

a critical review of modern life

kategoria

3

ISSUE

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What shaped our
modern culture?



THOMAS HUXLEY

*The politics of
Science*



LIFE ON MARS

*The discovery
behind the
headlines*



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Articles are welcome which critique some aspect of modern life or belief. Articles are to be around 5000 words length, footnoted according to the style demonstrated in this journal. Reviews of recent books or intellectual events are also welcome. Please contact the editor before sending a review.

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contents

editorial 5

articles

The biblical shape of modern culture 9

E. A. Judge

Thomas Huxley and the 'warfare'
between science and religion: mythology,
politics and ideology 33

David Starling

Life on Mars...really? 51

David Sinclair

reviews

Fallen justice 57

Peter Grice

When God is not allowed 65

Andrew Cameron

Is the Bible true after all? 73

Andrew Reid

editorial

Reaction to the last issue of *kategoria*—in particular, the article addressing the early Fundamentalists’ writings on Darwinism—has been interesting in its variety. While some people have been kind enough to express favourable opinions, what was most odd was the fact that the article was criticised by creationists for defending evolution, while Christian evolutionists felt it was too creationist! As the article supported neither theory, this only goes to strengthen our conviction that the whole debate has been distorted out of proportion. We must not let ourselves become so heated in our convictions that we fail to discuss the real matters at hand.

Part of the distortion has been imposed upon the debate by a deliberate anti-Christian attack, and the nature of this attack is addressed in one of our articles in this issue. Darwin’s theory of descent was surrounded by philosophical intrigue from the time of its first publication. Thomas Henry Huxley, ‘Darwin’s bulldog’, was not just a polemicist for a scientific theory; he had a specific agenda to discredit religion, and we have been suffering the effects of his work ever since. In studying Huxley’s campaign, we see that the way in which science is said to ‘prove’ naturalism is largely the result of careful political manoeuvring rather than rational philosophical debate.

The misconceptions thus produced are still with us, as demonstrated by the recent “Life on Mars” furore. What was a carefully researched matter of biochemistry, with very modest conclusions, was turned into an attack on

Christianity. (For your information, we have included in this issue a short report summarising just what was the scientific discovery about life on Mars.) As newspaper readers would have seen, the leap was quickly made from traces of ancient bacterial life, to intelligent life, to disproving world religions. Indeed, this discovery of science was hailed as yet another example of the incompatibility of science with religion. “People who are deeply involved in religious belief have enormous difficulty with anything of a scientific nature”, a spokesman for the Humanist Society of NSW was quoted as saying.¹ Despite the fact that religious commentators were at a loss to see what this devastating attack was meant to be, the chance of raising another ‘conflict’ between science and religion was irresistible to the popular press. We hope that as part of its ongoing work, *kategoria* can go some way to demonstrating that this view that science ‘disproves’ Christianity is not merely ungrounded, but is the product of anti-religious bias.

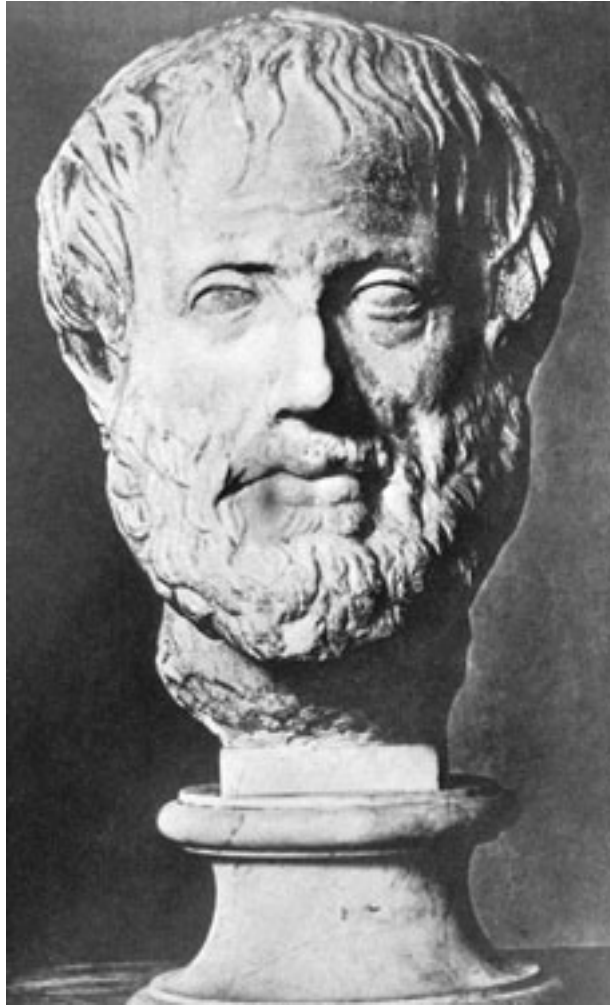
At the same time, many of the fundamental contributions that biblical Christianity has made to our Western culture, and indeed to the the science that is said to be opposed to it, have been forgotten. Edwin Judge, who has conducted extensive research into ancient cultures, reveals some of those vital biblical foundations which underlie many of the assumed values of modern society. It is not as if our moralities, ideas about knowledge and its value, or our view of ourselves, came out of nowhere. The task he undertakes is not an easy one: to extract basic assumptions from the complex phenomena of society. Assumptions by their nature are taken for granted and often left unexamined. The analysis, however, is worth the effort. As Professor Judge demonstrates, although modern society is loathe to acknowledge it, the Bible has shaped more of the way we think and the ideals we cherish than probably any other single philosophical source.

Please continue to send in your suggestions for articles

¹ *Sun-Herald*, 11 August 1996.

and reviews. The list of potential areas for comment is ever-growing, but more contributions are always welcome! In coming issues of *kategoria*, you may look forward to critiques of ecology, ideas of the soul and consciousness, and tarot cards and astrology. We hope you continue to profit from its pages. ☸

Kirsten Birkett
Editor



Aristotle (384-322 BC)

The biblical shape

of modern culture

E. A. Judge

The cliché that we are now in a ‘post-Christian’ age is superficial. It no doubt allows for the fact that church-going is no longer a matter of convention, and that it is no longer the fashion to cite the Bible as a public authority (which, insofar as it was only window-dressing, we are better off without). But the cliché misses the much more fundamental fact that contemporary ways of thinking and patterns of behaviour are in vital respects anchored in the biblical understanding of the world.

Even some of the most self-consciously non-Christian movements of the times are in important aspects dependent on, or congruent with, the biblical outlook. In the second century, the Greek philosopher Celsus denounced Christians (and Jews) as grossly exaggerating the importance of man in the universe. Renaissance ‘humanism’ revived this emphasis but its contemporary namesake has forgotten the biblical origin of the focus upon man. ‘Environmentalism’ may look like an attempt to re-identify man with nature, but it is anything but accepting of that fate, and its high sense of answerability reflects rather the biblical stewardship of creation. Even ‘post-modernism’, insofar as it seems to be

a reaction against attempts to explain everything in merely objective terms, leans towards the biblical way of understanding our being in personal and relational terms.¹

Under the impact of Western dynamism the countries which are home to other major cultural traditions have sharpened their interest in the origins of Western culture, with particular attention to the biblical contribution. This can be seen not only in Japan and India, but also in contemporary China, where there are universities explicitly developing this interest. New Australians from non-Christian traditions also need this understanding, as a matter of public information. It is not only the province of 'Christian' education. Everyone stands to gain from identifying the broad historical influences that have made us all what we are.

This is not to claim a privilege for the West, or to justify imperialism or exploitation. Nor am I implying that the Western confusion of classical with biblical ideas or attitudes is somehow more Christian than what emerges with the christianisation of other cultures, in Africa, for example. Nor am I saying that the Western pattern marks progress towards the kingdom of God. On the contrary, it contradicts Christ's mission in many glaring ways. Nevertheless the historic fact remains that it is this particular set of tensions that has now taken over the world and permeates the minds of modern people. By identifying the (now taboo) biblical component of it we shall not only help explain things better, but also make it easier to put them right.

In what follows I outline in contrapuntal form a few of the major polarities of understanding in which we are all involved. In separating them sharply into classical and biblical categories I am dissolving the great fusion of attitudes which is supposed to have been effected in the fourth century. The

1 There is of course a countervailing paradox. Church people have come to rely in many ways upon the classical world-view that is alien to the New Testament. That is why we prefer to leave passionate commitment to other people, and cultivate instead the carefully modulated life required by the ethics of reasonableness. The fact is that everyone in the West inherits the unresolved contradictions which create its distinctive dynamism, and which have rapidly overrun the rest of the world.

reigning historical judgement is that the biblical material was then absorbed into classical culture by such a many-sided accommodation that in the end nothing was much different. In particular, it is claimed that people did not behave better but, if anything, worse. I well know how the brutality of the fourth century seems to impose this conclusion. Yet christianisation was proclaimed at the time as a softening of manners, and in the long run, at any rate, so it has proved to be. What people believe does affect how they live in the end.²

The schematic treatment is intended only to clarify our patterns of understanding and approved behaviour. I am very conscious of the comment of A. Momigliano in his review of C. N. Cochrane: "He thinks in terms of abstract contrasts of ideas, when it has not unreasonably been suggested that history is made by men". P. O. Kristeller complained that Cochrane had fallen for "the temptation to exaggerate the contrast between Christianity and Classical thought and to play up the former against the latter".³ The same might no doubt be said of the following schema. Of course the 'classical' position is far more varied than such a rhetorical summary makes it seem, and of course there are aspects of 'biblical' thought that may seem to harmonise more with the cultivated ideals of classical ethics. But my point is to highlight the contrasts of principle that are now built into our contradictory heritage and thus underlie our lived experience. In particular, this demonstrates that our culture is more strongly infused with biblical concepts than often it realises.

2 E. A. Judge, *The Conversion of Rome: Ancient Sources of Modern Social Tensions*, Macquarie Ancient History Association, Sydney, 1980; Ramsay MacMullen, 'How complete was conversion?', *Christianizing the Roman Empire: AD 100-400*, ch. 9, Yale University Press, New Haven, 1984, and 'What difference did Christianity make?', *Historia*, 1986, 35, pp. 322-343.

3 Cochrane's work, *Christianity and Classical Culture: A Study of Thought and Action from Augustus to Augustine*, was published by Oxford University Press in 1940. In 1957 the *Encyclopedia Canadiana* said: "his contribution to the understanding of Graeco-Roman civilization is the most important yet made in Canada, if not on the American continent". Momigliano's review is in the *Journal of Roman Studies* 1941, 31, pp. 193-4, Kristeller's in *Journal of Philosophy* 1944, 41, pp. 576-81.

The shape of the whole

(a) The classical cosmos The universe is a perfect whole, comprehending the gods; being cyclical and eternal, history repeats itself	(b) The biblical creation God made the universe, and rules it; having an identified origin, it proceeds towards a clear end, as history changes things
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In Greek, *cosmos* was the word for ‘array’, whether of an army or of a woman’s adornment. It was the early philosophers, starting with Pythagoras (c. 530 BC), who applied this concept to the universe.⁴ They expressed thereby their sense of its ordered beauty. The heavens could be seen to be rotating in a majestic procession, endlessly repeated—‘the music of the spheres’. Such perfection was mathematically comprehensible. The gods might be close at hand or infinitely remote according to one’s philosophy, but they belonged within the universe, sharing its immortality.

It was Heraclitus (c. 500 BC) who established this position: “The *cosmos* was not made by any god or man but was, is and will be everliving fire being kindled in measures and quenched in measures”. One can see the logic of this. It is a rational deduction derived by speculating on the observed rhythm of hot and cold. It is rationality (*logos*) itself which is the eternal principle within the *cosmos*.⁵

The great debates amongst the pre-Socratic philosophers opened up rival theories which by the time of Aristotle (c. 330 BC) could be consolidated into a system that accounted for differences within the ultimate unity:

We have already laid down that there is one physical element which makes up the system of the bodies that move in a circle, and besides this four bodies (fire, air, earth, water) owing their existence to the four principles (hot, cold, dry, moist)...

4 Aëtius 2.1.1 (in Diels, *Doxographi Graeci*); Diogenes Laertius 8.48; M.R. Wright, *Cosmology in Antiquity*, Routledge, London and New York, 1995.

5 Heraclitus, frag. 30. G. S. Kirk, *Heraclitus: The Cosmic Fragments*, Cambridge University Press, London, corrected reprint 1962, frag. 1.

Fire, air, water, earth, we assert, originate from one another, and each of them exists potentially in each, as all things do that can be resolved into a common and ultimate substrate.⁶

The later Aristotelian tradition developed this:

Heaven is full of divine bodies, which we usually call stars, and moves with a continual motion in one orbit, and revolves in stately measure with all the heavenly bodies unceasingly for ever.

Thus then a single harmony orders the composition of the whole—heaven and earth and the whole universe—by the mingling of the most contrary principles [hot/cold, etc.]...a single power extending through all, which has created the whole universe out of separate and different elements—air, earth, fire, and water—embracing them all on one spherical surface and forcing the most contrasting natures to live in agreement with one another in the universe, and thus contriving the permanence of the whole.⁷

6 Aristotle, *Meteorologica*, tr. E.W. Webster, Oxford University Press, Oxford, 1923 (=W. D. Ross (ed.), *The Works of Aristotle*, vol. 3), 339 a and b; G. S. Kirk and J. E. Raven, *The Presocratic Philosophers: A Critical History with a Selection of Texts*, Cambridge University Press, London, 1957; Jonathan Barnes, *The Presocratic Philosophers*, Routledge, London and New York, 1979 (repr. 1993), a philosophical treatment.

7 Pseudo-Aristotle, *De mundo*, tr. E. S. Forster, Oxford University Press, Oxford, 1914 (=W.D. Ross [ed.], *The Works of Aristotle*, vol. 3), 391 b and 396 b; for the logical problems involved in speculation at the opposite end of the scale see Andrew Pyle, *Atomism and its Critics: Problem Areas associated with the Development of the Atomic Theory of Matter from Democritus to Newton*, Thoemmes Press, Bristol, 1995; and for the rival view of an infinite universe (as distinct from the eternal *cosmos*) that results from starting with the smallest part rather than the whole, see David Furley, 'The cosmological crisis in Classical antiquity', in *Cosmic Problems: Essays on Greek and Roman Philosophy of Nature*, Cambridge University Press, Cambridge, 1989, pp. 223-35.

The biblical view of the world is fundamentally different. God exists entirely outside it, he made it from nothing, he controls it, and will bring it to an end. In Aristotelian thought God's existence within the world may be necessary to ensure its eternity; if he is conceived as creator, he makes it out of pre-existing material. The differences are dramatised by Paul. The world is not in beautiful order. Error (*hamartia*) entered the *cosmos*, corrupting it with death (Rom 5:12). Far from sensing the perfect music of the spheres, Paul listens to the creation groaning under its bondage to decay (Rom 8:21-2), longing for the glory to be revealed (vv. 18-19).

