

JONATHAN R. TOPHAM
**Teleology and the Concept of
 Natural Law: An Historical
 Perspective**

*The paper considers the difficulty of retaining an active sense of **divine providence** when events are explained by scientific laws. Historical examples are used to illustrate how the advance of **naturalistic explanation** may reduce both the sense of **wonder in creation**, and the apologetic force of the **argument from design**. The God-of-the-gaps mentality is rejected in favour of a **divine legislator** conception of God: laws are seen as contingent on God's will and therefore '**miraculous**'. Difficulties with this approach are discussed, and an agenda is proposed for the formulation of a theology of nature based upon it.*

Introduction: Law and Purpose

'Our faces, of course, didn't just happen. They evolved for good biological reasons'.¹ I sense that a common response to statements of this type is one of disappointment. Christians might feel that if a particular phenomenon can be explained by reference to a natural law (in this case the law of natural selection) then their sense of providence, of God working His purpose out, may be fallacious. The question with which I will deal in this brief account is whether or not the progress of naturalistic explanations necessarily removes from the Christian account of Creation the possibility of attributing purpose to God. Hence the title: for teleology (from the Greek *Telos* = end) is the doctrine of ends, purposes or final causes.

There is a sophisticated literature which deals philosophically with the legitimacy of using teleological explanations in the biological and human sciences (i.e. explanation in terms of the final purpose of an action or organ). However, the methodological question of the legitimacy of teleological explanations in science is

¹ 'About Face', BBC Radio 4, 23rd June, 1988.

possibly tangential to the identification of Divine purposes in the Created world. Furthermore, the subject is a legitimate field of enquiry for historians as well as philosophers: focussing on certain actual attempts to solve the problem. The present account concentrates on the early nineteenth-century in Britain: a period in which Christian thinkers were forced to respond to an increasingly successful tradition of scientific naturalism. A study of their attempted solutions is useful at least in as much as hindsight demonstrates the pitfalls to which they are prone.

There seems to be a prevailing misconception that the commonest nineteenth century religious approach to teleology was a simple God-of-the-gaps mentality, of which William Paley is taken to be the archetypal exponent. On this view, the only purposeful adaptations which deserve our awe and wonder as works of God are those which have not been given causal explanation by subsumption under a natural, scientific law. It is clear that this type of stereotype would lead to just the sort of disappointment noted above, on the discovery of a natural law. The province of God would gradually diminish as science advanced in its explanatory success, until only a few resilient miracles (if anything) would be left as indications of God's activity.

However, there are no straightforward God-of-the-gaps theologians to be found in the nineteenth century. Even Paley did not exclude natural laws from the province of God's activity. He speaks of the 'general laws of matter' as instances in which 'God . . . has been pleased to prescribe limits to His own power, and to work his ends within those limits'.² Paley's reservation, instead, concerns the usefulness of this fact in apologetics. For Paley it is the contrivance of mechanism (esp. in animal anatomy) to achieve purposes, despite the limits of natural law, which speaks of the power of God, and makes His existence more probable.

A more forceful contrast to the stereotyped nineteenth century natural theologian is provided by the Lancaster-born scientist, polymath, coiner of neologisms³ and sometime Master of Trinity College,

² William Paley, *Natural Theology*, London, Chapter III, 1802.

³ For instance he coined the words 'scientist' and 'physicist'. 'Ion', 'anode' and 'cathode' first appeared in his correspondence with Michael Faraday, and the words 'Eocene', 'Miocene' and 'Pliocene' were first used by him in describing geological periods. He coined the words 'Catastrophist' and 'Uniformitarian' for the antagonists in that famous early nineteenth-century debate. 'Paramagnetism', 'diamagnetism', 'biometry', 'photistics', 'thermiotics' and 'palaetiology' are all his. This is not

