging around their necks, and bed-and-breakfast hotel proprietors and experienced foster parents are threatened with prosecution because they will not countenance certain practices condemned in parts of the Scriptures or permit them to be performed on their private premises (yet a blind eye is not infrequently turned to the customs and practices of non-Christian religions). Indeed, several law-abiding Christians have mentioned to me that if they should utter the word "Jesus" or "Christ" in any context other than that of a joke or a blasphemous expletive, they feel that they would be exposing themselves to accusations of being fundamentalist, narrow-minded, out-of-date, or stupid.

For do not the fashionable "New Atheists" – Richard Dawkins, Sam Harris, Daniel Dennett, the late Christopher Hitchens, et al. – (so styled by present-day journalists to differentiate them from the Old Guard of atheists, such as Bertrand Russell and Aldous Huxley) constantly remind us that Christianity is a thing of the Dark Ages; that "science" and "reason" have swept its superstitions away, and that sociology, psychology, neurology, and most of all evolution, have delivered us from such bondage? And as our secular political leaders and promoters of "multiculturalism" constantly tell us, do we not now live in a free, open, equal, rational, and transparent global village society? A society so tolerant that every creed and belief must be respected and lovingly nourished as an expression of our natural goodness – unless, of course, that creed comes from the Holy Bible!

This monumental double-think – a double-think of Orwellian proportions – constitutes one of the biggest myths of the age in which we live: a myth that derives its style of thinking from perversions of scientific thinking, in which the absolutism of Newtonian mechanics is combined with the dogmatic determinism of neo-Marxism, and the directionless moral vacuity of postmodernism.

Indeed, these myths, which form so much of the social geography of the late twentieth and early twenty-first centuries, have become so pervasive across much of Western society that many people regard them as natural and unquestioned aspects of modern thought. I remember in my youth, in the late 1960s, being peddled stories of how the free modern world only came into being when brave souls such as Copernicus, Galileo, and the philosophers of the "Enlightenment" had the courage to "stand up" to the church - and often paid dire penalties. Of how poor Charles Darwin had been vilified for daring to present the scientific fact that we all came from monkeys. But as a natural sceptic as far as intellectual fashions go, who has always had a fascination with the nature of myth-making, I became increasingly inclined to treat these socio-myths with caution. As I shall show more fully in Chapter 11, I have always felt that antireligious scepticism, as a universally lauded instrument of analysis, must itself be regarded sceptically.

But it was when I became an academic science historian that the mythic status of science's secular, liberal, and liberated roots became

glaringly obvious. This first became obvious in my reading. Then, as I began to teach, deliver public lectures all over Great Britain and America, and broadcast, the *avalanche* of mythology really hit me. For there is nothing like questions from the floor following a large lecture or a public discussion, where the world and his wife are free to put you on the rack and throw their mental brickbats at you, to reveal the sheer magnitude of the mythology that passes for "the conflict between science and religion". Comments such as "How can an intelligent person believe all that stuff about God and miracles?", or "As everyone knows, until the Enlightenment the church held science back", come to me with monotonous regularity.

And this is what has led me to write this book, for reading apart, pretty well every chapter or sub-chapter between these covers is based on matters that have been raised with me by tutorial students, members of the public following lectures, in private communication, or by people who have engaged me in conversation on train or bus journeys. For the subject of religion and its relationship with science is a topic of growing fascination, to Christians, to secularists, and to puzzled folk who don't know what to think, who stand in awe of the power of science, but who find atheism cold and dead. Without doubt, the passionate, and often virulent, writings of New Atheists, extending from Richard Dawkins back to Bertrand Russell, have been instrumental in fomenting this interest. And while perhaps not read so widely, or evangelized so forcefully, as those of the "New Atheists", the claims and statements of numerous Christian fundamentalists (that is, strict biblical literalists, especially in their interpretation of Genesis and their rejection of evolution) during the latter half of the twentieth century have also added fuel to the flames of *religious* assault on the one hand and defence on the other, resulting in bafflement for large numbers of people.