Current cosmology posits an explosive origin for the universe at that point in the finite past when everything was compressed to a state of infinite density, and prior to which it did not exist. In due course it will all implode again and cease to be. This represents the emancipation of science from the logical straitjacket of Hellenic speculation. It is the ultimate product of the methodological revolution which the biblical concept of the world has inspired. The philosophical significance of its outcome matching the biblical scenario has hardly been explored.⁸

The significance of the idea of creation for the understanding of history is much clearer. History as the Greeks fashioned it was an enquiry (*historia*) into human behaviour. Its purpose was to commemorate notable examples, and then to instruct those who might follow them. Its art was rhetorical and its method persuasion. Since political life was a microcosm of the universe, it repeated itself. The best way was already known. Although historians were concerned with the truth of what had happened, and with the quality of their information, it was not part of their practice to lay out de-

8 W. L. Craig and Q. Smith, *Theism, Atheism and Big Bang Cosmology*, Clarendon Press, Oxford, 1993, presents a debate on the theme; theism itself remains a classic issue in philosophy: Richard Swinburne, *Is there a God?*, Oxford University Press, Oxford and New York, 1996; the absence of God has led M. K. Munitz, *Cosmic Understanding: Philosophy and Science of the Universe*, Princeton University Press, Princeton, 1986, to postulate a necessary 'Boundless Existence' (of which we can know nothing) in order for us to be able to live at peace with what we do know.

tailed evidence. They did not have to prove anything. Too much argument would spoil the ethical value of their display.⁹

By contrast, modern historians are required to prove their points by critical documentation, and to demonstrate how one thing has given rise to another. This is because we presuppose that history is developmental. The origin and growth of some phenomenon is our focus, along with its influence and decline. Things will not be the same again. Though the public may want us to say that history repeats itself, we are looking for what is new. This is the imprint upon our culture of the shift from seeing the world as an essentially stable scene to recognising that everything is on the move from a purposeful beginning to a promised end.¹⁰

What difference does our understanding of the universe make to us? When we seek to work out the pattern of things, and to accept our place in it, we reflect our classical heritage. When we focus upon some goal that we see before us, and respond personally to its challenge, it is our biblically inspired understanding of the way the world works that we rely upon.

<p>(a) Classical logic Speculative philosophy supplies logical proofs in science and rhetorical models in history</p>	<p>(b) Biblical experience Propositional theology requires empirical testing in science and documentation in history</p>
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How do we know it all?

9 G. A. Press, *The Development of the Idea of History in Antiquity*, McGill-Queen's University Press, Kingston and Montreal, 1982; C. W. Fornara, *The Nature of History in Ancient Greece and Rome*, University of California Press, Berkeley, Los Angeles and London, 1983; G. W. Trompf, *The Idea of Historical Recurrence in Western Thought from Antiquity to the Reformation*, University of California Press, Berkeley, 1979.

10 R. G. Collingwood, *The Idea of History*, Oxford University Press, Oxford, 1946; H. I. Marrou, *The Meaning of History*, Helicon Press, Baltimore, 1966; Arnaldo Momigliano, *Essays in Ancient and Modern Historiography*, Blackwell, Oxford, 1977; Herbert Butterfield, *The Origins of History*, Eyre-Methuen, London, 1981.

Greek philosophy begins with observation, and proceeds to explain things by analogy. The Stoics, for example, conceived of the *cosmos* as an organism, while medical writers conversely transferred to the human body the Heraclitan understanding of the universe in terms of physical principles. A fifth-century treatise criticised this:

I am utterly at a loss to know how those who prefer these hypothetical arguments and reduce the science to a simple matter of 'postulates' ever cure anyone on the basis of their assumptions. I do not think that they have ever discovered anything that is purely 'hot' or 'cold', 'dry' or 'wet', without it sharing some other qualities.¹¹

But this objection does not go much beyond insisting that the four 'principles' are in practice mingled to varying degrees. It was much the same with the four 'humours':

This lecture is not intended for those who are accustomed to hear discourses which inquire more deeply into the human constitution than is profitable for medical study. I am not going to assert that man is all air, or fire, or water, or earth...

Each adds argument and proofs to support his contention, all of which mean nothing. Now, whenever people arguing on the same theory do not reach the same conclusion, you may be sure that they do not know what they are talking about...

But when we come to physicians, we find that some assert that man is composed of blood, others of bile and some of phlegm...

The human body contains blood, phlegm, yellow bile and black bile. These are the things that make up its

11 'Tradition in Medicine', Section 1, tr. J. Chadwick and W. N. Mann, *Hippocratic Writings*, Penguin Books, Harmondsworth, 1978, p. 70.

constitution and cause its pains and health. Health is primarily that state in which these constituent substances are in the correct proportion to each other, both in strength and quantity, and are well mixed.¹²

G. E. R. Lloyd related the argumentativeness of Greek science to the premium on debate developed in the small civil communities of the Greeks, citing Aristotle that “we are all in the habit of relating an inquiry not to the subject matter, but to our opponent in argument”.¹³ This resulted in a desire “to support, rather than to test, theories” and “a certain failure in self-criticism” due to “the quest for certainty in an axiomatic system”.¹⁴

The sense of achievement amongst the very narrow élite within which this debate was conducted led early to the assumption by Aristotle that “nearly all possible discoveries and knowledge had been secured already”. But the philosophical schools had no sure way of discriminating between the large amounts of “formalised common knowledge” and of “fantastic speculation” that they set out.¹⁵ They were classifying everything, but not testing their axioms. Mathematical order fascinated them, but not measurement. There was no lack of inventiveness (the steam engine, for example), but little application of it. As the theories were refined across a millennium, the speculative competition became ever more remote from the general interest.¹⁶

By the second century AD there had been established the vast compendia of observable knowledge that in some fields (Ptolemy on astronomy and geography, Galen on medicine) passed to the Arabs and remained in use until

12 ‘The Nature of Man’, Sections 1-4, *ibid.*, pp. 260-2.

13 Aristotle, *De Caelo* 294b. 7ff.

14 G. E. R. Lloyd, *Magic, Reason and Experience: Studies in the Origin and Development of Greek Science*, Cambridge University Press, Cambridge, 1979, pp. 266-7.

15 G. E. R. Lloyd, *The Revolutions of Wisdom: Studies in the Claims and Practice of Ancient Greek Science*, University of California Press, Berkeley, Los Angeles and London, 1987, pp. 330 (n. 147) and 335.

16 S. Sambursky, ‘The limits of Greek science’, *The Physical World of the Greeks*, Routledge and Kegan Paul, London, 1956, pp. 222-244.

modern times. Galen is the earliest extant scholar to treat the biblical theology as a serious challenge to the traditional philosophical schools. He recognised both the significance of its accepting God as the free initiator of things (contradicting the fixity of natural law) and its implied rejection of logical demonstration or proof in favour of experimental testing as the way of discovering how things worked. Galen likened this to the method of an unidentified medical school who called themselves ‘purists’:

(a) They compare those who practise medicine without scientific knowledge to Moses, who framed laws for the tribe of the Jews, since it is his method in his books to write without offering proofs, saying, “God commanded, God spoke”.

(b) Is not this Moses’ way of treating nature, and is it not superior to that of Epicurus? The best way, of course, is to follow neither of these but to maintain like Moses the principle of the demiurge as the origin of every created thing, while adding the material principle to it...For Moses it seems enough to say that God simply willed the arrangement of matter and it was presently arranged in due order...We however do not hold this; we say that certain things are impossible by nature and that God does not even attempt such things at all but that he chooses the best out of the possibilities of becoming.

(c) For Archigenes talks about what is spoken of, not among all, but only among the purists, and again I do not know who they are, although I wanted to know this to consider whether they may be believed without a proof or not. For I learned from Aristotle that probable statements are those approved by all people, or by the majority, or by the wise. Yet I do not know if we should consider the purists as being tantamount to the wise. I should have thought it much more proper to add some adequate reason, if not a cogent reason, to the argument about the eight qualities (*sc.*

of the pulse). Thus one would not, at the very start, as if one had come into the school of Moses or Christ, hear about laws that have not been demonstrated...He [Archigenes] did not consider it necessary to guide us by any logical method but adopted an empirical fashion of teaching, saying that eight qualities are spoken of by the purists.¹⁷

In spite of Galen's perceptiveness, the school of Moses and Christ did not quickly press home the methodological implication of their radically new starting point.¹⁸ Many of their best thinkers in later antiquity were as much concerned to come to terms with the principles of Greek rationality.¹⁹ It soon fell to the churches themselves to maintain the old culture (essential as it seemed to education).²⁰ A thousand years after Galen, the Aristotelian corpus was resuscitated in the West, thanks to the brilliant use of it made by the Arabs, and imposed on Catholicism as the correct philosophical partner for theology.

The consequences for scientific method of distinguishing the world from God were not decisively applied until the seventeenth century, in the wake of the Renaissance and Reformation, though the implications of the doctrine of

17 R. Walzer, *Galen on Jews and Christians*, Oxford University Press, London, 1949; (a) cited from the Arabic translation of Galen's *On Hippocrates' Anatomy* (Walzer, p. 11); (b) from *On the Usefulness of the Parts of the Body* xi 14 (Walzer, p. 12); (c) from *On the Differences between the Pulses* ii 4; the Greek texts, with Walzer's translations, are also reproduced in M. Stern, *Greek and Latin Authors on Jews and Judaism*, vol. 2, *From Tacitus to Simplicius*, Israel Academy of Sciences and Humanities, Jerusalem, 1980, pp. 306-15.

18 R. M. Grant, *Miracle and Natural Law in Graeco-Roman and Early Christian Thought*, North-Holland Publishing Company, Amsterdam, 1952.

19 Henry Chadwick, *Augustine*, Oxford University Press, Oxford, 1986; Jaroslav Pelikan, *The Mystery of Continuity: Time and History, Memory and Eternity in the Thought of St Augustine*, University Press of Virginia, Charlottesville, 1986, and *Christianity and Classical Culture: The Metamorphosis of Natural Theology in the Christian Encounter with Hellenism*, Yale University Press, New Haven 1993; J. M. Rist, *Augustine: Ancient Thought Baptized*, Cambridge University Press, Cambridge, 1994.

20 R. A. Markus, *The End of Ancient Christianity*, Cambridge University Press, Cambridge, 1990.

creation for the direct testing of all phenomena had been seen by the nominalists in the fourteenth century.²¹ The immediate trigger for the success of the experimental method has been detected in various quarters: the Portuguese navigators who proved Ptolemy wrong, the Protestant ethic, or the Puritans and the Royal Society. But there is no serious disagreement over the intellectual changes that resulted. As Hooykaas writes (p.455), one may identify in the seventeenth century that critical empiricism triumphed over rationalism (self-sufficiency of theoretical reason); that nature was not merely observed but mastered by experimental art; the universe was no longer explained as an organism, but in mechanical terms; and a new emphasis on the quantification of data (measurement, statistics). Thus the huge upswing in knowledge and understanding that mark out modern times is linked to the liberating effect of the biblical view of the world over the rational system of the Greeks.²²

21 A. E. McGrath, *The Intellectual Origins of the European Reformation*, Basil Blackwell, Oxford, 1987.

22 R. Hooykaas, 'The rise of modern science: when and why?', *British Journal for the History of Science*, 1987, 20, pp. 453-73 and 'Science and reformation', *Journal of World History*, 1956, 3, pp. 109-139; see also M. B. Foster, 'The Christian doctrine of creation and the rise of modern natural science', *Mind*, 1934, 43, pp. 446-68, repr. in C. A. Russell (ed.), *Science and Religious Belief: A Selection of Recent Historical Studies*, Open University Press, London, 1973, pp. 294-315; Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, Charles Scribner's Sons, New York, 1904; R. K. Merton, 'Science, technology and society in seventeenth century England', *Osiris*, 1938, 4, pp. 360-632, repr. with 'Preface: 1970' under its own title, Harper Torchbooks, New York, 1970, and *The Sociology of Science: Theoretical and Empirical Investigations*, University of Chicago Press, Chicago and London, 1973; I. B. Cohen (ed.), *Puritanism and the Rise of Modern Science: The Merton Thesis*, Rutgers University Press, New Brunswick and London, 1990; J. H. Brooke, 'Science and religion', in R. C. Olby et al. (eds), *Companion to the History of Modern Science*, Routledge, London and New York, 1990, pp. 763-82; A. Kleinman, 'What is specific to Western medicine?', in W. F. Bynum and R. Porter (eds), *Companion Encyclopedia of the History of Medicine*, Routledge, New York, 1993, vol. 1, pp. 15-23; A.C. Crombie, *Styles of Scientific Thinking in the European Tradition: The History of Argument and Explanation Especially in the Mathematical and Biomedical Sciences and Arts*, Duckworth, London, 1994, 3 vols.

A clear-cut marker of the seventeenth-century turning point may be seen in Harvey's demonstration of the circulation of the blood.²³ For nearly two thousand years the study of the pulses had been dominated by the doctrines of Herophilus, the great Alexandrian physician who had used the openness of Egypt in the handling of the dead (in contrast with Greek taboos) actually to dissect the human cadaver. The standard doctrine was that veins carried blood while breath was pumped along the arteries.²⁴ The blood that rushed out when you cut one was only trying to seal the leakage in the air-passage. (Herophilus discovered the nervous system, which he conjectured also worked as a series of air-ducts.) The rhythm of the pulses was interpreted by Herophilus in terms of the metrical patterns of Greek music. He devised a water-clock to measure them. The prudent Galen protested at the imprecision.²⁵ Yet the issue had to lie another 1500 years for solution by controversialists working from different intellectual premises.

In the field of history there was also a long-delayed reaction to the implications of the biblical world-view. At the level of how the course of world affairs was understood, W. B. Glover writes:

The transcendence of God and man means that history is free from the limitations of a determined natural order and that the future is open to novelty. Cyclical explanations of the ultimate reality man confronts are, therefore, no longer adequate. As awareness of this historical reality permeated the Western consciousness, modern man achieved a radically new mode of self-consciousness and of being aware of the world. He experienced a new sense of responsibility

23 R. French, *William Harvey's Natural Philosophy*, Cambridge University Press, Cambridge, 1994.

24 H. von Staden, *Herophilus: The Art of Medicine in Early Alexandria*, Cambridge University Press, Cambridge, 1989. See also Pliny the Elder, *Historia Naturalis* xi 89.219: *spiritus semitae*, 'passages for the breath'.

25 See von Staden *ibid.* nos 182 and 174; also D. J. Furley and J. S. Wilkie, *Galen on Respiration and the Arteries*, Princeton University Press, Princeton, 1984 (not seen by me).

for his own future and for the future of the world.²⁶

There was also a methodological transformation. The documents and footnotes that mark the modern professional writing of history are signals of our concern for authentic evidence as distinct from the historian's well-informed judgement of probability, with the actual words of those we write about as distinct from our interpretation of them, with data as distinct from display. We have to prove our points, rather than present them. In antiquity such a concern for authenticity belongs to the tradition of the philosophical schools, where adherence to the master's authority led to the digesting of his lectures, while documentary proof belongs in the law-courts, where one had to produce written evidence or witnesses to establish one's claim. It was not a part of the writing of history; for classical historians to have included such raw material would have been inelegant, and it had to be processed into a more rhetorically persuasive form.