Cambridge, the Revd. William Whewell. Whewell (1794–1866), though much neglected by posterity, was one of the foremost men of science of his day, writing mathematical textbooks on mechanics, and making major contributions to mineralogy and the theory of the tides. Yet, his importance came more from his breadth of intellect. As testimony of this, he wrote on German Ecclesiastical Architecture, translated Plato's dialogues, was greatly interested by German philosophy, and was involved in educational theory. He became Knightsbridge Professor of Moral Philosophy in Cambridge University (1838–1855), and was responsible for the founding of the Natural and Moral Sciences Triposes there. His *History of the Inductive Sciences* (1837) and *Philosophy of the Inductive Sciences, Founded on their History* (1840) were among the most profound reflections on the nature of science in nineteenth-century Britain.

Whewell was also a devout Anglican priest. Appropriately, he was selected in 1830 to be one of the authors of the *Bridgewater Treatises*. This series was written in response to a bequest of £8,000, made by the eighth Earl of Bridgewater for the commissioning of a work on 'The Power, Goodness and Wisdom of God as manifested in the works of Creation.' In his treatise, *Astronomy and General Physics, considered with reference of Natural Theology* (1833), Whewell argued at length that the idea of divine purpose and providence is not endangered by the explanation of natural phenomena in terms of natural law. Indeed, the existence of order in nature speaks of purpose, and law of intelligence. The existence of natural law, he supposed, could never be explained in any ultimate way by science. Its implication was, in fact, that there must exist a powerful legislator who created the physical universe.⁴

This attempt by Whewell to produce a naturalistic teleological argument for God has been recently shown to have a greater depth than appears in the *Bridgewater Treatise*.⁵ In some of his Cambridge sermons, Whewell manifested profound insight in his response to

insignificant: it demonstrates his profound involvement at the forefront of many different sciences.

4 William Whewell, *Astronomy and General Physics considered with Reference to Natural Theology*, William Pickering, London, Book III, Chapter IV (1833).

5 By using the phrase 'ontological' or 'metaphysical status' in this context, I mean that laws are supposed to have some independent existence. They are no longer mere descriptive generalizations, nor are they the behests of God. Instead, they are conceived to be, if not actual agents in themselves, then at least sufficient to remove any need for a causal agent (a final cause) in the explanation of the phenomena subsumed under them.

deism. He did not suggest that God must be reintroduced into a naturalistic account of the universe merely as a miracle worker, for this would have meant conceding to the deists the majority of the ground. Such a position (which Prof. Hooykaas calls 'semideism') would involve the acceptance of the deist/naturalist tenet of the necessity of natural law, whereby law itself is granted ontological status.⁶

For Whewell, law was ultimately contingent on God's volition. In this way, he made nature thoroughly supernatural. The whole of Creation is to be seen as dependent on God for its moment by moment existence and order. In such a universe, semideistic divine interventions are not necessary in order for one to believe in divine purpose. This view of the natural world comes very close to that which Prof. Hooykaas characterizes as the Biblical view.⁷ As well as transcending the concepts of nature and supernature, it effectively unites law and awe. Dr. John Brooke has shown that Whewell considered the study of nature to be important in the devotional context, precisely because the believer who observes the orderliness and purpose of the natural world would be excited to awe, and would therefore be advanced in the faith.

This view of the created world has been developed in the R.S.C.F. (now called Christians in Science) over a number of years. Most notably, the late Prof. MacKay gave some useful markers in understanding the Divine perspective.⁸ As he pointed out, to understand adequately God, the natural legislator, one must appreciate that He created also the whole temporal-spacial framework of our universe. Yet although this is the beginning of a detailed articulation, our task is still far from complete. This much has become clear to me in reading some of the historical attempts to reconcile teleology and natural law. In fact, Whewell himself exemplifies well some of the chief difficulties, and so I will concentrate largely on him, for the sake of brevity.

6 J. H. Brooke, 'Indications of the Creator: Whewell as apologist and Priest', in M. Fisch & S. Schaffer, *William Whewell*, Cambridge University Press, Cambridge, Forthcoming (1989). I am greatly indebted to Dr Brooke for an advance copy of this excellent paper, and for permission to refer to it here.