But as I became more interested in the science and religion scrum – for it rarely rises to the orderliness of a "debate" – in the late 1980s, one thing came to grate on my historian's sense of fact and context time and time again, namely, the proliferation of myths, confabulations, and downright untruths that flew with ever increasing intensity,

especially from the New Atheists, against Christian believers. This urban folk mythology or fairy-tale culture of atheism and secularism is the stuff about which this book is written: it is the monstrous regiment of dragons that have to be slain if ever we are going to see science and Christianity in context. Myths as groundless as the one which vehemently affirms that science could only progress once the gargantuan power of "the church" had been successfully challenged and overthrown; and its partner in secularist mumbo-jumbo which asserts that all true scientists must be atheists, for surely a rational scientist cannot believe in God - an assertion still clung to in the teeth of the stark fact that high-profile Nobel Prize Laureates, Fellows of the Royal Society, British scientific knights and dames, and many scientific professors sincerely practise the Christian faith. Indeed, it is such men and women, of differing degrees of eminence, yet all possessing high-powered scientific qualifications, who constitute the membership of such bodies as Christians in Science and the Society of Ordained Scientists (I have had the honour to lecture to both), or are active in the ordained or lay ministry of the Anglican, Methodist, Roman Catholic, or free churches. Jesuits, Anglicans, Presbyterians, Baptists, Pentecostals, Charismatics, Quakers, you name it: you can find highly qualified scientists in their ranks or even in their pulpits. So one pair of myths bites the hard rock of demonstrable evidence early in the story!

Yet I can hear people saying, why are you only talking about Christianity and science? What about other religions? Two factors have to be considered in answering this question. First, the New Atheists are generally careful about which religions they target for the outpouring of their bile. Yes, there is endless ranting against American-based fundamentalist groups, and a constant harping on about the "Monkey Trial" at Dayton, Tennessee, in 1926, with the "by association" flow of ideas intending to imply that Christianity equals anti-evolution, equals biblical fundamentalism, equals antiscience, equals the "Dark Ages". Yet, at least in *legally* "multicultural" Great Britain, they are often surprisingly reticent about other religions: scarcely a squeak against Judaism (as opposed to criticisms of the State of Israel), from which Christianity springs, and only rather circuitous generalities against Islam (although, in fairness, Sam Harris and others in America and Michel Ornay in France are more blunt in their opinions of non-Christian faiths). I wonder why this should be so? Could it be analogous to the courage displayed by a well-fed household pussycat relishing play with a cornered mouse, as opposed to the blind terror experienced by the same pampered pussycat when faced with a hungry wolf? Hit one faith, and it obediently apologizes and dutifully goes down; hit another, and it bites back!

But in talking about science as it grew up within the territories of Christian Europe, we have to look plainly and impartially at where that approach to understanding the natural world which we now call "science" actually comes from. For its roots are four-square in the Greco-Roman, Judeo-Christian cultural tradition. I have long argued, live, in print, and on television, that science as we know it stems from monotheism.

The Egyptian, Babylonian, Indian, Polynesian, Chinese, and Meso-American cultures all built up complex and sophisticated systems for making sense of the natural world as they understood it within the context of their environments. All of them developed sophisticated systems of counting, classifying, and recording natural phenomena and celestial-terrestrial correlations, either for calendrical purposes or to arm themselves against future storms, famines, plagues, or political overthrow. Yet all of these cultures were polytheistic, seeing the sky, planets, wind, water, agricultural fruitfulness, or earthquake as the province of the individual members of a pantheon of spirit beings who between them made life good or bad for humanity. Understanding the natural world to an Egyptian or a Chaldaean in 2000 BC, therefore, lay in negotiating one's way through the erratic behaviour patterns of a large dysfunctional family of spirits who would get you if you put a foot wrong. If, for example, you failed to offer the right sacrifices, or perform the correct rituals, at the ordained time. However much you might record the risings and settings of the stars, or list eclipses, comets, or falling stars, and however much you described the habits of plants, animals, birds, or diseases, this is not what later ages would

consider *scientia*, or organized knowledge. It was, rather, recordkeeping for liturgical purposes, or perhaps practical purposes, such as land measurement, administrative efficiency, or commercial reckoning. "Nature" was not conceived of as having an independent existence, but was, rather, an expression of many fickle deities in action, and could suddenly change at the failure of a sacrifice or the omission of a ritual.