Josephus, the Jewish historian, however, incorporated into his history the documents guaranteeing the freedom of Jewish communities in Greek and Roman states. His history has acquired an objective of legally valid proof that is remote from the didactic purpose of history. Eusebius, the first Christian historian, called his work *ekklesiastike historia*, perhaps on the analogy of the lost *philosophos historia* and *philologos historia* of his contemporary (and severe critic of the churches), Porphyry. We possess still the earlier *philosophos historia* of Galen. As with Eusebius, a 'philosophical history' is not one that interprets general history from a particular philosophical perspective, but one that establishes the succession of authorities within the school across the centuries, and details their main doctrines. In the case of Eusebius, it is precisely because he means to set out the orthodox succession to the major episcopal sees that he

26 W. B. Glover, *Biblical Origins of the Modern Secular Culture: An Essay in the Interpretation of Western History*, Mercer University Press, Macon, 1984, pp. 9-10.

has incorporated into his work *in extenso* a huge range of material excerpted from earlier writers. The ‘ecclesiastical history’ is an historical source-book. The implications of this concern for proving authenticity were not, however, at the time carried over into general historical practice.

It was not until early modern times—the sixteenth century—with massive disputes over the legitimacy of States, and above all the counter-claims of Catholics and Protestants over which was the true heir to the practice of the first churches, that the principle of proof from documentary evidence was established as the foundation for the scholarly study of history.²⁷ As in the field of natural science, it is the conflict over fundamental claims which produces the revolution in method.

(a) Classical order

People have their proper places determined by natural aptitudes; the republican state ensures harmony through selective participation

(b) Biblical community

Everyone has a personal mission, being endowed with gifts to make responsible choices; an open society helps each support the good of others

How then
shall we live?

If speculative philosophy was the first great distinctive of Greek culture, the second was the republican state. Both were premised on the axiom of a natural order. The sophists had debated whether one should live according to nature (*physis*) or to law (*nomos*). Aristotle resolved the dilemma by asserting that to live under law (or convention) was itself man’s nature: “man is by nature a political animal”.²⁸ To be without

27 J. G. A. Pocock, ‘The Origins of the Study of the Past’, *Comparative Studies in Society and History*, 1961-2, 4, pp. 209-46.

28 Politics 1253 a. Citations are from S. Everson (ed.), *Aristotle: The Politics*, Cambridge, 1988, the translation being the revision by Jonathan Barnes of that of Benjamin Jowett; in addition to studies listed in its ‘Bibliographical note’, there is a collection edited by D. Kent and F. D. Miller, *A Companion to Aristotle’s Politics*, Basil Blackwell, Oxford, 1991, and F. D. Miller, *Nature, Justice, and Rights in Aristotle’s Politics*, Clarendon Press, Oxford, 1995.

a state (*polis*) was to be either sub-human or super-human:

Further, the state is by nature clearly prior to the family and to the individual, since the whole is of necessity prior to the part...The proof that the state is a creation of nature and prior to the individual is that the individual, when isolated, is not self-sufficient...But he who...has no need because he is sufficient for himself, must be either a beast or a god: he is no part of a state.

By similar lines of reasoning Aristotle also concluded (1254 b):

Again, the male is by nature superior, and the female inferior; and the one rules, and the other is ruled; this principle, of necessity, extends to all mankind.

It is clear, then, that some men are by nature free, and others slaves, and for these latter slavery is both expedient and right.

These strenuous doctrines are part of a far-reaching argument, in which of course many other considerations arise, yet they remain lasting landmarks of the basic character of Greek political thought, much of which persists to our own day. It is essentially a rationalising defence of the established order. Both constitutional debate and utopian dreams formed part of that tradition. But what was fundamentally absent was any belief that the existing order should be reformed or overthrown.²⁹

Athenian democracy became the ideal of government throughout the rest of antiquity and into modern times. In important ways it was more drastically egalitarian than anything we might call 'democracy'—above all in the use of the lot to fill all the executive and judicial functions of government (except for military commands): this survives with us

29 For a range of extracts see P. J. Rhodes, *The Greek City States: A Source Book*, Croom Helm, London and Sydney, 1986; Ernest Barker, *From Alexander to Constantine: Passages and Documents Illustrating the History of Social and Political Ideas, 336 BC-AD 337*, Clarendon Press, Oxford, 1956.

only in the (much criticised) jury system. The practice of election was thought to be aristocratic, since obviously one elects only the best!³⁰ Yet the principle of direct participation applied only to the minority who enjoyed citizenship in small, local states. Increasingly, this implicitly timocratic principle ('rule of honour/wealth') was accentuated by Roman patronage. Status was supreme. By AD 212, when the whole free population of the Mediterranean was granted Roman citizen rank *en bloc*, the ideas of the world-state and of law incarnate in the sovereign went hand in hand.

In the same period the classical world heard for the first time the principle now embedded in civilised standards, that in the last resort each person must take the responsibility for deciding where truth lay. There was an ultimate law, higher than Caesar, said the Christian writer Origen:

Celsus' first main point in his desire to attack Christianity is that the Christians secretly make associations with one another contrary to the laws, because "societies which are public are allowed by the laws, but secret societies are illegal" ...As he makes much of "the common law" saying that "the associations of the Christians violate this", I have to make this reply...it is not wrong to form associations against the laws for the sake of truth.³¹

This extraordinary claim arose from the civil novelty of a quasi-nation forming itself in contradiction of its inherited national culture. The Jews could be understood (though alternately protected and suppressed) because they lived, though in exile, according to a well documented and respected national tradition of their own. The Christians, from the earliest stages alienated from Judaism, nevertheless assumed its heritage and insisted on abandoning their own. To the Romans this constituted an act of political sedition

30 R. K. Sinclair, *Democracy and Participation in Athens*, Cambridge University Press, Cambridge, 1988.

31 Origen, *Contra Celsum* 1.1 (tr. Chadwick); E. A. Judge 'The Beginning of Religious History', *Journal of Religious History*, 1989, 15, pp. 394-412.

(as the very formation of the name 'Christianus' signifies).³²

When the Roman emperor Galerius finally abandoned the attempt to impose cultural conformity, he stated in his 'edict of toleration':

...through some strange reasoning such wilfulness had seized the said Christians and such folly possessed them that, instead of following those institutions of the ancients which their own ancestors no doubt had first established, they were making themselves laws for their own observance, merely according to their own judgement, and as their pleasure was, and were forming deviant communities on alternative principles (*per diversa varios populos congregarent*)...³³

Thus was born 'the alternative society' as well as 'multi-culturalism'. The idea of inner withdrawal had had a long history in philosophy.³⁴ At the communal level it ran its course in dreams or small-group retreats. Monasticism found similar solutions, in reaction against the official establishment of Christianity by Constantine in the years immediately following the death of Galerius. But the New Testament demand that the principles of the kingdom of God be practised on earth by the citizens of heaven generated social action on a community-wide scale.

Julian, Constantine's last heir, who hoped to reverse the tide, was outraged that the 'Galileans' were actually providing for the needs of the poor amongst the 'Hellenes'. Augustine, half a century later, reports in a newly found letter how action groups from his church rescued hundreds of victims

32 E. A. Judge, 'Judaism and the rise of Christianity: a Roman perspective', *Australian Journal of Jewish Studies*, 1993, 7, pp. 80-98, reproduced in *Tyndale Bulletin* 1994, 45, pp. 355-368.

33 Lactantius, *On the Deaths of the Persecutors* 34 (citing the edict of 30 April 311), tr. adapted from that of J. Stevenson, *A New Eusebius: Documents Illustrating the History of the Church to AD 337*, revised W. H. C. Frend, SPCK, London, 1987, p. 280.

34 P. Hadot, *Philosophy as a Way of Life: Spiritual Exercises from Socrates to Foucault*, Basil Blackwell, Oxford, 1995.

of the press-gangs (which were ostensibly acting within the law), seizing them in the docks before they could be shipped abroad, and billeting them until their relatives could come for them.³⁵

When we insist upon national values, and stress the importance of everyone playing their part in the lawful public order for the sake of social harmony, we are echoing our classical culture. But when we insist upon our personal commitments, challenge reigning conventions, and accept it as our mission to persuade others to our cause and to live differently from the majority, we are picking up the freedom that was won on the biblical understanding of how we are to live as a new community in this world. Today everyone admires the integrity of the latter stance, while most of us settle for the comforts of the former.³⁶

(a) Classical ethics

Our problem comes from a tragic lack of foresight and moderation; education will ensure we do our duty with equanimity, while suffering is accepted as the just recompense for deficiencies.

(b) Biblical morality

Our problem is not so much cosmic as psychic—there is an enemy within; we refuse to do what we know we should; conscience condemns us, yet we insist on its demands, while meeting suffering in others with compassion despite their sins.

What is wrong with us?

35 E. A. Judge, 'Ancient beginnings of the modern world', *Ancient History: Resources for Teachers*, 1993, 23, pp. 125-48.

36 The Augustinian approach to being at once a citizen of this world and of the city of God has been recently applied in philosophy, by Alasdair MacIntyre, *Whose Justice? Which Rationality?*, Duckworth, London, 1988; in government, by Graham Walker, *Moral Foundations of Constitutional Thought*, Princeton University Press, Princeton, 1990; and in sociology, by John Milbank, *Theology and Social Theory*, Basil Blackwell, Oxford, 1991; on the resulting pluralism, see Charles Taylor, *Multiculturalism and 'The Politics of Recognition'*, Princeton University Press, Princeton, 1992; James Tully (ed.), *Philosophy in an Age of Pluralism: the Philosophy of Charles Taylor in Question*, Cambridge University Press, Cambridge, 1994; David Archard (ed.), *Philosophy and Pluralism*, Cambridge University Press, Cambridge, 1996.

The tragic view of life saw man as the victim of his own success. To step beyond one's settled place in the scheme of things, for however good an intention, only provoked the nemesis that cut everything down to size. A simple error of judgement might set one on the fatal course. An ethical education would train one in moderation, and above all in keeping one's balance in the shocks of encounter with others.

Greek ethics, although treating the duties each owes another by virtue of his position in the public order, is essentially concerned with self-management. Friendship is a reflection of one's self-interest.³⁷ Emotional involvement with others, whether through pity or cruelty, fear or love, will threaten the harmony of the soul. Commitments will have to be paid for.³⁸

The ideal is not action, but being. Work was done in order to win leisure:

Nature herself...requires that we should be able, not only to work well, but use leisure well; for...the first principle of all action is leisure. Both are required, but leisure is better than occupation, and is its end.³⁹

The term 'morals' comes from the Latin for 'ethics'. Both words refer basically to custom, but we habitually use them for rather different types of behaviour in relation to each other. Most people would find it hard to define the difference, yet they are not exactly interchangeable. Nonetheless, ever since Nietzsche wrote *Die Genealogie der Moral*, explaining morality as a biblical imposition on our culture,⁴⁰

37 J. Benson, 'Making friends: Aristotle's doctrine of the friend as another self', in A. Loizou and H. Lesser (eds), *Polis and Politics: Essays in Greek Moral and Political Philosophy*, Avebury, Aldershot, 1990, pp. 50-68.

38 The famous distillations of Greek wisdom into gnomic form give a clear picture of how ethical values were inculcated over the ages in Greek popular education: W. T. Wilson, *The Mysteries of Righteousness: The Literary Composition and Genre of the Sentences of Pseudo-Phocylides*, J. C. B. Mohr, Tübingen, 1994; J. C. Thom, *The Pythagorean Golden Verses*, E. J. Brill, Leiden, 1995.

39 Aristotle, *Politics* 1337b (n. 28 above).

40 F. Nietzsche, *On the Genealogy of Morality*, K. Ansell-Pearson (ed.), Cambridge University Press, New York, 1994, p. 19; see also B. Williams, *Ethics and the Limits of Philosophy*, Fontana, London, 1985, p. 198.

there has been no doubt as to its historical origin.

Contemporary philosophers are engrossed with the phenomenon.⁴¹ In spite of the displacement of God from the intellectual agenda, and from the public one in Australia (though not in the US), everyone in the community has a powerful moral sense shaped by the biblical tradition. The problem is how to justify it if the source has been discarded.⁴²

Whereas ethics can be rationally defined in terms of effective patterns of behaviour, and thus are self-regulating, morals require there to be someone else who places the obligation upon you. By 'morality' we mean now, not well balanced behaviour, but answerability to an external source of authority (God, or some less defined substitute for him). When we campaign for our causes we are often applying to other people the moral constraint we feel ourselves. If we cannot refer to its source in the divine commands, we are left with a mysterious pressure that we cannot rationally justify.

If morality turns ethics inside out by causing us to feel obligations to others often to our own disadvantage, it also causes us to look far more deeply inside ourselves for the source of our problems. Classical psychology had no developed treatment of either the will or the conscience, nor did it seek the heart of the human dilemma in the inner man. There was no autobiography in classical antiquity, in the sense of a retrospective disclosure of motives and emotions. That began with Paul, and was carried to an extreme by Augustine. It is thanks to them that everyone is now engrossed with the personal life. There were no psychological novels in antiquity.

Paradoxically, our inward-looking preoccupations go hand-in-hand with an activist approach to personal relations. Far from guarding our serenity against the shocks of

41 M. Smiley, *Moral Responsibility and the Boundaries of Community: Power and Accountability from a Pragmatic Point of View*, University of Chicago Press, Chicago and London, 1992; J. E. J. Altham and R. Harrison, *World, Mind, and Ethics: Essays on the Ethical Philosophy of Bernard Williams*, Cambridge University Press, London, 1995; D. Copp, *Morality, Normativity and Society*, Oxford University Press, New York and Oxford, 1995.

42 R. G. Poole, *Morality and Modernity*, Routledge, London, 1991.

contact, we value involvement. We believe we should always do something, and not just be. This highly personal, as opposed to naturalistic, sense of our relations with each other stems from our understanding of the world as the domain of the personal God. In particular, when we listen to him speaking in his Son, and are open to the gifts of his Spirit, we are drawn into personal relationship not with some 'boundless existence' but with the source of all reality revealed as personal being.⁴³

Whenever modern people speak of their commitments, when they feel an obligation, when they look for the opportunity to make their contribution to the community, and in many other behavioural patterns, they express the imprint upon them of the biblical morality and its author.

The Bible, unfashionable as it may be today, has shaped the development of many basic patterns of our culture. There remains the question of how to activate this heritage into useful consciousness. The appeal to the Bible itself is felt to be oppressive.⁴⁴ Through cultural criticism perhaps we shall find an avenue to re-open the Bible as a public good.⁴⁵ At least we should be able to remind our contemporaries of the debt they owe to biblical thinking in the development of the norms they cherish. ☸

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43 A. D. Momigliano, 'The disadvantages of monotheism for a universal state', *Classical Philology*, 1986, 81, pp. 285-297, reprinted in *Ottavo Contributo ...*, Rome, 1987, pp. 313-328.

44 Paradoxically it was the development of biblical criticism by the English deists that triggered the Enlightenment humanism whose pseudo-objectivity we are at last discounting; Henning Graf Reventlow, *The Authority of the Bible and the Rise of the Modern World*, SCM, London, 1984.