7 R. Hooykaas, *Natural Law and Divine Miracle: The Principle of Uniformity in Geology, Biology and Theology*, Brill, Leiden, pp. 169-228 (esp. pp. 206-226) (1963).

8 D. M. MacKay, 'The Sovereignty of God in the Natural World', *Scottish Journal of Theology*, (1968), 21, 13-26; D. M. MacKay, *The Clockwork Image: A Christian Perspective on Science*, Intervarsity Press, Leicester (1974); D. M. MacKay, *Science, Chance and Providence*, Oxford University Press, Oxford (1978).

Law and Necessity

In his *Bridgewater Treatise*, Whewell noted that there is a profound human tendency to become increasingly familiar with natural laws to the extent that it seems to be impossible that they could have been otherwise. In other words, laws seem to take on the status of metaphysical necessity. This error he attributed to the deductive habit in science, where natural laws are the axioms from which deductions are to be made.⁹ In this he appears to have had the French mathematical physicist, Laplace, particularly in mind. Newton had supposed that the stability of the solar system required direct divine intervention (the clockmaker rewinding the mechanism). Laplace was able to explain the observed stability by mathematical deduction from Newton's laws. He is supposed to have commented on Newton's supposition of divine intervention that he had 'no need of that hypothesis'. Whewell was not disturbed by this advance in naturalistic explanation. His concern was that men of Laplace's deductive frame of mind frequently took the laws as given, and so were prone to go further and to assume that they had dismissed God from the scheme altogether, when they had plugged gaps of ignorance.

Whewell contrasted the deductive habit to the inductive habit. For Newton the empirical scientist, he explained, the laws of motion were not 'given'. Rather, they could only be discovered *a posteriori*, and were contingent upon the free choice of God, the legislator. Whewell was convinced that all inductive scientists had a strong sense of awe; were aware of the contingency of natural laws; and were therefore usually struck with the likelihood of the existence of a designing legislator.

Historically, it has been argued, the spirit of empiricism can be traced to the presupposition of a voluntarist Deity, and the contingency of the natural order. It is interesting to see that A. J. Ayer—the champion of empirical philosophy—attributes the upsurge of the necessitarian view of law (which he rightly identifies as inimical to science) as a result of the secularization of the idea of a divine legislator. For, as the laws imposed by God on nature cannot be disobeyed by nature, then when God is abandoned, the necessity of laws (as metaphysical entities) is the result.¹⁰ But this rather puts the cart before the horse.

⁹ *Op. cit.* (note 4). Book III, Chapters V & VI.

¹⁰ A. J. Ayer, 'What is a Law of Nature?', in A. J. Ayer, *The Concept of a Person*, Macmillan, London, pp. 209–234 (esp. pp. 210–211) (1963).

Christian apologists have long noticed that it is the complacency with which laws come to be treated that makes it seem possible that there is a nature which is independent of Divine activity. In other words, ontological status is granted to laws of nature, independently of any legislator. The Divine is squeezed out by the supposed necessity of laws. 'Necessity' (used in contrast to 'contingency upon God's will') is one of the buzz words, like 'chance' (used in contrast to 'purpose'), which occur in eighteenth and nineteenth century apologetics. These words graphically demonstrate how the rise of naturalistic explanation has not been without a corresponding tendency to blindness with respect to divine purpose.