Of course things were not much better in Homeric Greece around 1000 BC, where mere humans could easily become the victims of that pack of eternally misbehaving self-indulgent divine brats who lived on Mount Olympus. Profound changes took place in Greece, however, between the days of Thales and Pythagoras, from around 600 BC, to the death of Aristotle in 322 BC. Perhaps this came about through the complex geography of Greece, with its many scattered mountain, island, and valley city-state communities, which made it far less centralized and easily controlled than were the great river floodplain empires of the Nile, Euphrates, or Indus, where government tax collectors or squads of soldiers could easily enforce the will of the officialdom along an arterial waterway. Certainly, trade organized by independent merchants (as opposed to by the king) across the Mediterranean and the Black Seas generated much more purely private wealth than one found in Egypt or Babylon. Such travel in pursuit of profit taught you about all sorts of things that a river- or desertdweller would never encounter, such as winds, sea and ocean currents, odd meteorological phenomena, and all manner of strange living creatures. Oceanic travel also taught you that the land disappeared once you got a few miles out to sea, and mysteriously reappeared as you approached your destination, suggesting that you might be sailing around a curve or sphere. Different stars could be seen if you were trading off the south of what would later be called France than if you were off Egypt, while a solar eclipse seen at 9 a.m. in Spain would be seen at noon in Greece, adding to the idea of a round earth, a round sky, and, perhaps, different time zones, in contrast to the flat earth and sky cosmology of Egypt or Mesopotamia.

The geographical isolation of the regions of Greece probably led to a greater cultural individualism. It is not for nothing that the Greeks invented "civic society" and "public consciousness" in the city-state, of which there were well over 158 in Greece by the time of Aristotle.

I would argue that it was from this dynamic cauldron of circumstances that the leisure, thinking space, and resources emerged out of which the arts and sciences were born in Greece. Geometry, after Thales and Pythagoras, opened up a dazzling world of eternal and apparently unfalsifiable truths - such as the properties of triangles, circles, and prime numbers, and the elegant curves that resulted when you cut a cone into angled slices, to produce the ellipse, parabola, and hyperbola. Likewise, there was the analysis of the perfect, harmonious proportions in a musical sequence, first studied by Pythagoras, along with the intellectual certainty and elegance of conceptual mathematics (as opposed to mere counting). And then, one encounters that whole raft of philosophical ideas that led to people discussing and analysing the abstract yet immediately recognizable concepts of truth, beauty, justice, reason, and deductive logical propositions. And rather like in our Western civilization today, deriving as it does from that ancient ancestry, much of this was a product of free "market forces": people with commercially derived cash in their pockets wanting to educate their sons (thereby encouraging teachers like Socrates, Plato, and Aristotle), patronize painters and architects, improve the amenities of their city, or laugh at a comedy by Aristophanes.

But what, you might ask, has this interpretation of classical history to do with science, religion, and mythology today? Everything, I would respectfully argue, for out of Greece came the social practice of wellfunded creative leisure, a necessary preliminary to having the mental space and the freedom to ask questions, challenge orthodoxies, think your own thoughts, and do your own thing – at least, if you were free, a man, and a comfortably off voting citizen of a city-state. And yes, that might have been narrow by modern-day standards of freedom, but it was a lot better than spending your life quarrying granite for Pharaoh or digging irrigation ditches for the priests of Babylon.

And very significantly for future religious thinking, some Greek philosophers, such as Heraclitus and Anaxagoras, were asking by the fifth century BC whether there might be a higher power beyond the gods of Olympus. It was not personalized, but rather some kind of organizing power or principle of order, which might have something to do with why mathematics, logic, and reason made sense. A grand philosophical principle, in fact. Analogous, perhaps, to the *Forms*, or ideal defining principles which lay behind things, and not only made them make sense, but also enabled the human intellect to identify and even work with them. For a Form, as it came to be spoken of by Socrates and Plato, was that eternal principle which all similar, yet diverse, things share. Each individual cat, for example, differs in a myriad of ways from every other cat, yet they all share a defining characteristic that unites them. This, one might say, is the Form of the cat, or what one might recognize as *cattishness*, instantly differentiating it from a small dog – which possesses *doggishness*. Now these Forms are hard to pin down in abstract, yet when you see one embodied, you somehow recognize it in a flash.

Could it be that all these ideal Forms were part of a great preexisting *Logos*, or foundational intellectual principle? And might this principle be eternal and unchanging? If this were the case, then one might suggest that certain Greek philosophers mixed their philosophical geometry, mathematics, and logic with their theology, for in this Logos was something resembling monotheism. Perhaps one great, eternal, transcendent, divine rational principle unified not only the whole realm of mind, but went on to connect our human intellects with the Logos itself, thereby enabling human beings to understand and reason their way through the visible and invisible creation.