45 Lesslie Newbigin, *Truth to Tell: The Gospel as Public Truth*, Eerdmans, Grand Rapids, 1991.



Thomas Huxley

Thomas Huxley and the 'warfare' between science and religion: mythology, politics and ideology

David Starling

Here's what I think. There is no meaning of life. The whole thing is a gyp, a never-ending corridor to nowhere. What is passed off as an all-important search is basically just a bunch of philosophers scrabbling about on their knees, trying to find a lost sock in the cosmic laundromat.

Granted, their thoughts and conclusions are often beautiful but, despite the good press, beauty ain't truth. We are replicating DNA and that's it. The chicken, as biologist Richard Dawkins put it, is just the egg making another egg. I am a Steggle No. 14.¹

So writes Jon Casimir, journalist, student of popular culture and self-styled "Mr Rent-an-Opinion" on ABC Radio. That is the sort of intellectual food-chain through which our generation derives its ideas of the world: Charles Darwin

¹ Jon Casimir, quoted in J. Marsden (ed.), *This I Believe*, Random House, Milsons Point, 1996, p. 48.

via Richard Dawkins *via* Jon Casimir. We are nothing more than “replicating DNA”; religion is a matter of personal taste, because the only meaning in life is what we construct for ourselves. How do we know? Because science has proved it.

History is often appealed to, as well as science. Behind the popular assumption that science has disproved Christianity is a vague notion that history has shown the two to have been locked in a centuries-long struggle, from which science emerged as the winner some time toward the end of last century.² Those who grant this assumption draw the conclusion that we are left with only three real alternatives: to cling to religion in blinkered dogmatism; to abandon religion altogether and embrace secularism; or to refashion religion so that it consists merely in “a way of feeling, rather than in a set of beliefs,” and is thus untouchable by science.³

If we are to question that assumption, one of our tasks will be an historical enquiry, asking whether the ‘conflict metaphor’ is the best way of describing the historical relationship between Science and Christianity, and exposing the biases and pre-commitments of the human actors behind the faceless abstraction that we call ‘Science’.

When such questions are asked, and the history of science is examined closely, it is found to be as much bedevilled by mythology, politics and ideology as is the history of all other human enterprises. A revealing case-study of these dimensions of the history of science, and the part they have played in creating the perception of a ‘warfare’ between science and Christianity, can be found in the campaigns of Thomas Huxley—publicist for Charles Darwin, polemicist against Christianity and self-appointed Prophet of Victorian science. The purpose of this article is to examine the role he played in popularising Darwin’s ideas, and trace in turn the parts played by mythology, politics and ideology in the early

2 Cf. Bertrand Russell: “Between religion and science there has been a prolonged conflict, in which, in the last few years, science has invariably proved victorious”. *Religion and Science*, Oxford University Press, London, 1935, p. 7.

3 *Ibid.*, p. 17.

history of the theory.⁴

History is always at risk of becoming mythology—a collection of cherished stories handed down to us, that bear little relation to what actually happened in the past, but function in the present to explain and justify our view of the world. The history of science is no exception. Too frequently, the history of science handed down to us consists of a series of colourful anecdotes that serve as the semi-mythological underpinning of our belief in the progressive triumph of science over ignorance, superstition and religious dogma.

In the annals of the ‘warfare’ between Science and Religion, the encounter between Thomas Huxley and Bishop Samuel Wilberforce at Oxford in June 1860 occupies a position of prominence second only to Galileo’s confrontation with the Inquisitors.⁵ The encounter between the two took place at a meeting of the British Association for the Advancement of Science, just seven months after the publication of Darwin’s *The Origin of Species by Means of Natural Selection*, in a debate before an audience of several hundred over the merits of the new theory. Huxley, a close friend of Darwin’s, spoke in defence of the *Origin of Species* against the criticisms levelled at the theory by Wilberforce.⁶

Mythology

4 Our focus will be on the history of the *reception* and *promotion* of Darwin’s ideas, not on their formation. Thus, we will not be directly concerned with the validity of Darwin’s ideas in themselves, or the process by which he came to arrive at them; rather, our interest will be in the reasons why those ideas became so popular so quickly, and the role they played as ammunition in Huxley’s warfare against Christian belief. For a revealing discussion of the philosophical and social dimensions of Darwin’s own thought, see J. C. Greene, ‘Darwin as a social evolutionist’, and ‘Darwinism as a world view’, in Greene, *Science, Ideology and World View*, University of California Press, Berkeley, 1981.

5 Cf. K. R. Birkett, ‘Galileo: history v. polemic,’ *kategoria*, 1996, 1, pp. 13–42.

6 Wilberforce was not only the Bishop of Oxford but also a graduate in mathematics with first-class honours and an enthusiastic amateur ornithologist, in an age when most scientists were amateurs. At the time of the debate, Wilberforce was the vice-President of the British Association for the Advancement of Science.

According to the popular version of the debate, the bishop, speaking first, discarded any pretence of rational argument and attempted instead to crush the new theory beneath the weight of religious dogma, and poured scorn on it by asking Huxley whether his monkey ancestors were on his grandfather's or his grandmother's side. Huxley, in reply, turned the tables on the bishop by declaring that he would rather have a monkey for an ancestor than a man who used his position and his gifts of rhetoric to obscure the truth. Thus, Science won the day, and the forces of religion retreated beaten and humiliated to the dark citadels of dogmatism from which they had emerged.⁷ The historian J. R. Lucas summarises the popular version in similarly heroic terms:

Almost every scientist knows—and every viewer of the BBC's recent programme on Darwin was shown—how Samuel Wilberforce, bishop of Oxford, attempted to pour scorn on Darwin's *Origin of Species* at a meeting of the British Association in Oxford on 30 June, 1860, and had the tables turned on him by T. H. Huxley. In this memorable encounter Huxley's simple scientific sincerity humbled the prelatial insolence and clerical obscurantism of Soapy Sam; the pretension of the Church to dictate to scientists the conclusions they were allowed to reach were, for good and all, decisively defeated, the autonomy of science was established in Britain and the Western world, the claim of plain unvarnished truth on men's allegiance was vindicated, however unwelcome its implications for human vanity might be, and the flood tide of Victorian faith in all its fulsomeness was turned to an ebb, which has continued to our present day, and will end only when religion and superstition have been finally eliminated from the minds of all enlightened men.

7 The Danish historian, Vilhelm Gronbech, for example, described the debate as "one of the great battles" of a war which "ended in an overwhelming victory for science". Cf. J. R. Moore, *The Post-Darwinian Controversies*, Cambridge University Press, Cambridge, 1979, p. 61.

8 J. R. Lucas, 'Wilberforce and Huxley: a legendary encounter', *The Historical Journal*, 1979, 22, pp. 313-330, p. 313.

When the historical evidence is subjected to more careful scrutiny, however, it becomes clear that the standard account of the Huxley-Wilberforce debate, handed down in Leonard Huxley's biography of his father, is hardly an accurate representation of the facts. To begin with, Huxley and Wilberforce were by no means the only speakers in the debate, nor did contemporary observers necessarily consider them the most important speakers. Sir Joseph Hooker, who later became one of the chief witnesses for Huxley's version of the debate, made it clear at the time that he considered it was his contribution, not Huxley's, that was the most significant:

Huxley (wrote Hooker in a letter to Darwin, shortly after the debate) answered admirably...but he could not throw his voice over so large an assembly, nor command the audience; and he did not allude to Sam [Wilberforce]'s weak points nor put the matter in a form or way that carried the audience...I swore to myself that I would smite that Amalekite, Sam, hip and thigh...I hit him in the wind at the first shot in ten words taken from his ugly mouth.⁹

Further, it is by no means clear that the Darwinian camp 'won' the debate on that occasion at all, either in terms of the intrinsic quality of their arguments or in terms of the perceptions of their audience. Contemporary accounts give us no real warrant to award a clear-cut victory to either side.¹⁰

As for the content of Wilberforce's contribution, we can say with some confidence that his speech (a condensed version of the review of Darwin's *Origin of Species* that he had written five weeks earlier for *The Quarterly Review*)¹¹ was for the most part a measured and intelligent critique of

9 L. Huxley, *The Life and Letters of Sir Joseph Dalton Hooker*, 2 vols, London, 1918, vol. I, p. 526.

10 Cf. S. Gilley, 'The Huxley-Wilberforce debate: a reconsideration', in K. Robbins (ed.) *Religion and Humanism*, Basil Blackwell, Oxford, 1981, pp. 333-337.

11 *The Quarterly Review*, cviii, July 1860, pp. 225-64.

Darwin's theory, bringing to bear the most cogent criticisms that were being made within the scientific community of the day. Darwin himself, after reading Wilberforce's *Quarterly Review* article, adjudged it "uncommonly clever; it picks out with skill all the most conjectural parts, and brings forward well all the difficulties."¹² Any humorous remarks about monkey ancestors that Wilberforce may have attempted in the Oxford speech (and no-one seems sure precisely what either he or Huxley said on this score)¹³ were in no sense offered as a substitute for argument or evidence. Nor did the bishop argue for the rejection of Darwin's theory on a *a priori* theological grounds.

In short, as one historian has concluded, the standard account, as propagated by Huxley's son and the many accounts dependent on that work written since then, should be viewed as "a wholly one-sided effusion from the winning side, put together long after the event, uncritically copied from book to book, and shaped by the hagiographic conventions of the Victorian life and letters"¹⁴.

The abiding popularity of the story, however, has less to do with its historical accuracy than with its mythological power. If it didn't happen that way, then it *should* have, and why let the facts get in the way of a good story? Like the story of Galileo confronting the Inquisition, it pits the hero

12 Letter of Charles Darwin to Sir Joseph Hooker, July 1860: Francis Darwin, *Life and Letters of Charles Darwin*, 3 vols, London, 1888, vol. II, pp. 324-5.

13 Accounts differ as to whether Wilberforce's quip was about Huxley's ancestors—making the remark offensively personal—or about his own—making it merely inappropriately jocular for a scientific debate. Other versions suggest that Wilberforce erred in offending Victorian sensibilities by suggesting the idea of a monkey grandmother. As to Huxley's reply, he insisted forcibly that accounts of the debate be amended to make it clear that he did not say that "I would rather be descended from an ape than from a bishop". All the controversy over monkey grandmothers only served to obscure the fact that, as one contemporary observer judged, Hooker had been the only one to make any valid scientific arguments for the new theory, and Huxley had merely "scored a victory over Bishop Wilberforce in the question of good *manners*." Quoted in Lucas, *op. cit.*, p. 327.

14 S. Gilley, *op. cit.*, p. 332.

of scientific enlightenment against the representatives of religious dogmatism, and in both cases Science is ultimately proved gloriously right and religion ridiculously wrong. Christianity, the myth tells us, is intrinsically anti-scientific, and its proponents can respond to the claims of science only by blinkered denial or ignorant ridicule.

Extinguished theologians lie about the cradle of every science as the strangled snakes beside that of Hercules; and history records that whenever science and orthodoxy have been fairly opposed, the latter has been forced to retire from the lists, bleeding and crushed, if not annihilated; scotched, if not slain.¹⁵

The mythological imagery is no accident; Huxley delighted in portraying the relationship between science and religion as an epic struggle, and clothing it in the imagery of classical mythology and Biblical history. ('Smiting the Amalekites' was a favourite piece of Huxleyan rhetoric, used to describe his sorties against the ecclesiastical establishment.)¹⁶

The villain of the piece was, of course, Christian orthodoxy, described in similarly florid rhetoric as a geriatric demigod, vainly threatening "to visit with such petty thunderbolts as its half-paralysed hands can hurl, those who refuse to degrade Nature to the level of primitive Judaism." In contrast, the scientists are dressed in Philosophers' robes:

Philosophers, on the other hand, have no such aggressive tendencies. With eyes fixed on the noble goal to which '*per aspera et ardua*' [by their hopes and labours] they tend, they may, now and then, be stirred to momentary wrath by the unnecessary obstacles with which the ignorant, or the malicious, encumber, if they cannot bar, the difficult path; but why should their souls be deeply vexed? The majesty of

15 T. H. Huxley, 'The Origin of Species' (1860), in *Collected Essays*, vol. II, Greenwood, New York, 1893, p. 52.

16 Cf. Colin A. Russell, 'The conflict metaphor and its social origins', *Science and Christian Belief*, 1989, 1, pp. 3-26, p. 8ff.

Fact is on their side, and the elemental forces of Nature are working for them...¹⁷

Huxley's imaginative descriptions of the relationship between Science and Religion as an epic struggle between the forces of light and darkness provided a powerful myth for the technological societies of late nineteenth-century and twentieth-century Western Europe, as they moved from a culture shaped by Christianity towards a culture that many historians have described as 'post-Christian'. It is no surprise that the last quarter of the nineteenth century saw the writing of such triumphalist accounts of the progress of Science as J. W. Draper's *History of the Conflict between Religion and Science* (1875) and A. D. White's *History of the Warfare of Science with Theology in Christendom* (1896). Draper's book begins with a promise that he will "keep steadfastly in view the determination to write this work in an impartial spirit," but by the end of the book his impartiality appears to have worn a little thin:

The time approaches when men must take their choice between quiescent, immobile faith and ever-advancing Science—faith, with its medieval consolations, Science, which is incessantly scattering its material blessings in the pathway of life, elevating the lot of man in this world, and unifying the human race...¹⁸

Although both works were riddled with inaccuracies and methodological weaknesses, they found an eager and receptive public in Britain and America, largely because the myth that they popularised was so congenial to the times. Despite the substantial works of historical revision undertaken since then, the myth remains intact in the minds of many to this day.

17 Huxley, *op. cit.*, pp. 52-3.

18 J. W. Draper, *History of the Conflict between Religion and Science*, London: Henry S. King & Co., 1877, pp. xvi, 365.

Behind the mythological battles depicted by Thomas Huxley and his friends, a real struggle was taking place, but it was by no means the simple conflict between science and Christian theology that Huxley alleged. What brought theologians and scientists into conflict in this period was not a straightforward conflict between science and theology but rather the overflow from *internal* conflicts within the theological and scientific communities, conflicts that were as much political as they were ideological. Within the theological community, debate was generated by the inroads of Enlightenment philosophy and German Biblical criticism.¹⁹ Amongst the British scientific community, a new breed of professional scientists like Huxley were struggling for positions of prestige and influence against the established scientific elites.

Huxley was involved in both of these conflicts. As amateur philosopher he contributed frequently and enthusiastically to the theological and philosophical debates of the day, and as a lobbyist and power-broker he was involved boots-and-all in the struggle for supremacy within the scientific community. The historian Peter Bowler has suggested that Huxley's real success as a defender of Darwinism was not in public debate but rather in "the far subtler process of ensuring that the evolutionists gained control of the scientific community."²⁰ Thus, whilst engaging in surprisingly little open conflict in the established scientific journals, Huxley and his circle "used their editorial influence to ensure that Darwinian values were incorporated gradually into the literature."²¹ The journal *Nature*, too, was founded by Huxley and his friends at least

19 For example, 1860, the year of the Huxley-Wilberforce debate, also saw the publication of the hugely controversial *Essays and Reviews* which popularised German theology and Biblical criticism for the British public, and sparked public debate almost as heated as the debate over Darwin's ideas. Cf. S. Neill, *The Interpretation of the New Testament: 1861-1961*, Oxford University Press, Oxford, 1964, pp. 29-32.

