

CHAPTER 13 IMPOSSIBLE EVENTS

From: Denis R. Alexander, *Rebuilding the Matrix – Science and Faith in the 21st Century* [Oxford: Lion, 2001].

‘A miracle is a violation of the laws of nature; and as a firm and unalterable experience has established these laws, the proof against a miracle, from the very nature of the fact, is as entire as any argument from experience can possibly be imagined’.

David Hume, *Enquiry Concerning Human Understanding*, 1748.

'Miracles are things which never happen; only credulous people believe they have seen them'.

J.E.Renan , *Life of Jesus* (1863)

‘When such a thing happens, it appears to us as an event contrary to nature. But with God it is not so; for him ‘nature’ is what he does’.

Augustine on miracles, *Literal Commentary on Genesis*, (c. 391)

‘There is nothing that God hath established in a constant course of nature, and which is therefore is done every day, but would seeme a Miracle and exercise our admiration, if it were done but once; Nay, the ordinary things in Nature, would be greater miracles than the extraordinary, which we admire most, if they were done but once....and onely the daily doing takes off the admiration’.

John Donne, Dean of St. Paul’s Cathedral, London, in a sermon given on March 25, 1627.

‘I have witnessed many miracles during my career’

James Watson, 1990

In the spirit of David Hume, miracles are viewed by many scientists as things that simply do not happen. The topic is tainted with fake faith healers, weird claims that are never substantiated, bleeding statues of the Virgin, Hindu gods drinking milk and perpetual images of the incredulous crowd swayed by the religious sentiment of the moment. Altogether it is not a pretty sight. Since modernism dictates that science provides the ultimate criteria of what counts as

knowledge, and since miracles cannot lie within the remit of scientific knowledge, therefore miracles do not happen.

In contrast, the post-modernist perspective accommodates miracles comfortably as valid expressions of groups or individuals within certain cultures undergoing particular experiences in particular historical contexts. The interpretation of their experience as a miracle may be entirely appropriate for their context, and the question which the scientist insists on asking - whether the purported event actually occurred - is deemed if not irrelevant, at least impossible to ever know.

When some years ago the Anglican Church appointed a Bishop of Durham who, according to newspaper reports, described the story of Christ's bodily resurrection as "a conjuring trick with bones", the appointment naturally led to some debate in both the national and scientific press. Since many of the issues aired in that debate will be re-visited in this chapter, it is of interest to quote from a letter in the Times, written at the time by six Fellows of the Royal Society and eight university professors of science, and then to read the vigorous rebuttal written by the then Editor of Nature shortly afterwards. The letter to the Times reads as follows:

"In view of the recent discussions about the views of Bishops on miracles we wish to make the following comments. It is not logically valid to use science as an argument against miracles. To believe that miracles cannot happen is as much an act of faith as to believe that they can happen. We gladly accept the Virgin Birth, the Gospel miracles, and the Resurrection of Christ as historical events. We know that we are representative of many other scientists who are also Christians standing in the historical tradition of the churches.

Miracles are unprecedented events. Whatever the current fashions in philosophy or the revelations of opinion polls may suggest it is important to affirm that science (based as it is upon the observation of precedents) can have nothing to say on the subject. Its 'laws' are only generalisations of our experience. Faith rests on other grounds.¹

Six days later this letter was confronted by the Nature Editorial, written under the nearest that this leading scientific journal ever comes to a banner head-line, which contained a stinging refutation, of which the second section is reproduced below:

MIRACLES DO NOT HAPPEN

A group has invited trouble by claiming that science has nothing to say about miracles.

.....Nobody can sensibly complain that scientists of various kinds are often religious people of one persuasion or another, or quarrel with the conclusion of Berry et al. that the "laws" of science are "only generalizations of our experience" and that "faith rests on other grounds". But it is a travesty of something to assert that science has "nothing to say" about miracles.

Take an uncontentious miracle, such as the turning of water into wine. This is said to have happened at a wedding feast, when the supply of wine was unexpectedly exhausted. The only published account has it that jars of drinking water were found to have been transformed into wine

in the socially embarrassing circumstances that had arisen. The account is now firmly a part of the Christian legend, but that is not the same as saying it is the account of a phenomenon. Obvious alternative explanations abound. As scientists, the signatories would not have given a favourable referee's opinion of such an account for a scientific journal. And far from science having "nothing to say" about miracles, the truth is quite the opposite. Miracles, which are inexplicable and irreproducible phenomena, do not occur - a definition by exclusion of the concept.

Ordinarily, the point would not be worth making. The trouble with the publication from Berry et al. is that it provides a licence not merely for religious belief (which, on other grounds, is unexceptionable) but for mischievous reports of all things paranormal, from ghosts to flying saucers.²

This Editorial set in motion a debate on miracles which meandered on in the correspondence columns of *Nature* for many months afterwards, so providing a rich vein of argument and counter-argument on the subject.