We have already seen how Paley, as a result of this, took the inexplicable adaptation of organisms (which he assumed to be the result of interventions) as the most successful evidence of design. A whole catalogue could be given of nineteenth century apologists for whom the striking nature of organic teleology made it the most successful strategy. But what of Whewell? While he was firmly attached to the linkage between law and legislator, he had no strong faith in its apologetic usefulness. He did not consider it possible to prove the existence of design in nature. He was more concerned to show that, with the presupposition of design, one could make sense of the universe. The law-legislator conception of teleology was, for Whewell, more successful in reassuring the faithful than in confounding the sceptic. It could restore the sense of awe which he perceived to be missing as a result of the semideistic view of nature. Indeed, Prof. MacKay has noted that the sense of awe is lacking in modern Christian devotion.¹¹

It is interesting to see from the work of Dr. D. Livingstone (among others) that the theory of evolution by natural selection was greeted by some Christians in a way which reflects Whewell's general principle of the teleology of law and legislator.¹² However, it seems to be the case that the attempts to recapture a theistic evolutionary teleology were not popularly successful. In view of the coherence of the divine legislator conception as espoused by Whewell, it is surprising that Charles Kingsley's similar vision of a God who makes things make themselves had so little success. It is consequently of interest to discover the reasons for the relative neglect of this mode

11 D. M. Mackay, 'God—or Chance?', *Science and Faith Newsletter*, 8, 27–30 (esp. p. 29), (1987).

12 D. N. Livingstone, 'The Idea of Design: The Vicissitudes of a Key Concept in the Princeton Response to Darwin', *Scottish Journal of Theology*, 37, 329–357, (1984).

of conceptualizing creation, a problem which deserves further research. One possibility is that it is related to the reduced psychological impact of naturalistic explanations, as indicated by Whewell: more imagination is required to see God in natural than in avowedly supernatural events.

It is clear that a thorough presentation of the sort of view espoused by Whewell could restore awe into Christian devotion. But if it is to do so, the details need to be more clearly defined. Furthermore, the apologetic force of the argument from design must be accepted to be rather weak. Though this is undoubtedly so, we might question the current orthodoxy that the teleological argument is of no use at all. I suggest that this orthodoxy has blinded Christians to the need to make their view of creation fully coherent. While there is a large difference between demonstrating coherence and proving a doctrine (even if only on probabilistic grounds), the former needs to be done not only for the sake of the faithful, but also for unbelievers.

The Limits of Naturalistic Enquiry

Perhaps the most difficult problem facing the doctrine of creation we are investigating is the question of the limits of naturalistic explanation. At what point should the scientist resign her commission, and accept that a supernatural or occult force is involved which cannot be reduced to an explanation by reference to natural law? For Whewell, and for many of his contemporaries, the unique place of humankind in nature appeared to be under threat from naturalistic explanation. Indeed, Whewell was very unhappy about naturalistic explanations of the origin of man, notably as espoused by Robert Chambers in *The Vestiges of the Natural History of Creation* (1844). However, he is said to have rejected such naturalistic accounts because of the paucity of the evidence, not because he was unable to conceive of God acting by natural law in that case.

Professor Hooykaas codifies what he calls the Biblical view of this matter in the following maxim: 'The scientist, even when he is a believer, is bound to try as far as possible to reduce miracles to regularities; the believer, even when he is a scientist, discovers miracle in the most familiar things'.¹³ However, history shows that many who have professed such sentiments have found it impossible

13 *Op. cit.* (note 7), p. 405.

to live by them. Each generation of Christians considers certain categories of subjects to be, *a priori*, unsusceptible of naturalistic explanation. We must ask very seriously whether or not we can free ourselves to be total empiricists.

If, as scientists, we commit ourselves to Hooykaas' principle, then we must search for naturalistic explanations of *all* the categories of events which are appropriate to our scientific discipline. But this means being open to the possibility that events which we had previously considered to be miraculous may in fact be susceptible of naturalistic explanations. If a methodological commitment to seek naturalistic explanations wherever possible is reconcilable with faith, then it provides a piece of land which can be defended to the last. The land we would be sure of is that God's activity is manifest in phenomena, even if these can all be described by natural laws. Faith would not depend on interventions, and consequently, there would be no progressive loss of territory as is the case in a view of nature where certain events are taken, *a priori*, to be supernatural. The possibility that all events may be explained naturalistically has been accepted. We may ask, however, what the cost of conceding this ground really is, and whether it leaves us anything worth defending?