20 P. J. Bowler, *Evolution: The History of an Idea*, University of California Press, Berkeley, 1983/1989, p. 190.

21 *Ibid.* See also R. M. MacLeod, "The X-club: a scientific network in late Victorian England," *Notes Rec. Roy. Soc. Lond.*, 1970, 24, pp. 305-322.

partly as a vehicle for promoting Darwinism.²²

What was taking place behind the scenes in the scientific community of Victorian England was a protracted struggle for control of the key institutions of research and education, between the representatives of the scientific establishment and a new breed of professional scientists such as Thomas Huxley and Joseph Hooker. The Victorian scientific establishment consisted largely of gifted and wealthy amateurs, together with the circle of (mainly Scottish) physicists and chemists, and centred on the University of Cambridge. Eminent amongst them were figures such as William Thomson (Lord Kelvin) and James Clerk Maxwell (the pioneer of electromagnetics and the kinetic theory of gases). These 'Cambridge Natural Philosophers' were the objects of the bitter envy of Huxley and his allies, who waged a systematic and relentless campaign to wrest from them the control of scientific research and education.²³

A key vehicle for this struggle was the group that called itself the 'X-club', an informal association of scientists who functioned as a powerful behind-the-scenes lobby group. Founded in 1864, with an original membership of just nine, including Huxley and Hooker, the group met monthly for the next two decades, and continued more sporadically and with a declining membership into the early years of the twentieth century. Their meetings were for dinner on the first Thursday of each month from October to June, at the St George's Hotel in London, a time and place chosen because the meetings of the Royal Society were at eight or 8:30pm on those evenings in a location nearby.

Discussion in their meetings frequently focussed on the affairs of that Society (a crucial organisation for the patronage and publicising of scientific research), to which all but one of the members of the X-club belonged. A measure of

22 Cf. R. M. MacLeod, 'The genesis of Nature', *Nature*, 1969, 224, pp. 423-461.

23 Cf. Russell, *op. cit.*, pp. 9-13 and M. Bergman, 'Hegemony' and the amateur tradition in British science', *J. Soc. Hist.* 1975, 8, pp. 30-43.

their success in influencing the nominations and elections to positions of influence within the Society was the fact that, from 1873 to 1885, when Huxley stepped down, every President of the Royal Society was a member of the X-club.

In addition, the X-club discussed and sought to exert control over the affairs of the other key scientific bodies of the time, including the British Association for the Advancement of Science, the Linnean Society, the Mathematical Society, the Geological Society, the Chemical Society and the Royal Institution of Great Britain. The X-club worked behind the scenes to have its members and other like-minded scientists elected to positions of power and influence. In a letter to a friend written in 1894, Huxley reported overhearing a conversation between two “distinguished scientific colleagues” in the smoking-room of the Athenaeum, which he summarised for his friend’s benefit:

“I say, A, do you know anything about the x Club?”
 “Oh yes, B, I have heard of it. What do they do?”
 “Well, they govern scientific affairs; and really, on the whole, they don’t do it badly.”²⁴

By then, the battle had largely been won, and Huxley could be forgiven a little complacency. Even by the 1880s, just two decades after the publication of the *Origin of Species*, the remaining opponents of the theory were claiming that Darwinism had become “a blindly accepted dogma carefully shielded from any serious challenge”.²⁵ The whole exercise had been a triumph of publicity and politics.

Beneath the political struggles within the Victorian scientific community were powerful ideological undercurrents. Thomas Hirst, a founding member of the X-club, wrote in 1864, shortly after the club’s foundation: “the

Ideology

24 Quoted in J. V. Jensen, ‘The X Club: fraternity of Victorian scientists’, *Brit. J. Hist. Sci.*, 1970, 5, pp. 63-72, p. 72.

25 Bowler, *op. cit.*, p. 190. Cf. E. Caudill, ‘The Bishop-eaters: the publicity campaign for Darwin and *On the Origin of Species*’, *Journal of the History of Ideas*, 1994, 55, pp. 441-460.

bond that united us was devotion to science, pure and free, untrammelled by religious dogmas".²⁶ The description was as revealing as it was misleading, because their very determination to be "untrammelled by religious dogmas" reflected a stubborn philosophical commitment of their own that was foundational to their thinking. What was meant by "Science, pure and free" was in reality the philosophy of 'scientific naturalism'²⁷ which was their own quasi-religious dogma. Thus Edward Frankland, another member, observed in his autobiographical *Sketches from the Life of Sir Edward Frankland*: "all these colleagues of mine...were of one mind on theological topics," and went on to suggest modestly that two of them (Thomas Huxley and the author Herbert Spencer), together with Charles Darwin, "are the three great modern evangelists whose literary work will guide the thoughts and actions of men long after the teachings of the four older evangelists have become obsolete."²⁸

Most often, Huxley and his friends described their role in the battle against Christian theology as a defensive one, protecting the domain of science against the incursions of theologians. John Tyndall, for example (a physicist and member of the X-club), addressed an audience in Belfast in these terms:

The impregnable position of science may be described in a few words. We claim, and we shall wrest from theology the entire domain of cosmological theory. All schemes and systems which thus infringe upon the domain of science must, in so far as they do this, submit to its control and relinquish all thought of controlling it.²⁹

26 Quoted in Jensen, *op. cit.*, p. 63.

27 The philosophical presupposition that the only possible knowledge we can have is of the phenomena of the natural world, and the only valid means we have of acquiring it is the scientific method. Cf. F. M. Turner, *Between Science and Religion: The Reaction to Victorian Scientific Naturalism in Late Victorian England*, Yale University Press, New Haven, 1974.

28 Quoted in Russell, *op. cit.*, p. 14.

29 *Ibid.* p. 16.

In reality, however, the campaign was as much aggressive as it was defensive. The aim was not merely to secure their own territory by asserting that cosmology was the exclusive domain of scientists, and that they alone had the right to make assertions regarding that subject; in reality, their intention was to go further, and deny theology the right to any territory at all.³⁰ The ultimate goal was not autonomy for science within its acknowledged limits, but rather a science *without limits*. The scientific method, Huxley asserted, was the *only* means of acquiring true knowledge. In a lecture entitled “On Improving Natural Knowledge” that Huxley delivered in 1866 to a group of working men, he outlined the most recent triumphs of science and pointed to the benefits that science brought to all of humanity. He then went on to stake its claims for the future:

If these ideas be destined, as I believe they are, to be more and more firmly established as the world grows older; if that spirit be fated, as I believe it is, *to extend itself into all departments of human thought, and to become co-extensive with the range of knowledge*; if, as our race approaches its maturity, it discovers, as I believe it will, that *there is but one kind of knowledge and but one method of acquiring it*; then we, who are still children, may justly feel it our highest duty to recognise the advisableness of improving natural knowledge, and so to aid ourselves and our successors in our course toward the noble goal which lies before mankind.³¹

30 Whilst denying any legitimacy to theology, Huxley could claim that he saw no conflict at all between science and *religion* (‘rightly understood’), drawing a distinction between theology, which made claims to possessing some truth-content, and religion, which was a matter not of the intellect but of the emotions, driven by “imagination...hope...and ignorance”. Cf. R. Barton, ‘Evolution, the Whitworth Gun in Huxley’s war for the liberation of science from theology’, in D. Oldroyd and I. Langham (eds) *The Wider Domain of Evolutionary Thought*, D. Reidel Publishing Company, Dordrecht & Boston, 1983, pp. 263-267.

31 Huxley, *Collected Essays, op. cit.*, vol. I, p. 41, quoted in F. M. Turner, *Between Science and Religion: The Reaction to Victorian Scientific Naturalism in Late Victorian England*, Yale University Press, New Haven, 1974, pp. 17-18. (Turner’s emphasis). Cf. Ruth Barton’s summation of Huxley’s

Huxley's own description of the basic philosophical principle on which he operated was 'agnosticism', a term that he himself coined³² to describe his "pretty strong conviction", derived from the philosophy of Hume and Kant, that the problem of existence was "insoluble".³³ In practice, of course, as many critics observed, Huxley made use of the principle more as a weapon against the metaphysical claims of his opponents than as a method that he himself followed with any consistency. For a true agnostic, comments one critic, Huxley was "certain of too many things: he had found his own 'gnosis', the scientific metaphysic of his time".³⁴ Increasingly, it seems, Huxley was confident that the "problem of existence" *was* in fact soluble, by science and science alone. Huxley was not merely seeking to defend the independence of science from the interference of religion, but rather to establish his own brand of scientific naturalism as a substitute religion.³⁵

Accordingly, in his battle against Christian theology, Huxley was not averse to 'stealing the uniforms' of the enemy, speaking of 'the church scientific', in which he served as a 'Bishop', and his lectures as 'lay sermons'. The Sunday Lecture Society he established was a kind of imitation Church service, with lectures on science and its benefits to mankind, sometimes even preceded by the singing of a 'Hymn to Creation'.³⁶ (Ironically, it was Huxley's own grandson, Aldous Huxley, who created a biting satire of the worship of Science

position: "the order of nature is an unbroken chain of cause and effect; all knowledge is scientific knowledge, obtained from observation and experiment, and available to all searchers after truth; no persons or books can claim the authority of special knowledge because there are no special revelations". Barton, p. 261.

32 From the Greek *gnosis* (knowledge) to which was added the negative prefix *a-*. An agnostic claims that no-one can know whether there is a God, or anything supernatural.

33 Huxley, 'Agnosticism' (1889), reprinted in *Collected Essays, op. cit.*, vol. V, p. 238.

34 N. Annan, quoted in D. W. Dockrill, 'T. H. Huxley and the meaning of 'Agnosticism'', *Theology*, 1971, 74, pp. 461-477, p. 461.

35 Although in his essay on 'Agnosticism' he claimed to have no interest in "the manufacture of imitation ecclesiasticism" (*op. cit.*, p. 143).

36 Cf. Russell, *op. cit.*, p. 16.

and Progress in his *Brave New World*. Huxley's Sunday Lecture Society is not *all* that far removed from the 'Fordianity' that has replaced Christianity in that novel.)

Huxley's philosophical commitments and his polemic against all forms of natural and revealed theology exerted a profound influence on his work as a scientist. In terms of both the logic of his ideas and the chronological development of his thought, Huxley's philosophy did not so much flow out of his science as did his science flow out of his philosophy. A close analysis of Huxley's scientific work before and after 1859, and particularly the scientific controversies in which he engaged, reveals that Huxley's "fundamental commitment" was not so much an inductive willingness to follow the evidence wherever it led as an ideological commitment to "the principle of scientific naturalism".³⁷ Thus, he tended time and again to undervalue work produced by scientists who invoked metaphysical or theological concepts and to overvalue the work of scientists who shared his naturalistic presuppositions.

Huxley's own biological researches, especially before 1859, tended if anything to push him *away* from the evolutionary gradualism proposed by Darwin. He had been a savage critic of Chambers' *Vestiges of the Natural History of Creation* (an evolutionary interpretation of the fossil record, the tenth edition of which Huxley reviewed in 1854). In his review, he pointed to what he considered to be the abundant evidence of *non*-progression in the fossil record, and questioned whether there could be any validity in "the whole argument of the 'Vestiges', as regards the successive development of life upon our planet," describing the evidential foundation of the argument as "baseless and rotten".³⁸ Again, the following year, he addressed the Royal Institution, presenting a trenchant critique of "the hypothesis of the progressive development of animal life in time".³⁹

37 M. Bartholomew, 'Huxley's defence of Darwin', *Annals of Science*, 1975, 32, pp. 525-535, p. 526.

38 Quoted in *ibid.*, p. 528.

39 *Ibid.*

Huxley's overnight conversion to the evolutionary cause following the publication of Darwin's *Origin of Species* seems to have been more a function of his philosophical convictions than of his scientific research. What attracted him as a philosopher to Darwin's theory was that, unlike earlier evolutionary schemas, Darwin's invoked no mysterious metaphysical upward drives, but gave the process a purely naturalistic explanation in the mechanism of natural selection.⁴⁰ As a scientist, he had few reasons to concur with Darwin's theory; his own work seemed to indicate a general picture that was static, not progressive, and that saw any changes that did occur as sudden leaps, not gradual progressions. Nor did his own work as a biologist change significantly for more than a decade even after the publication of *The Origin of Species*; he did not use natural selection to solve biological problems, and, according to one historian of science, "remained a pre-Darwinian anatomist as long as he lived".⁴¹

As a defender of Darwin's theory, Huxley made up in enthusiasm what he lacked in understanding. In a lecture entitled 'On species and races' that he gave early in 1860, for example, he "ran over the points of Darwin's case in a somewhat oblique fashion, and then gave way to a typically florid and self-important conclusion in which he exhorted his audience to cherish and venerate science."⁴² Darwin, when he received a copy of the lecture, complimented Huxley on the eloquence of the conclusion but confessed in a letter to Hooker that "as an exposition of the doctrine, the lecture seems to me an entire failure".⁴³

Here, as elsewhere in Huxley's thinking, we are forced to conclude with one of his recent biographers that "the reasons for many of the details of Huxley's scientific behaviour have to be sought outside his science, in the other aspects

40 Cf. *ibid.*, pp. 529-532.

41 M. Ghiselin, 'The individual in the Darwinian Revolution', *New Literary History*, 1971, 3, pp. 3-134, p. 125.

42 Bartholomew, *op. cit.*, p. 531.

43 Quoted in *ibid.*, p. 531.

and projects of his career, and in his underlying persona.”⁴⁴ Initially at least, it seems that it was as an amateur philosopher and a streetfighter in the struggles of scientific politics, rather than as a biologist, that Huxley embraced Darwinism. Huxley was not alone in this; the same observations could be made of many of Darwin’s early supporters. In Germany, for example, where “Darwinismus” became immediately and widely popular through the advocacy of the scientist and political radical Ernst Haeckel, enthusiasm for the new theory was not based altogether on an appreciation of the selection mechanism. Rather, enthusiasts for the new theory saw Darwin’s rejection of design as a weapon in their fight against conservatism, and were attracted to the theory as “a symbol opposed to traditional religion and as a promise of progress in human affairs”.⁴⁵ In the context of political liberalism and free-market economics, and the anti-Catholic feeling sponsored by Bismarck’s *Kulturkampf*, Darwinism offered an enormously popular way of understanding the world. For Haeckel, Darwin’s theory was assimilated into the adaptationist evolutionary theory of Lamarck and the pantheistic philosophy of Goethe, and treated as “only a small fragment of a far more comprehensive doctrine—a part of the universal theory of Development, which embraces in its vast range the whole domain of human knowledge.”⁴⁶

It is difficult to judge the extent to which Huxley and his colleagues were aware of the strength of the influence that their ideological biases exerted in their reception of Darwinism. Certainly, the process was not entirely unconscious, as Huxley himself bears testimony: “Every philosophical thinker,” he wrote of Darwin’s theory in 1860, “hails it as a verita-

44 M. Di Gregorio, *T. H. Huxley’s Place in Natural Science*, Yale University Press, New Haven, 1984, p. 196.

45 Bowler, *op. cit.*, p. 193.

46 E. Haeckel, *The History of Creation*, vol. I, tr. E. R. Lankester, Kegan, Paul, Trench & co., London, 1883, pp. 1-2. See also P. Weindling, ‘Ernst Haeckel, *Darwinismus* and the secularization of nature’, in J. Moore (ed.) *History, Humanity and Evolution: Essays for John C. Greene*, Cambridge University Press, Cambridge, 1989, pp. 311-327.

ble Whitworth gun in the armoury of liberalism”.⁴⁷ Whatever the truth of his claim for others, it certainly appears to have been an accurate reflection of his own thinking.