By the time of Plato and Aristotle, in the fourth century BC, Greeks were even discussing creation itself. Did the cosmos come about, as Plato proposed in his *Timaeus* narrative, by a divine craftsman imposing order on rough materials in the same way as a potter imposes the Form of a pot upon every vessel he makes on the wheel? Or did it come about, as Aristotle proposes in his *Physics*, by an Unmoved Mover setting creation in motion? Indeed, it was not for nothing that early Christian theologians would equate this creative Unmoved Mover or Logos with God in Christ Jesus, as did the writer of St John's Gospel. But this radical and world-changing insight only emerged when these fifth-century-BC Greek ideas took a new direction as they came to be combined with the vastly more ancient ideas of the Jews. For in the Judeo-Christian tradition, as it would develop, this Greek *Logos* first revealed himself as "I AM", or "JEHOVA", to Abraham in Mesopotamia around 2000 BC as a very personal creator of all things. Indeed, he was not a *concept* like the Logos, but an eternal, divine, living being who formed the very image of mankind from himself, who gave us our intelligence, and for whom we, and especially those descendants of Abraham who would become the Jews, were the supreme, albeit disobedient, fruits of creation.

Here was something emerging in human experience that left the offering of sacrifices to the Egyptian or Mesopotamian nature spirits way behind when it came to a new, higher kind of theological understanding. And nowhere more so than when that supreme being identified himself so closely with the human race that he had created that he took human flesh in the form of Jesus the saviour.

So here we have that dynamic of creator, giver of life and reason, lifting humanity from the cowering slave caste of the ancient Egyptian and Mesopotamian religions, and affirming us as beings with a value and a divine destiny in our own right. Irrespective of whatever religious beliefs the reader may hold, it is hard to deny two aspects of what I have outlined above. Firstly, it possesses a grandeur and a visionary scope pertaining to the human condition that is unique in the annals of human thought, in its combination of creation, logic, reason, humanity, divinity, love, redemption, and purpose. And secondly, it unleashed a creative dynamic into the world, the tidal force of which still carries us along today. For whether you are a Jew, a Christian, a philosopher, or a passionate atheist, it is this essential dynamic that still provides the ground plan which you will embrace lovingly, or feel you must reject. But it refuses to be ignored.

This, I would suggest, is the origin of monotheism, and without it we would not have that unified concept of nature and its accessibility to human intelligence without which modern science is impossible. For irrespective of where a person may stand today on the creedal scale, it is monotheism that is the father and mother of the concept of a natural world that makes (or appears to make) logical sense.

Yet, these essential intellectual components of monotheism derived from rabbinic Judaism on the one hand and pagan Greek philosophy on the other. Why should it have been in European and later American – Christendom that science assumed the dominant cultural role it holds today? There is nothing especially scientific in the teachings of Abraham, Moses, Jesus, St Paul, or any other of the Christian apostles. But what I would argue is that science entered early Christian and medieval Europe by a process of cultural osmosis. For one of the formative and enduring features of Christianity, from the AD 30s and 40s onwards, was its social and cultural flexibility. One did not have to belong to any given racial or cultural group, wear any approved style of clothing, cut one's beard in a prescribed way, speak a special holy language, or follow essential rituals to be a Christian. Women in particular, amazingly, considering their limited social role in antiquity, were drawn to Christianity in large numbers, as the Gospels and the Acts of the Apostles make clear, where they are shown as openly expressing their views. They were even the original witnesses of the resurrection, while St Paul's first European convert was Lydia of Thyatira, a Greek merchant woman.

In fact Christianity moved into the pre-existing social, legal and administrative structures of Greco-Roman paganism, as Greek civic virtue became infused with Judeo-Christian charity. Roman legal objectivity absorbed key aspects of the teachings of the Sermon on the Mount and the Beatitudes to create a concept of social justice; even the modes of dress of late Roman officials became the vestments of Christian priests; while words like "bishop" and "diocese" derived from classical administrative sources. Christianity, instead of overthrowing the genius of Greece and Rome, simply absorbed its best practical components, and allied them with the teachings of Jesus. The law codes of Christendom, moreover, came to develop non-theological components. The circuit judge system set up by King Henry II in the twelfth century, for instance, might have carried resonances of the assistant judges of Israel appointed by Moses in Exodus, or the judgment towns visited by the prophet Samuel in 1 Samuel, but in practice it administered a new, practical English "Common Law", and the judges often sat with that innovation of the age, a twelveman *lay* jury.