To cut to the very heart of the question, can we allow the archaeologists and philologists, the sociologists of the Ancient Jewish and early Christian societies to give naturalistic explanations of the inspiration of the sacred authors? I am not, of course, suggesting that the Bible is not divinely inspired. I am enquiring about the nature of the inspiration: whether or not it be divine in a law-like way or in an interventionist way. This query broadens out to include all religious experience. Can the Christian psychologist be allowed to seek a naturalistic account of the believer's experience of God? All these questions are involved in the relatively straightforward assertion that, in practice, we must be empiricists. They challenge the unspoken assumptions of the orthodoxy to which we belong.

The Problem of Evil

For the Platonist, the *demiurgos* (creator) tries to represent as best he can the ideas in the divine mind, working with pre-existent, intransigent matter (which already operates according to natural laws). There is a nature against which the creator has to struggle, and by which he is bound. To that pre-existent nature can all imperfection be assigned.

For the Christian, creation is *creatio ex nihilo*. There is no nature against which divine activity can be contrasted. Yet, as Paley wrote:

'It is as though one Being should have fixed certain rules; and, if we may so speak, provided certain materials; and, afterward, to have committed to another Being, out of these materials, and in subordination to these rules, the task of drawing forth a creation; a supposition which . . . induces a necessity for contrivance.'¹⁴

Put more simply, it may appear to be the case that God is struggling against something, but what (on a Christian view) can it be, except himself? Paley concluded that God had set himself laws within which he must work in order better to display His power in overcoming difficulties. This theme is reiterated by many others in the course of the nineteenth century.

Whewell (and also Thomas Chalmers) considered that to the natural eye of man, the appearances of the world might more easily speak of dissonance than harmony. It is the eye of faith which enables the believer to see the purpose behind the appearances. Both of these writers attacked Paley's utilitarian calculus of pleasure, and the eighteenth century platitudes concerning 'the best of all possible worlds'.

Whewell suggested that in many instances, the divine perspective was necessary in order to perceive the higher purpose of some apparently useless or harmful facet of nature. Such a perspective may well be inaccessible, even to the believer. Many other nineteenth century theodicies (that is, attempts to vindicate God's goodness and justice in the presence of evil) develop this theme. Again, Prof. MacKay suggests that events which appear to go against the order of things are more rational from the divine perspective. For instance, the resurrection of Christ is, taking the higher rationality of God, the only thing which we could have expected to happen. (This seems to be the import of Peter's words in his sermon on the day of Pentecost, when he said of Jesus 'It was not possible for him to be held by death', Acts 2:24)

But can we give no partial explanations to those sensitive souls who are held from faith by the apparent brutality of the world? A considerable strand of historical revision now portrays the falling perception of teleology following the publication of Darwin's *On the Origin of the Species* . . . (1859) as being due to 'the ethical revolt against Christianity', rather than to the semideistic view of nature for

14 *Op. cit.* (note 2). Chapter III.

which the theory plugged some of the largest 'gaps'. Well before the theory of evolution by natural selection, Alfred, Lord Tennyson, was aware of the apparent brutality of nature. In his poem *In Memoriam* (1850), in which he mourns the loss of a friend, he writes:

'Are God and Nature then at strife,
That Nature lends such evil dreams?
So careful of the type she seems,
So careless of the single life;

'That I, considering everywhere,
Her secret meaning in her deeds,
And finding that of fifty seeds
She often brings but one to bear,
'I falter where I firmly trod . . .'¹⁵

Once teleology was made dependent on the 'struggle for existence', it perhaps became less plausible than ever before. Even if theodicies were possible within the framework of faith, the apologetic appeal of teleology was no longer as strong.