What conclusions ought we to draw? Certainly, no amount of historical enquiry into the motives and methods of its early proponents can prove or disprove the validity of Darwinian evolutionary theory. Nevertheless, an awareness of some of the forces at work in the early history of the theory can safeguard us against the assumption that the theory *must* have been correct because it ‘won’ in the end, or the naive impression that Darwinian evolution was accepted purely on the basis of ‘objective’ science, without consideration of the ideologies and biases of the human participants in the process. The scientists who were most vigorous and successful in promoting Darwin’s theory (eg. Haeckel and Huxley) were not necessarily the ones who understood it best, or the ones whose research best supported the hypothesis of evolution by natural selection, but rather the ones who had the strongest *a* reasons for finding the theory attractive. Further, an awareness of the extent to which ‘science’ can function as a tool of ideology helps to guard us against those who make religious and philosophical pronouncements and dignify them with the authority of science. Not least, it helps to undermine the myth of an intrinsic opposition between science and Christian belief, and the popular belief that the former has been “disproved” by the latter. ☸

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47 ‘The origin of species’ (1860), reprinted in *Collected Essays, op. cit.*, vol. II, p. 23.

Life on Mars ...really?

David Sinclair

“The most obvious crisis would be in the religious community. It certainly does challenge the notion that man was made in the image of God, and the superiority of man over other forms of life.”

Hugh Mackay, social researcher

“It is a major blow to all the major religions that believe we are the only beings in the universe”

Dr Ragvir Bhathat, chair of the Australian Search for Extra Terrestrial Intelligence¹

In early August the popular press was full of excited stories about the existence of life on Mars, and speculations about the possible origins of life on both Mars and Earth. This excitement was sparked by the leaking of a paper which was due to be published in the August 16 edition of the journal

1 These quotations come from ‘War of the words’, *Sun-Herald*, 11 August 1996. The sub-title was “The Mars discovery once more pits those two old foes—science and religion—against each other”; a classic example of the ‘warfare’ myth perpetuated by Huxley [as examined in this journal]. While the article quoted strong statements from the anti-religion perspective to the effect that the discovery of life on Mars would destroy religion, the religious commentators were untroubled by the discovery.

Science.² The paper was written by a team of researchers working for the National Aeronautics and Space Administration (NASA) and reported the results of their studies on meteorite ALH84001, which had been identified in 1994 as being of Martian origin. Since the popular interest sprang from a scientific report, it is useful to look at what McKay's NASA team actually found, and to ask where we should draw the line between scientific conclusions and speculation.

McKay *et al.* found polycyclic aromatic hydrocarbons (PAHs), a group of organic compounds, in ALH84001. This finding has been confirmed by at least one other group of researchers.³ PAHs are not produced directly by living organisms but they can be formed from other organic compounds that are by-products of biological activity. They can also be produced by human activities such as electricity generation, and by non-biological reactions in space, so why do McKay and his team conclude that the PAHs found in this meteorite are of extra-terrestrial biological origin?

First of all, biological contamination from Earthly sources has been ruled out for several reasons. The concentration of PAHs in ALH84001 is highest near the centre and drops to almost nothing in the outer layer. This suggests that the PAHs were present when the meteorite entered Earth's atmosphere and those in the outer layer were vaporised by the heat generated during entry. If the organic molecules had entered as contaminants since the meteorite arrived on Earth the concentration should be highest at the surface and lowest in the centre. Also, McKay's team measured concentrations of PAHs in the meteorite more than a thousand times higher than the concentration that would be expected in the Antarctic environment in which the meteorite was found. These results were combined with extensive checks to prevent contamination in the laboratory environment.

2 D. S. McKay *et al.*, 'Search for past life on Mars: possible relic biogenic activity in Martian meteorite ALH84001', *Science*, 1996, 273, pp. 924-930.

3 M. Grady, I. Wright, and C. Pillinger, 'Opening a Martian Can of Worms?', *Nature*, 1996, 382, pp. 575-576.

Carbonate deposits suggest life

Choosing between biological and non-biological origin of the PAHs prior to the arrival of the meteorite on Earth is more difficult. The researchers based their assessment on the proportions of various compounds within the general class of PAHs. The mixture of PAHs found in the meteorite was relatively simple. In contrast to this, mixtures of PAHs generated by non-biological methods tend to be much more complex. This led McKay's team



to suggest biological origin as a possible source of the PAH although they did not claim that this is the only possibility.

The second major strand of evidence looks at the structure and composition of carbonate deposits found in fractures and cavities inside the meteorite. These deposits occur in areas with high concentrations of PAHs. Their position within the network of fractures indicates that, like the PAHs, the carbonate deposits were present before the meteorite arrived on Earth. The deposits are similar in shape and chemical composition to carbonate deposits produced by some bacteria on Earth. One attempt to determine the temperature at which the carbonates formed gave a result of ~ 700 °C, which would rule out a biological origin. However a second study using a different method gave a result of 0-80 °C, so biological origin remains an option.

In some regions of the meteorite the carbonate deposits have a porous texture which the researchers interpreted as partly dissolved carbonate. These regions contain small grains of two different iron-rich minerals, one of which has specific magnetic properties. Simple chemical models can-

Life on Mars...really?

not account for the appearance of both types of iron-rich mineral in the same region as the dissolution of the carbonate. This does not rule out a non-biological origin, as the conditions under which minerals form can often be complex. McKay's team merely suggested that the mineral composition of the carbonate deposits could also be explained as the result of biological activity. Both of the iron-rich minerals found in the carbonate deposits can be produced under unusual conditions, with the specific magnetic properties observed, by several strains of bacteria known on Earth.

Studies of the surfaces of several carbonate deposits showed a grainy texture with many small oval-shaped or elongated objects. These surface textures could be the result of the carbonate being partially dissolved, but there are no similar rock samples available for comparison. The team members point out that the oval-shaped and elongated objects are similar in appearance to bacterial fossils found in many rocks on Earth, although the Earthly fossils are generally much larger. When attempting to identify Earthly bacterial fossils, geologists look for evidence of internal structure, such as a cell wall, or bacteria in the process of reproducing by dividing into two. So far no such evidence has been found in studies of this meteorite.

McKay *et al.* do not claim that any of this evidence proves the existence of past life in meteorite ALH84001. Each individual observation can be explained by an alternative, non-biological process. They do, however, suggest that all the observations taken together could be evidence for the existence of bacterial life on Mars in the past. While the existence of life on Mars has not been proven by this report, it presents evidence that suggests this possibility, and further study will be required to prove or disprove the possibility.

What conclusions can be drawn from this report? I would like to suggest that the only conclusion that can be drawn is the conclusion of the paper: "...we conclude that [the data] are evidence for primitive life on early Mars."⁴ Apart from the obvious limitations within the word "evidence", two words

4 McKay *et al.*, *op. cit.*, p. 929.

are important in this statement: “primitive”, and “early”. In spite of the enthusiastic speculations of popular science writers, evidence for the existence of bacteria is not evidence for the existence of higher forms of life. Bacteria are known to live on Earth in conditions which are not capable of supporting any other life. Neither can we say that this report gives evidence for the existence of life on Mars now. Astronomers believe that the surface of Mars has undergone dramatic changes in the past and these changes may have removed any previously life-supporting conditions.

The media excitement—and in particular, the attacks on religion based on these discoveries—almost all concerned the existence of *intelligent* extra-terrestrial life. Far from that, all that has been discovered is evidence for ancient, primitive life on Mars. While the paper by McKay *et al.* is well researched, and worthy of further consideration, responsible commentators should be careful not to use it to support speculations that go far beyond the scope of the evidence presented. Unfortunately, the media explosion of interest has demonstrated the readiness of the popular science press to do just that. ❀

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For those interested in a thorough discussion of what the existence of intelligent extra-terrestrial life might mean for Christianity, see Del Ratzsch, ‘Space travel and challenges to religion’, *The Monist*, 1988, 71, pp. 101-113.

reviews

Fallen justice

Peter Grice

If you're a fan of *The Bill*, or *Rumpole of the Bailey*, or if you're a devotee of the quiet Oxford adventures of Inspector Morse, you might feel an affectionate warmth towards the English criminal justice system. The opening line of *In the Name of the Law* by David Rose, then, will be a shock: "The criminal justice system is facing a crisis without precedent."

This crisis, according to Rose, is a basic failure of the criminal justice system to fulfil its expected role. It fails to prosecute the guilty, and in all too many instances, fails to identify unreliable evidence—and all in a context where the crime rate is at a record high. His view of the future can be summed up as follows:

As faith is lost in the mechanisms of due legal process, we seem to be moving inexorably towards an atavistic

*In the Name of the Law:
The Collapse of
Criminal Justice*
David Rose
Jonathan Cape, London,
1996.

form of justice where revenge is the dominant motive (p. xi).

He considers that the logical result of this failure will be a Darwinian society whose judicial currency in a struggle for existence is violence. His self-proclaimed task in this book is to expose the injustice, examine the roots and context of crime—although he promises no solutions to the problems he uncovers.

Australian readers will find many of the problems Rose uncovers chillingly familiar. Indeed, it is arguable that Rose could have observed the New South

Wales criminal justice system and reached the same conclusions.¹ This is hardly surprising, for at the base of all the injustices Rose describes, he finds the universal (and in his view, essentially unsolvable) problem of corrupt human nature.

Innocent but pronounced guilty

Rose starts his analysis by examining a certain type of case that became a media obsession during the eighties. An example of this genre is the famous 'Guildford Four' case. A pub in Guildford was bombed, killing five people. Four Irish nationals were arrested and convicted. The Four appealed unsuccessfully to the English High Court of Justice. The rumblings of discontent were not silenced. A number of prominent judges, clerics and politicians adopted their cause. Eventually Douglas Hurd, the then Home Secretary, was persuaded to have the appeal reheard. At the hearing, the Crown sensationally told the court that new material had come to light that meant that the Crown could no longer sustain

the convictions. This new material was evidence that the police had tampered with the original records of interview. Lord Lane, the then Master of the Rolls, the highest civil judicial officer in England, said five simple words that shook the English criminal justice system to its core: "The police must have lied". These words let loose a wave of public outrage and were the start of unprecedented and critical scrutiny of the criminal justice system (pp. 1-7).

Guilty but pronounced innocent

The second broad category of cases exemplifies the failure of the criminal justice system to prosecute the perpetrators of crime. As one example, Rose recounts the story of Mr Kano, a wealthy Nigerian businessman, and his family. They were the victims of a home invasion armed robbery in which 40 000 pounds was stolen. At trial the prosecution case seemed overwhelming and the defence almost farcically feeble, with outlandish stories of kidnap and false evidence being planted. At the conclusion of the trial the foreman of the jury announced a verdict of acquittal to the packed courtroom after only three hours of deliberation. Amid the uproar from the public gallery, four of the jurors were seen to wave to those acquitted and shout well wishes to them (pp. 165-168).

1 For an equally galling review of serious miscarriages of justice close to home, the reader is referred to the excellent *Justice and Nightmares: Successes and Failure of Forensic Science*, by Malcolm Brown and Paul Wilson, New South Wales University Press, Kensington, 1992.

Another example of this category concerns a wealthy police informer, Brian Charrington. In August 1991, after over a decade of almost worthless intelligence and successful drug dealing, Charrington told his police minders that the “Big One” was about to happen. He was mistaken in only one aspect: it was not big, it was huge. It was the largest importation of any drug into Great Britain. Two shipments were made, one in September 1991, of one and a half tonnes of 95%-pure Colombian crack cocaine, worth over 250 million pounds, and the other in January 1992, of 900 kilos of crack cocaine worth 140 million pounds. The shipments were secreted in lead ingots, which would conceal the contents from any X-ray equipment or sniffer dogs. In March 1992, over a dozen arrests were made in relation to the importation and the conspiracy.

At the trial, Justice May ruled that much of the evidence was inadmissible because evidence of conversations recorded by informants was hearsay. Another vital thread of evidence that bound the trial together was obtained by a phone tap, which was also ruled inadmissible. The charges were dropped, the operation having cost English taxpayers 20 million pounds. One of the accused saw fit to inform the Customs officers commiserating outside the court room that he was off

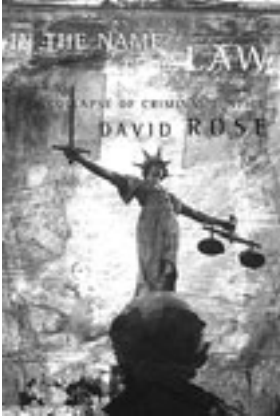
to spend some of the 80 million pounds he had made by virtue of his involvement in the importation, and there wasn't a [expletive] thing that they could do about it (p. 311).

Reasons

Why has the English criminal justice system—once touted as the finest in the world—failed to deliver justice? At the heart of the problem, Rose argues, is its adversarial nature. The trial becomes a war, in which each side plays upon the other's weaknesses. Skilled and cunning counsel can make careful witnesses appear to be liars and otherwise reliable evidence can be disregarded. It seems that truth, if not the first, is potentially one of the casualties of this type of warfare (p. 311).

Rose also blames judicial application of the rules of evidence for the failure to deliver justice. In Charrington's case, where there was conclusive evidence to support convictions, Rose argues that an outdated and unnecessarily technical rule forced the justice system to fail. A rule designed to exclude unreliable evidence had been blindly and inflexibly applied to exclude reliable evidence that should have been used to convict the perpetrators (p. 187).

The ‘Guildford Four’ case is a graphic example where the system failed to discern objectively *unreliable* evidence. This was perhaps due to the



guilt of the police rather than any weakness in the trial procedure (other than the trust it placed in police evidence). In criminal trials, a confession is the best piece of evidence to secure a conviction. A confession saves the police a lot of time-consuming investigation, which may not achieve the desired result. Getting your man to 'cough' saves work and all but ensures a guilty verdict (p. 18). It also ensures that the so-called 'clear up rate' is kept at an acceptable level. In simple terms, this rate is the percentage of convictions per arrests. It also serves as the measure of success for a police officer and the primary basis for assessing candidates for promotion (p. 108). There is pressure on the police to secure convictions if they and their superiors are to rise within the system.

Rose cites other motivations for

the police to fabricate evidence. His investigations revealed a police culture that draws heavily on the myth of "us" and "them". The police had to protect a critical and unappreciative public for not much reward. They were underpaid, disrespected in the community and their job was not made any easier by the idiosyncratic interpretations by judges of the rules of evidence. Rose found that what he termed 'noble cause corruption' was rife throughout English police forces. The police justify this corruption by appealing to the rhetoric of the 'Thin Blue Line' holding back the forces of evil (p. 215).