This is how medieval students in Oxford, Paris, Bologna, or Salamanca came to study the pagan philosophies of Plato and Aristotle, the classical Latin poetry of Virgil, and the humane ethics of Cicero along with the Gospels. And very important for the rise of a *civil* society in which there was an acknowledged *saeculum* or nontheological exclusivity, the law students at the medieval Inns of Court in London, then as today, learned a pragmatic, case-based evolving *civil* law that was not especially theological in its foundation. For medieval Christendom was open to non-Christian ideas, provided that they could be reconciled in their broader principles with Christianity.

Exactly the same thing happened with science. The astronomy of Ptolemy, the physics of Aristotle, and the medicine of Hippocrates became part of the curriculum in Europe's great new universities by 1250. Indeed, it was generally accepted that many honest pagans had glimpsed key truths of God's creation, and who could blame the wise Socrates and Aristotle if they happened to have been born 400 years before Jesus, for their wisdom and honest contributions to learning were beyond question. This is how ancient science came to slide effortlessly into the Christian world, for it was useful for making calendars, treating diseases, and explaining the physical nature of things from the facts then available.

But, you might ask, when talking about science and Christendom, what happened in monotheistic Islam? It is an evident fact of history that, after its initial military conquests in the century after AD 622, Muslim scholars in Baghdad, Cairo, and southern Spain encountered the scientific and medical writings of the Greeks, which they translated into Arabic. And amidst a galaxy of figures such as Ibn Jabir in chemistry, Ibn Sina (Avicenna) in medicine, Ibn Tusi in astronomy, and Al-Haythem (Alhazen) in optics, Arabic science took the Greek scientific tradition further, research-wise, than anyone in Europe over the centuries AD 800–1200. But then, due to a variety of factors embedded within Islamic culture, it stalled and came to a standstill, especially after their last great scientist, the astronomer Ulugh Beigh of Samarkand, was murdered, it was said, by one of his own sons in 1449.

There has been much discussion among scholars as to why Islamic science declined as an intellectual and technical force, and why Christian Europe after 1200 developed a momentum which absorbed – with full acknowledgment – the achievements of the great Muslim scholars and scientists, and accelerated in an unbroken line of development down to the present day. For Islam, just like Judaism and Christianity, is a monotheistic faith, seeing the God of Abraham as the original and only creative force behind the universe. So why did the Islamic monotheistic tradition stall scientifically, while the Judeo-Christian tradition flourished? I think much has to do with a broader receptivity to classical Greco-Roman culture.

As was shown above, Christianity grew directly out of a combination of Judaism and wider Greco-Roman culture. Jesus the man was incarnated as a Jewish rabbi who preached in vernacular Aramaic and could read Hebrew, yet whose teachings, not to mention the commentaries of his disciples, were committed to posterity in Greek and, somewhat later, in Latin. The Jesus of the Gospels, moreover, respected Caesar, the Roman state and its officials; and his disciples even held an election to decide whether Barnabas or Matthias should be co-opted into the Twelve after Judas's treachery; while St Paul, a Jewish native of the Hellenized "university town" of Tarsus in Cilicia (now Turkey), argued like a Socratic philosopher in his letters and was deeply proud of being a hereditary Roman citizen. Islam, on the other hand, came about in a very different way. The Prophet Mohammed's roots lay in the essentially tribal society of the seventh-century-AD Arabian peninsula, east of the Red Sea. Tribal custom and not Greco-Roman "civic virtue" moulded its social and cultural practices, and Islam's lack of a theology of free grace and atonement gave emphasis to an internal legalism that could all too easily generate centuries long sectarian disputes, such as those between the Shi'ites and the Sunnis. And while I fully admit that Christendom has had its own spasms of internal violent reprisal, most recently witnessed in the Troubles in Northern Ireland, I would suggest that Christendom's classically derived *constitutional*, negotiated, approach to politics has always provided mechanisms for containment and reconciliation. This has been seen most notably in the active cooperation between the Roman Catholic and Protestant mainstreams, often on an overtly religious level, although splinter groups can remain active until changes in public attitudes eventually render them obsolete.