What this exchange between an assortment of science professors and the then Editor of *Nature* at least minimally establishes is that there is certainly no monolithic view on miracles expressed by the scientific community as a whole, although it would probably be fair to say that the opening paragraph of this chapter, together with the *Nature* Editorial, express something not far from the views of the majority. This chapter will, first, assess the arguments of Hume on miracles and then propose an understanding of miracles which is different from both Hume and *Nature's* Editorial, but compatible with both science and a theistic understanding of the natural order. Whether and under what circumstances a miracle can ever be belief-worthy will then be assessed, and then finally the question of contemporary claims for the miraculous will be considered. The conclusion of this chapter is that there are indeed concepts of the miraculous which are hostile to science, but also that there is a view on miracles which can sit comfortably with science and which can even be nurtured by science.

Hume's Arguments on Miracles

Discussions of miracles have often been labelled 'foot-notes on Hume', and no consideration of the topic would be complete without an assessment of his influential arguments. The aim of this section is not to provide an exhaustive treatment of Hume, an exercise carried out many times by others³, but rather to summarise the pith of Hume's arguments so that they can be assessed in light of contemporary views of scientific and religious knowledge.

David Hume (1711-1776) was a Scottish philosopher and historian who became best known for his 'attempts to introduce the experimental method of reasoning into moral subjects', the sub-title of one of his best known works. Hume was a dominant influence on empiricist philosophers of the twentieth century. Hume's influential essay "Of Miracles" is a mere twenty pages tucked away in his *Enquiry Concerning Human Understanding* (1748)⁴. It is written against a background of Deistic arguments which had been thoroughly aired in the decades before 1748, and in fact there is little that is completely novel in Hume's essay⁵. Its long-term impact seems to stem more from the fame which Hume eventually achieved, the brevity of the essay, and the way in which it

summarised so succinctly arguments which had been circulating more loquaciously in the writings of others.

To understand the backlash expressed in some of the Deistic writings against miracles, it should be remembered that many of the Christian natural philosophers who were active in the emergence of modern science in the 17th century also promoted a strongly evidentialist role for the Biblical miracles. Just as scientific theories should be supported by empirical data, it was maintained, so the veracity of the Biblical accounts were supported by appeals to their descriptions of miracles. Thomas Sprat, secretary of the Royal Society and its first historian, even referred in 1667 to miracles as God's 'Divine Experiments' which he used to assert the Biblical truths without which 'no age nor place had been obliged to believe his message'⁶. This notion that miracles provided powerful evidence in support of the truth of Christianity was commonplace in the late 17th century, and it was against such ideas that the Deists reacted. Many of them, including to some extent Hume in his essay "On Miracles", were not so much concerned to attack miracles *per se* as they were to demonstrate that miracles could not be used as arguments for the historical claims of Christianity.

Hume's essay is separated into two parts. The first part summarises his *a priori* arguments for the impossibility of miracles, referring to those arguments which, Hume thought, ruled miracles out of court as a matter of principle. Hume's opening gambit is to underline the point that experience "is our only guide in reasoning concerning matters of fact". However, experience is not an infallible guide as nature is not always predictable and neither do we know all the possible range of natural causes. Therefore 'A wise man... proportions his belief to the evidence'. The observer should balance up the type of evidence which is available to him and establish a kind of certainty-uncertainty scale in which beliefs will vary in their position on the scale depending on the available data. In presenting this argument, Hume also reiterated his notorious critique of cause-effect relationships, maintaining that the connection between causes and effects is not something which is strictly observable, but rather causal connection is something that "we feel in the mind" as the product of the "imagination" due to the "constant and regular conjunction" of causes and effects. Fortunately scientists have always cheerfully ignored this particular Humean argument, since cause-effect relationships are precisely what they spend their time investigating.

Nevertheless the fact of our *experience* of the "constant and regular conjunction" between events (even though, according to Hume, we cannot actually see causes in themselves but only the succession of events) plays a key role in Hume's argument as to how testimony should be evaluated. All evidence based on testimony is founded on past experience and we will tend to believe that testimony to the degree that it accords with our own previous experience of events, or the extent to which we can make an analogy between the alleged event and our own experience:

The reason why we place any credit in witnesses and historians, is not derived from any connexion, which we perceive *a priori*, between testimony and reality, but because we are accustomed to find a conformity between them⁷.

Things are therefore much more probable when we have observed them to happen frequently in conjunction. Hume therefore goes on to propose that:

A miracle is a violation of the laws of nature; and as a firm and unalterable experience has established these laws, the proof against a miracle, from the very nature of the fact, is as entire as any argument from experience can possibly be imagined⁸.