For all that, Rose recognises that there are certain basic problems which go beyond judicial structures and their organisation. Rose provides a depressing description of public housing estates in English cities. Unemployment, lack of education, poverty, drugs and family disintegration concentrated in one area is a sure recipe for a crime problem that overwhelms the police responsible for law and order in the area (pp. 86-90). Rose forcefully argues that crime is a symptom of these underlying problems, and while the problems remain unsolved the symptoms will persist. The criminal justice system is incapable of fixing the causes of crime, despite expectations and political rhetoric (p. 330). The failure of society to address the causes of crime is part of the overall failure of which the justice sys-

tem is merely a component. The end result is society's increasing inability to either protect those at risk from crime or bring those responsible to conviction. Both outcomes reduce the public confidence in the police and the criminal justice system as a whole.

Rose gives praise to a number of reform efforts made to the English police service and judicial system. However, he considers that recent statements from English politicians spoiling for election victory are detrimental to the reforms. The emphasis has shifted from a long-term broad-based approach (driven to a large extent by the police themselves) addressing crime at its social roots, to the 'crime control' rhetoric of longer gaol terms and more police. The hard-fought and necessary reforms have now made way for political expediency.² His pessimism regarding the direction of criminal justice is

therefore confirmed by his observations of English politics.

It is a bleak prognosis, but Rose is no melodramatic prophet of doom. His work appears to be well-researched, logical and measured. He relies upon extensive interviews with police, lawyers, criminals, journalists and the published findings of judicial and other inquiries for his material. Although his claims are wide reaching, Rose is at pains to avoid the 'crime wave' hysteria that is the subject of tabloid banner headlines.

Police corruption and miscarriages of justice are no strangers to Australian experience, particularly in the light of the ongoing Royal Commission into Police Corruption. However, this brings us to one point of contention with Rose. The situation is bleak, but his claim that we are facing a never-before experienced crisis in crime is perhaps unjustified. To take the state of New South Wales (my state), for instance, despite rising community anxiety about crime levels,³ the measurable crime is not necessarily increasing. The rate of various categories of crime,⁴ although fluctuating, is relatively static. It is true that crime statistics can be misleading as the definitions of par-

2 This cannot be regarded as a solely English phenomenon. The NSW Premier Mr Carr "has long been on the record as saying the public expects governments to get tougher on crime and criminals". The 1995 election campaign was dominated by "law and order" issues, which "whipped the public into a frenzy". The losing coalition parties had conducted research showing 60% of people expected to become a victim of serious crime. Carr expressed his preference to see increased police powers and police numbers and also increased penalties. (N. Vaas and J. Delvecchio, 'Gang laws: finding a just balance', *News Review*, *Sydney Morning Herald*, 7 Sept 1996, p. 32.)

3 NSW Bureau of Crime Statistics and Research, *Crime and Justice Bulletin* Number 28, 'Crime Perception and Reality', May 1996.

4 There have been increases in assault and crimes against property in NSW during the 1980s. It is suggested that this increase is due to

ticular crimes change over time, and statistics rely on the victims reporting the crime. For various reasons the victims may be unable or unwilling to do so; thus rates are distorted.⁵ Yet homicide is one case where statistics are seen as reliable because the definition hasn't changed and almost all murders are reported—and it has remained within a particularly narrow band in the last twenty years. In fact the homicide rate is much lower presently than it was a century ago.

Figures are not available to this reviewer for English crime levels, and Rose does not provide them. In other words, Rose does not draw on historical data to justify his claim that this crisis is unprecedented. Certainly the material he discusses is deplorable, but it may be the case that the current situation is the

historical norm, and close examination merely serves to make the problem look worse. It may be that the failures he uncovers have been repeated in many and varied contexts throughout history.

The solutions

Rose is honest enough from the outset to admit that he has no quick fixes for the crisis. Part of his point is, however, that 'traditional' philosophies do not have the solutions either. The political Right offers measures such as public condemnation for the 'criminal element' and the promise of harsher criminal penalties—or at least, these seem to be standard fare come election time, with political tough talk under the guise of 'law and order' and 'family values'. These statements seem to achieve only short term political gains without addressing the causes of crime. In Rose's opinion the mechanisms of the criminal justice system can never be the means of tackling the causes of crime. Similarly, Rose is critical of the Leftist position that lays the blame for crime at the feet of 'society', and seeks to forever tinker with the mechanics of the system whilst stubbornly refusing to acknowledge the responsibility of the individual to make moral choices. The Left has also "refused to accept that the weakening of family structures has brought any negative social effects" (p. x).

youth unemployment and increasing drug usage in the community. NSW Bureau of Crime Statistics and Research, Crime and Justice Bulletin Number 1, 'Trends in serious crime in NSW', June 1987.

5 NSW Bureau of Crime Statistics and Research, 'Crime and justice facts, 1996', NSW Attorney General's Department, Sydney, 1996, pp. 1-4.

6 The annual homicide rate for NSW was between 1.3 and 2.3 homicide incidents per 100,000 population between 1968 and 1992. NSW Bureau of Crime Statistics and research, Crime and Justice Bulletin Number 21, 'Trends in homicide 1968 to 1992', June 1994. The most recent figure is 1.8 (NSW Bureau of Crime Statistics and Research, Crime and Justice facts, March 1996).

Rose's failure to provide a solution is depressing, but not surprising. For Christians this knowledge is not unexpected. In fact, the continuing failure of human justice systems as pointed out by authors such as Rose merely demonstrates the truth of biblical predictions. There will always be judges who let personal prejudice and public expectations influence their decisions. There will always be lawyers and police who will seek personal gain over the need for fairness and truth. Even if the more blatant forms of injustice can be eliminated, the fact remains that people, the components of any justice system, are self-serving.

What Rose has demonstrated for us is that in spite of the triumphalism of humanistic philosophies, the world cannot provide solutions to its own problems. For all the centuries of political rhetoric and exploration of moral philosophies, humans are still as sinful and corrupt as they always were. Rose's analysis demonstrates the failure of humanity to rise above social problems, even with the wealth and sophisticated education systems we have today. The optimism of the Enlightenment has demonstrably failed.

While recognising this, Christians can do more than point out the failures. The Christian judge, lawyer and police officer have clear obligations to discharge their duties in a manner consist-

ent with God's character. Perhaps even more importantly, the wider Christian community has the obligation to model behaviours and attitudes which address the roots of injustice. If social ills such as unemployment, prejudice and greed are these roots, as Rose suggests, then the Christian community should exhibit behaviour and attitudes characterised by generosity, acceptance and selflessness. Although we may not be able to eliminate society's problems we should not underestimate the positive effect that we can have.

John Stott exhorts the Christian church to take leadership in reflecting the character of the loving and saving God in a fallen world. He argues that Christians can influence a community out of all proportion to numbers and percentages, and that throughout history, social reform has been led by daring minorities.⁷ He writes:

...we also believe in the power of God—in the power of God's gospel to change individuals and in the power of God's people (working like salt and light) to change society. We need to renounce both naive optimism and cynical pessimism, and replace them with the sober but confident realism of the Bible (p. 378).

⁷ J. Stott, *Issues Facing Christians Today*, Second edition, Marshall Pickering, London, 1990.

It is safe to say that injustice and social problems will be enduring features of society. It is also safe to say that no transformation of society will take place without the transformation of its constituents. It follows that the most important social reform from the Christian perspective must be restoring the relationship between humanity and its creator. We know that we will not see injustice eliminated until the day that the rift between the creator and the created is fully healed. In the meantime, we will face a world that

will reflect consequences of this failed relationship and the corresponding desperate need for it to be restored. ❀

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When God is not allowed

Andrew Cameron

Modernism is much more than Darwinism, and much more even than science. It is a total philosophy—a religion, really—that provides the basis for modern science, law, and education.

Phillip Johnson¹
Interview

Shane Ahyong has noted of Johnson's last book, *Darwin on Trial*, that the tension between empirical science and naturalistic religion "forms a subtext to the entire book".² In that book Johnson attacked Darwinism, one of the linchpins of modernism. Debates after this publication, Johnson says,

*Reason in the Balance:
The Case Against
Naturalism in Science,
Law, and Education*

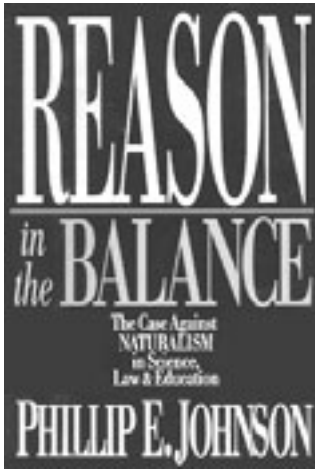
Phillip E. Johnson IVP,
Downers Grove Illinois,
1995

gave him "a thorough education in the relationship between naturalism and evolutionary science and in the true cultural importance of the theory of evolution" (p. 12). In a recent interview, Johnson explained that his new book goes beyond the strictly biological issues to deal with the naturalistic world view as a whole. The subtext is now the text.

There is therefore much overlap here with the first book, but the scope

1 'Real Issue', <http://www.leaderu.com/real/ri9501/reason.html>

2 'The science of a creation myth', *kategoria*, 1996, number 2, p. 69.



is wider. The aim is clearly stated: “I want to have an open discussion about whether naturalism deserves its dominating status” (p. 10). This work is to challenge the notion that ‘rationality’ is only consistent with naturalistic, rather than theistic, assumptions and philosophy. It is therefore a book about the metaphysics of naturalism—whether it has been proved, and why it is so entrenched in Western thought. So Johnson goes beyond his previous debate with scientists about origins, to the recent claims by physicists and cosmologists that science might *in principle* explain cosmological origins without reference to God. For Johnson, this naturalism in biology and cosmology is culturally crucial for the liberal rationalism that dominates educators, lawmakers and judiciary alike, since every culture uses a ‘cre-

ation myth’ as the basis for its public policy.

This book is heavily biased towards his experience in the USA, but most of it would probably ring true for members of any Western democracy.

Johnson’s first blow is struck against a standard liberal rhetoric, where something is labelled as ‘religion’ so as to define it as subjective fantasy and therefore ‘irrational’. The category is thus used to marginalise whoever holds the view so labelled:

A viewpoint or theory is marginalized when, without being refuted, it is categorized in such a way that it can be excluded from serious consideration. The technique of marginalizing a viewpoint by labelling it ‘religion’ is particularly effective in late-twentieth-century America, because there is a general impression, reinforced by Supreme Court decisions, that religion does not belong in public institutions (p. 21).

Johnson analyses some scuffles in US courts and universities where an attempt was made to marginalise various people, by using the religious label against them. Some of these attempts succeeded, while others failed. But why would such a manoeuvre occur in the first place? Largely because when religion is defined as “a way of thinking about ultimate questions”, there is

clearly an established religious philosophy in America which has no room for rivals, and it's not Christianity. It is clear that "a new established religious philosophy has replaced the old one" (p. 37).

What makes any philosophy into the established national one? It is simply "the creed of the people who do the governing, or most of them" (p. 42). Johnson is no conspiracy theorist. "There is nothing sinister or inherently unconstitutional about the existence of a *de facto* established public policy on religious questions" (p. 35), and he acknowledges that, until recently, Protestant Christianity had this role in America. Today the creed is "an intellectual condition [which] begins when people realize that God is really dead and that humankind is therefore on its own" (p. 37). He gives this mentality the label of "scientific naturalism and liberal rationalism", with "naturalism" and "modernism" used as handy abbreviations. It is clearly a metaphysical position, a view of what is ultimately real and unreal, and as such, it is religious.³ Thus the liberal State is not religiously neutral, as its proponents would claim.

3 According to Johnson, the way in which such a mentality then shapes government depends on whether the collective or the individual is deemed to be of greater value. Liberal democracies are systems which hold that naturalism is true and the individual is the most important unit in society. Socialist states share the same naturalism, but consider the collective as the primary unit.

This lack of neutrality is clearly demonstrated by how far the boundaries of tolerance are extended. In any government, the people with the dominant creed "are the ones who decide how much tolerance will be extended to others" (p. 42). In modern America, "[l]ike the old philosophy, the new one is tolerant only up to a point, specifically the point where its own right to rule the public square is threatened" (p. 37). This was most graphically demonstrated when the US Supreme Court ruled against State legislatures that had decided in favour of creationism being taught alongside neo-Darwinism in schools. In this case "modernist tolerance stops at the point where the religious people start demanding that public institutions treat their subjective beliefs as if they might possibly be objectively true" (p. 48). Why has this occurred especially in relation to creation science? Because it directly contradicts the naturalist metaphysic, and so directly challenges the creed of those who rule. Therefore it is censored from advocacy in a publicly-funded forum.⁴

But—so be it, some might say.

4 Creationism in schools is such an ideologically driven issue, Johnson says, that the matter of its factual status almost seems secondary. This is clear when science academics are disciplined simply for raising the possibility of intelligent design. It is a much lesser claim than conservative creationism, yet met with a similar outcry.

When Protestant Christianity was the dominant creed in government, government policy protected it. Is it now time for Christians to admit that the rules have changed, and live with it? The case for such a backdown seems to be strengthened when modernists argue a strong claim for the throne. Key problems in human affairs experienced under other societal systems, it is argued, are solved by a liberal government. Johnson lists these advantages without minimising any of them.

Nonetheless, his original question remains: does naturalism deserve this dominant status? Johnson asserts that it does not, because as a “theistic realist” he knows that “the Creator is real and naturalism is untrue”. For Johnson, no metaphysic that is fundamentally untrue deserves dominating status. That would truly be irrational.

However, serious modernism does not claim that the naturalist metaphysic is true simply because governments based on it produce benefits. Johnson recognises that one strong argument used by modernists against his assertion that Christian realism is true “is that science is based on naturalism, and the success of science has proved that naturalism is, if not absolutely true, at least the most reliable way of thinking available to us” (p. 49). Since naturalism has been so effective in bringing progress to science, the argument goes, it must there-

fore be the best metaphysic for other human affairs. But while Johnson acknowledges that this argument should be answered, its importance is vastly overshadowed by a much more significant development.

Surveying three major fields of scientific endeavour, Johnson identifies an ongoing quest among scientists to completely tell a “grand metaphysical story”. In this endeavour, leading scientists use their disciplines to convey to the general public an impression that science has somehow proven the naturalist metaphysic upon which their disciplines are based. Such an endeavour goes hand-in-glove with liberal government as science supplies the naturalism to government that validates its rule, while government gives science the resources to pursue its aims. Johnson’s long-winded label now makes far more sense. The society is scientifically naturalist, and so liberally rationalist.

Does naturalism deserve this dominant status in the scientific fraternity? Johnson engages with leading scientists to challenge its dominance here. The dialogue with cosmologists, physicists, mind-theorists and biologists is too involved to reproduce here, but the net effect is clever. Various inferences by scientists that the validity of naturalism is beyond question have much more to do with their belief systems than with scientific evidence.