Islam took from Greco-Roman culture what it found useful in the territories it conquered. These included Greek astronomy, optics, medicine, chemistry, and technology, each of which it amplified and expanded, producing major treatises, often based upon freshly accumulated and carefully classified observational data. Chemistry came to owe an enormous debt to Arabic researchers, as would astronomical, medical, and botanical nomenclature. Indeed, well over a dozen major Arabic works made their way into Europe, where they were translated into Latin, influencing figures like Bishop Robert Grosseteste and Friar Roger Bacon of Oxford, and began to be widely studied in detail in the post-1100 European universities. (On the other hand, I am not aware of the foundational works of European science, such as those of Copernicus, Kepler, Galileo, Vesalius, or Harvey, being translated into Arabic until recent times.) And among other things, that astronomical computing instrument known as the astrolabe, upon which the poet Geoffrey Chaucer wrote the first technical "workshop manual" in the English language around 1381, was a sophisticated Arabic development of a device first outlined by Ptolemy in the second century AD.

Yet while Greek ideas were profoundly formative upon Arabic concepts of the natural world, Islam did not absorb other key ideas of Greek and Roman culture which would become formative to Christian Europe. Greek democratic political ideals, "civic virtue", and legal monogamy (divorce and mistresses notwithstanding) never became an integral part of Islam as they did of Christendom. Nor did the descent of kingship through holy anointing, which began with Samuel, Saul, and David in 1 Samuel in the Old Testament and entered early Christian kingship practices as the act of coronation, and is still enshrined in the person of HM Queen Elizabeth II.

It is for these reasons, I would argue, that modern science is a child of Judeo-Christian, Greco-Roman parentage, and why I speak of *Western* science as becoming the dominant style of thinking about the natural world and humanity's inquisitive relationship with it. Indeed, it is not just about the science and technology, but about the social, intellectual, and cultural assumptions and practices in which modern science is embedded. The very institutions within which science has grown up over the last 900 years, moreover, testify to this inheritance: universities with enduring corporate structures borrowed from Greek and Roman linguistic and civic practice; learned societies – such as the Royal Society of London after 1660 – which were self-electing, self-governing bodies modelled on the "collegiate", "civic virtue" style Oxford and Cambridge colleges; and rich, free-trading merchant-driven cities such as London, Florence, Venice, Nuremberg, Amsterdam, Antwerp, and Hamburg.

As will be shown in more detail in the following chapters, historical Christianity has never been rigidly literalistic in its interpretation of the physical world of Scripture, and it is that very flexibility that has made the faith so versatile and adaptive in its social expression over 2,000 years. A faith that made its first utterance among Aramaic-speaking fishermen and farmers around Galilee (occupying a land surface area no bigger than modern Birmingham), quickly went on to enchant Greek-writing scholars, led to the conversion of the Roman Empire, encompassed people between Mesopotamia, Spain, Britannia, and Ethiopia by AD 600, would inspire the new Latin-speaking universities of Europe by 1200, would engraft onto itself the science, philosophy, legal and social practices of the high classical Mediterranean, would explore possible connections between the teachings of Jesus and the writings of Plato and Virgil, and whose Scriptures would be translated into the vernacular languages of Europe by 1550. Christianity would then go on to inspire the natural theology of the Royal Society Fellows, be the driving force behind the abolition of slavery, supply the moral and spiritual tools that constitute the best and noblest aspects of what we now call "human rights" – and become the prime target for some of the bitterest abuse that many twenty-first-century sceptics feel compelled to heap upon religious belief (and I have heard a good deal of that at first hand!).

Indeed, considering the magnitude of Christianity's moulding influence upon Western civilization, and its provision of that rich soil in which post-classical science could flourish and grow, it is hardly surprising that, in this imperfect world, it has detractors. I might suggest the British National Health Service as an analogy. For just like Christianity, the NHS, in its noble aspiration of cradle-to-grave care for all, wastes large sums of money, makes mistakes, and inevitably gets attacked, sued, and criticized across the board. On the other hand, it continues to transform, extend, and fundamentally improve the lives of millions of people, as it has done since its foundation in 1948. And most of all, it has done so most dramatically for the poor, the vulnerable, and those incapable of purchasing their own health care – rather like Christianity, in fact!

Nor is it surprising that, within a post-classical and modern West with its ancient traditions of respect for argument, debate, and - in varying degrees - toleration, myths have abounded. Yet why myths about Christianity abound so richly and often with so little apparent opposition in our own time will constitute the subject of the present book. So read on.