The philosophies and theologies of Bergson, Whitehead, Hartshorne, and Teilhard de Chardin have been attempts to recapture a striking sense of purpose in the natural world, post Darwin. But all these attempts appear to rely on a conception of God as less than omnipotent. We may ask whether the question has been adequately addressed by more orthodox Christians. The model which we are considering here makes the problem appear more acute still, because of the strong sense in which God is responsible for the ongoing order of the creation.

Our standard response to the problem seems to be to blame physical evil on our own moral evil: on Adam's fall. Yet this becomes difficult when the physical evil of which we speak appears to be constitutive of the creative process. Could it be that the suggestion of Prof MacKay, that God's perspective is independent of time and space, will allow us to understand how the plan of creation can be made defective throughout by a fall which is temporally posterior to the creative process?

It may be worth noting that there is a sense in which evolution by natural selection reinstates teleology. For much of the nineteenth century, apologists showed disquiet about the bloodiness of nature. As I have said, one major response was to put this down in part to a

15 Alfred, Lord Tennyson. 'In Memoriam', *The Poetical Works of Alfred, Lord Tennyson*, Macmillan, London, 1908, p. 261 (Chapter LV).

higher purpose than was yet known. Quoting from Tennyson again, we read:

'Oh yet we trust that somehow good
Will be the final goal of ill . . .

'That not a worm is cloven in vain;
That not a moth with vain desire
Is shrivelled in a fruitless fire,
Or but subserves some others gain.

'Behold we know not anything;
I can but trust that good shall fall
At last—far off—at last, to all,
And every winter change to spring.'¹⁶

In one sense purpose is discovered in the apparently purposeless deaths which Tennyson recounts. Nothing dies but what advances the creative process.

However we answer this enquiry, it is clear that there are many problems facing not only the notion of organic teleology, but the notion of teleology generally. Even if we deal with these problems, the apologetic force of the teleological argument has doubly lost by the advancement of natural law. It is diminished, as we have already noted, by the replacement of the striking appearance of divine intervention, by the possibility of ongoing divine activity as a natural legislator. We must now acknowledge in addition that a creative process which appears to be based on a morally repugnant system makes the purpose of that process seem somewhat tainted.

In conclusion, then, I have mixed feelings. For it is clear that Whewell's stratagem for dealing with teleology in a world of advancing naturalistic explanations is remarkably attractive. It recaptures for the believer a strong sense of providence and Divine government. It allows for miraculous interventions, but also makes all events miraculous. As such, the believer becomes more in awe of God. The locus of teleology cannot be shifted away from God by statements such as that with which this account began.

But if our dictum is to be *credo ut intelligam*, I believe in order that I may understand, then what is to become of apologetics? Increasingly, It is becoming easier to believe that the scientific account of the world is sufficient in and of itself. A metaphysical commitment to the necessity of natural laws, much as it goes against

16 *Op. cit.* (note 15). p. 261 (Chapter LIV).

the positivist spirit, is the order of the day. At the same time, those who are somewhat disposed to find God's activity manifested behind natural phenomena might find it less easy to do so when the natural laws which he is said to have imposed appear to be at odds with what is said of his power and goodness. Quoting again from Tennyson:

[Man] trusted God was love indeed,
And love Creation's final flaw—
Though Nature red in tooth and claw
With ravine shrieked against his creed—¹⁷

The problem of pain can be solved more easily within the faith than for the unbeliever.

By facing up to the details outlined above, we can at least articulate a consistent theology of nature. Whewell suggests that this is all that we can hope to do, and that the truth of the gospel must be fought on other grounds. Though men may not be brought to faith by teleological arguments, they may at least not be honestly held back from belief by our theology of nature. So, for the sake of believers and honest doubters, the problems with the theology of nature outlined in this account must be seriously tackled.

Jonathan R. Topham is a Research Student in the History of Science at Lancaster University, U.K.

This article is a revised version of a paper given at the Christians in Science Conference October 1988 in London.

17. Op. cit. (note 15). p. 261 (Chapter LVI).