Johnson therefore does not attempt to disprove metaphysical naturalism, but only to show that science has by no means proven it: “To insist that claims be tested and not just promoted as fact because they are made by persons labeled ‘scientists’ is simply to insist that the scientific method be followed and not just counterfeited” (p. 69). Speculation by scientists, albeit dressed in the language of science, is not science. (Nor do past scientific achievements vindicate the grand metaphysic, as is often claimed.)

Moreover, Johnson shows that scientists have a vested interest in the general acceptance of a naturalistic metaphysic. Johnson makes the point well in connection to philosophies of mind (p. 66): “Whoever explains the mind explains science, and gains authority to say how great or small a role science should play in the life of the mind. That is not an authority that scientists will voluntarily surrender to philosophers or theologians.” Johnson then revisits the debate with neo-Darwinism—again, not with a view to toppling it, but with the more limited goal of critiquing its underlying metaphysic. The chapter deserves close study, because there are lines of attack here that highlight how observable data has not come close to ‘proving’ the metaphysic behind the theory, even if they do support more moderate claims within it. Here, and in other

chapters, Johnson’s well-informed engagement with fields that are not his own is very impressive.

One ‘whistle-blowing’ chapter opens with what many would think an outrageous sentence:

Astrophysics seems to point to a creation event; the much-hyped physical theory of everything may never be more than a myth (and in any case would explain disappointingly little); natural selection is absurdly inadequate to explain the existence of conscious, reflecting, equation-solving and poetry-writing minds; and most important, the whole theory of blind watchmaker evolution relies on very dubious assumptions and virtually ignores the weight of the fossil evidence (p. 89).

Nevertheless, Johnson’s argument to this point is cogent enough to demonstrate that his claim is reasonable. He engages with critics who feel he has misunderstood the task of science. Science needs to proceed (it is claimed) by defining its inquiry into the world without reference to the supernatural. Johnson retorts that it cannot then turn around and use its results as proof that there is no such thing, so as to thereby marginalise theology and become the governing discipline of the modern university. For Johnson, here is a clear-cut case when outsiders to science should have

opportunity to audit the intellectual books—but theists, the natural auditors, are excluded from the arena of debate.

This analysis of scientific naturalism is the core of the book. Johnson applies it to account for a “culture war” in American universities as traditional realist approaches to truth are replaced by modernism, which itself quickly blossoms into the neopragmatism and relativism of post-modern academia. He surveys massive clashes in the legislature and the judiciary (especially over abortion law); and a fundamental competition between educators and parents for the minds of children. At some points the argument here is a little unruly and polemical, and raises the spectre of right-wing political oppression that he has sought to disavow earlier in the book. But the argument still has validity, for in part these chapters point to the negative outcomes of naturalism to ask, again, whether it deserves its dominant status.

The enemy, however, is not only ‘out there’. Throughout the book, some of his most sustained debate is with theists—theists who have gone to the naturalist ballpark, watched the game, joined it, and are now actively defending its rules. For these theists, theistic talk is reserved for the church/home ballpark. After interacting with ‘theistic naturalists’ he concludes that

the “real power of naturalism consists of its presence in the minds of its natural adversaries” (p. 101) and that “...the authority of modernism rests largely on the theists’ tacit acceptance of modernist premises” (p. 45). Why has this occurred? Because “[i]t is possible to make so strong a case for modernism that it may seem futile and self-destructive for theists to challenge modernism as a public philosophy” (p. 45). Modernism is strong, intellectually and politically. It is difficult to challenge it, not only because it sounds so convincing, but because the structures within which intellectuals live and draw salaries are based on it. Johnson quite clearly understands the professional risks associated with such challenges. Nonetheless, he is emphatic that integrity and truth themselves require the challenge to be made.

Which is the beginning of wisdom? Biblical theism says that wisdom begins with the “fear [proper understanding] of God”. Naturalism and its evolutionary satellite declare that the “death [intellectual discrediting] of God” is the essential metaphysical prelude to a true understanding of “how things really are”. The difference between the two ways of thinking is fundamental, and theists who try to bridge it by superficial compromise end up by tacitly accepting naturalism (p. 109).

The compliance of theists is all the more understandable when the only alternative offered is confrontational: to go to someone else's oval, start playing a different game, and abuse the incumbents about the stupidity or dishonesty of their whole enterprise. Johnson's real strength, then, is to propose a very credible third alternative: play the game hard in their ballpark and by their rules, but constantly question the validity of the rules—in a way that won't get you sent off for abusing the referee. "If theologians hope to win a place in reality...they have to stop seeking the approval of naturalists and advance their own theory of knowledge" (p. 107). Johnson starts this process by injecting material from Romans 1, to raise the possibility of a *wilful ignorance* on the part of naturalist science.

In this way, the book marvellously reveals how theists are only up against *other people*. The naturalistic worldview that drives western democracies forward is not some great unassailable monolith that will annihilate whoever touches it. It is just the view of lots of different people, and like any viewpoint, it can be debated, questioned and challenged. Like anything else in human relationships, there are wise ways and inept ways to do this. Inept ways are the ones that create confrontation: court cases, conspiracy theories, aggressive tracts. Johnson gave some ex-

amples where wisdom used relationship and dialogue instead: a chat with an adversary in a grocery store achieved far more than a public attack; and an open debate staged by Christians, where both sides of the story were told, created interest and goodwill. The notes to his appendix refer to a book on theistic science by a group of theists, and include part of an astoundingly positive review of it from an anti-creationist journal. Johnson takes away fear by showing that such things are not just do-able, they're being done.

It should be noted that the book is essentially concerned with modernist people who value the notion of rationality. Modernism has a two-worlds view of reality—that there are objective facts to be known, and subjective values to be believed (pp. 32-3). Christian realism would say that the latter are based upon the former, thus giving us some overlap and dialogue with modernism. Johnson is therefore (perhaps naively) optimistic about the ability of modernist people, after reasoned debate, to expand the boundaries of rationality and freedom of thought. But insofar as post-modernism collapses the former into the latter, Christian realism has a very different task trying to dialogue with it.

Though it includes some dialogue with postmodernism, Johnson's book may not form an effective *kategoria* against it. Arguably, a modernist

worldview sits most comfortably with the baby-boomer generation now in positions of authority in science, law and education. Post-modernist 'challengers' are as a rule younger, and perhaps new forms of *kategoria* need to be developed for them. But even so, there is something in this book for everyone,

since modernism will certainly be around for a long time to come. ☸

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Is the Bible true after all?

Andrew Reid

In the 1770s Johann Semler suggested that the time had come for the Bible to be treated in the same manner as any other book. The suggestion proved to be a watershed in the study of the Bible. From that moment on the Bible would be studied from an increasingly anthropocentric and rationalistic viewpoint. The age of modern critical study of the Bible had begun.

According to Harrisville and Sundberg, until a short time before Semler, study of the Bible relied heavily on a worldview which reflected categories provided by the Bible itself—what they call the Augustinian worldview. In other words, Christians (and especially Protestant Christians) studied the Bible believing the following sorts of things:

The Bible in Modern Culture: Theology and Historical Critical Method from Spinoza to Käsemann
R. A. Harrisville and W. Sundberg
Eerdmans, Grand Rapids, 1995

- humans are sinful, completely corrupted by the fall;
- humans cannot therefore establish a right relationship with God by practising any form of inherent virtue or goodness;
- humans therefore require God's grace to live and are to live utterly dependent upon him for all that they are and will be; and
- ultimate truth comes from God through the Bible and the church to

the individual Christian.

With the coming of the Enlightenment, this worldview came under sustained attack. Its dark view of human nature was replaced with a “cheerful optimism”, and its God-centredness was replaced with “a mode of thought which removed the living God far off, and subordinated the religious to the moral”.¹ Humanity, in this view, is not depraved but innocent. Salvation is not from hell and damnation into another world but is about this world’s transformation. Humans are not totally at the whim of God’s disposal but hold their future in their own hands. Most of all, truth does not come from divine revelation. It is only found when humanity flees superstition and oppressive institutions and pursues critical knowledge (that is, a knowledge that is based on the rigorous questioning of everything).²

In biblical studies this clash of worldviews found its expression in the

‘historical-critical method’. It aimed to free biblical interpretation from what was perceived as “the grip of supernaturalism and ecclesiastical dictates”.³ The method was in theory not subject to any higher authority, and its exercise was able to come to conclusions that were ruthlessly critical of Scripture’s content. The end result was that the Bible and Christianity as historical (and religious) phenomena became thoroughly relativised.

Acknowledging their predisposition to an Augustinian worldview, Harrisville and Sundberg set out to document the war between these two worldviews in the history of biblical studies from Spinoza to Käsemann. They do this by analysing the work of those whom they understand to be the principal figures in this history in terms of their contextual setting and their enduring significance; authors such as Reimarus, Schleiermacher, Strauss, Baur, Hofmann and Troeltsch among others. The goal is to provide an “opportunity to explore the meaning of historical criticism of the Bible in our time” and to “propose for consideration a faithful stance that a biblical interpreter might take which discloses, for the life of the church and its mission, the content of Scripture as the revelation of God”.

1 Adolf von Harnack, *History of Dogma*, Neil Buchanan (trans.), Dover, New York, 1961, 5:72f.

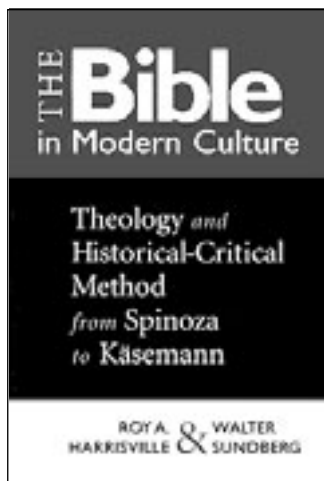
2 Hence the famous passage from Immanuel Kant: “Enlightenment is man’s release from his self-incurred tutelage. Tutelage is man’s inability to make use of his understanding without direction from another. Self-incurred is this tutelage when its cause lies not in lack of reason but in lack of resolution and courage to use it without direction from another. *Sapere aude!* ‘Have the courage to use your own reason!’—that is the motto of the Enlightenment”.

3 Russell Pregeant, *Christology Beyond Dogma*, Fortress, Philadelphia, 1978, p. 15.

Having worked through the book with great interest and having enjoyed their survey of their “principal figures”, it was with eager expectation that I came to the final chapter of their work. What would be the ideal faithful stance that would disclose the content of Scripture? The conclusion did not give quite what was promised, but what it provided was valuable.

It is evident, Harrisville and Sundberg write, that the models of Biblical interpretation inherited from the Enlightenment are increasingly problematic. They claim to be able to free themselves from their cultural presuppositions and philosophical commitments to establish the true meaning of the text. However, a survey of the major figures has demonstrated that this is far from true—they, their methods and their conclusions are as much the products of their culture and political context as any of those who went before them. Hence, what we have in the Enlightenment tradition of biblical criticism is nothing less than another religion that supplants biblical faith.⁴

⁴ One of the few to have courage to admit this is Strauss in his *The Old Faith and the New* where he says, “My conviction, therefore, is, if we would not evade difficulties or put forced constructions on them, if we would have our yea, yea, and our nay, nay—in short, if we were to speak as honest, upright men, we must acknowledge we are no longer Christians” (quoted p. 110).



In setting up what is in effect another religion, the biblical critics have cut themselves loose from the Christian community of faith which gave their new religion life in the first place. At the same time, this new religion has demonstrated its inability to explain effectively the religious significance of its work. In a new world no longer indebted to a biblical worldview, continued historical criticism of the Bible in the Enlightenment tradition is without persuasive warrant. It will “become not simply ‘ancillary’, but ‘parasitic’” (J. D. Levenson, quoted p. 269).

The most we can expect of historical criticism (as it subjects itself to an Augustinian worldview) is the “verification of the verifiable and the demonstration of the demonstrable—facts, objectifiable history, occurrences, what-

ever can be known or ascertained by dint of sheer logical and mental effort". In other words, the most we can expect of historical criticism is that it tells us that Jesus was handed over to death and was raised. It is faith that asserts that Jesus was "handed over to death *for our sins* and was raised *for our justification*" (Rom 4:25). When critical study of the Bible does this it is "not the enemy of the church, but its austere teacher, even its friend."

Each of these points is potent and helpful. Nevertheless, Harrisville and Sundberg have hardly given us much that is new; neither have they achieved their goal of proposing how a faithful biblical interpreter might approach Scripture in such a way that the content of Scripture as the revelation of God might be disclosed to the people of God. The conclusion, then, is disappointing in its lack of real progress in providing a way ahead. (The length of the conclusion was a disappointment in itself—twelve pages, compared with an average of over twenty pages on each of the 'principal figures'.)

Nevertheless, Harrisville and Sundberg really have helped us at a fundamental point and at a crucial time. Over the past two to five years I have picked up article after article, and listened to or watched report after report, that seeks to question either the historicity of the biblical record or

the portrait of Christ given in the New Testament. Groups of people such as "The Jesus Seminar" are actively seeking "to update and then make the legacy of two hundred years of research and debate a matter of public record" and to liberate the people of the church from the "dark ages of theological tyranny" by liberating Jesus.⁵

The point is that there is little that is new in these articles. All that is happening is that what has previously been the reserved domain of academic theologians, clergy and a few educated lay people is now being brought out into the public arena. As the theologians come out of the closet and popularise their story, we are being told that somehow what we are getting is not only educated, but objective, unbiased results from people who have somehow been able to free themselves from their cultural presuppositions and philosophical commitments.

The rhetoric of these articles flows freely, as we are told that the writers of the New Testament are not to be trusted in their presentation of the life of Jesus. Any record of the supernatural found in the Bible must be rejected as

5 Jesus Seminar, *The Five Gospels: What Did Jesus Really Say?*, Macmillan, New York, 1993, p. 1, quoted by M. J. Wilkins and J. P. Moreland (eds) in their introduction to *Jesus Under Fire: Modern Scholarship Reinvents the Historical Jesus*, Zondervan, Grand Rapids, 1995, p. 2.

inauthentic since ‘modern science’ and experience supposedly demonstrate that supernatural phenomena do not exist; and the biblical records of the life and death of Jesus should be treated as fictitious until they can be proven truthful.

It is here that Harrisville and Sundberg help us. Their historical survey tells us that those championing these methods and positing these conclusions are as tyrannised by their cultural and political context and their philosophical commitments as any of those who went before them. There is no such thing as a ‘presuppositionless’ reader. Every approach to Scripture, including the ‘objective’ one, is grounded in certain external convictions held on the part of the interpreter. However, because presentation of the historical-critical method taps into key words and ideas that we value (‘objectivity’, ‘liberation’, ‘scientific’ and so on), we fail to ask the bigger questions.

We fail to examine the basic assumption, whether the philosophical naturalism or scientism which underlie their methods and conclusions is indeed superior to a theistic worldview which underlies the alternative approach to the interpretation of Scripture.

The popularised notion of Scripture, in particular the doubt cast on the historical accounts of the New Testament, is based upon scholarship which fails to live up to its own rhetoric. Harrisville and Sundberg have done a good job of demonstrating that the ‘objective’ discrediting of the historical accounts of Jesus is anything but that. It is a pity that popular accounts of religion continue to propagate this myth. ❀

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