A 'law of nature' for Hume was something in which our own experience had established a regularity of concurrence between events to such a high degree that not a single occasion had ever been observed when this concurrence was lacking, so giving rise to this high level of certainty based on "firm and unalterable experience". Given such a high level of certainty, Hume then argues that no level of testimony would in practice be sufficient to persuade him that a miracle could in fact happen, since the probability that the testimony of the event is mistaken will always be so much higher than the probability that a 'law of nature' has been violated.

So Part 1 of Hume's essay intends to establish that in principle no testimony under any circumstances would be sufficient to establish the veracity of any miraculous event. Natural laws are built on uniformity of experience which, for Hume, is what makes something in to a "proof". Miracles are alleged violations of natural laws. Therefore the "proof" of natural laws always outweighs the "proof" of the testimony relating to any particular alleged miracle. The wise person should always choose to believe what has the greater weight of evidence. Therefore miracles can never be believed by a wise person.

Part 2 of Hume's Essay is dedicated to *a posteriori* arguments, those that depend on assessment of evidence after it has already been presented. The arguments that Hume collects in Part 2 would have been familiar to anyone of that era who had followed the Deistic debate and there is no hint of novelty in this section of Hume's Essay. Hume presents four arguments:

First, witnesses to alleged miracles are all incompetent, or suffering from delusions, or are not beyond suspicion in some other way, so we cannot really trust them.

Second, people love gossip and so there is an innate human tendency to pass on stories which become exaggerated in the telling.

Third, miracles 'are observed chiefly to abound among ignorant and barbarous nations' and were not often observed amongst educated people, so rendering them intrinsically unlikely.

Fourth, rival religions claim miracles which oppose each other and so they in effect cancel each other out.

Hume then provides a number of historical or contemporary examples of miracles, including the stories, well-known at the time, of the alleged miracles of healing connected with the tomb of the Francois de Paris in France. As Hume

freely admits, the evidence for such healings having occurred was really rather strong, so his conclusions on the matter are therefore quite informative:

Where shall we find such a number of circumstances, agreeing to the corroboration of one fact? And what have we to oppose to such a cloud of witnesses, but the absolute impossibility or miraculous nature of the events, which they relate? And this surely, in the eyes of all reasonable people, will alone be regarded as a sufficient refutation⁹.

In other words, since miracles cannot happen, even though the witnesses are both vocal and numerous, nevertheless their combined testimony cannot possibly accumulate to provide sufficient weight to believe that miracles have occurred¹⁰.

A Critique of Hume

It should be at once admitted that Hume made some very reasonable points, particularly in his discussion of miracles in Part 2 of his essay. The deistic critique of contemporary accounts of miracles was in many cases as valid in the early 18th century as it is centuries later. Alleged contemporary miracles do often seem to be surrounded by an atmosphere of hysteria in which witnesses appear gullible or unduly influenced by the psychological influences of a crowd. There is also no doubt that stories can easily become exaggerated upon being retold, not least via a media machine which knows that the unusual or the quirky sells well in mass markets. The value of a scientific training is that it can instil an innate and healthy scepticism which is not easily fooled by the latest claim to some extraordinary event having occurred. The rise of post-modernism with its New Age expressions in contemporary culture has created an atmosphere in which some people will apparently believe almost anything. A scientific education can act as a valuable corrective to this blurring between fact and fiction.

Some other points made by Hume in Part 2 also have some validity. Competing miraculous claims made by different religions can be beamed around the world within hours. But the idea that reports of miracles are restricted to the uneducated or to people living outside western cultures is certainly incorrect. Beliefs in alleged contemporary miracles flourish in the midst of secularised westernised societies. The expectation, so prevalent a century ago, that such ideas would die out with the spread of education, has not materialised.

Nevertheless all the points which Hume summarises in Part 2 of his essay are relatively trivial compared to the central claim of Part 1, echoed so vigorously by the Nature Editorial 250 years later, that 'Miracles do not happen'. Can we be that sure?

Can the laws of nature be violated?

The term "law of nature" was not used systematically in its modern sense until the early 18th century and was therefore a recent term in the era in which Hume developed his arguments. As surveyed in Chapter 4, there is compelling evidence to support the idea that the Christian belief in a law-giving God nurtured the emergence of the modern scientific movement. God was the guarantor of the

reproducible behaviour of matter in defined circumstances, and it was this that made science possible. The notion of “laws of nature” had, in its earliest usage, theological overtones of God the law-giver. These laws were “out there” in the reality demonstrated by the properties of the physical world, waiting to be discovered by the investigator¹¹.

Interestingly, perhaps due to his repudiation of its theological basis, Hume’s concept of natural law was not typical of his time, since he believed that “laws” reflect the ordering process of the human mind rather than any intrinsic properties of matter *per se*. Such a view was entirely consistent with Hume’s argument that the connections between events which regularly occur are something that “we feel in the mind” as the product of the “imagination” due to the “constant and regular conjunction” of causes and effects. So as the philosopher Antony Flew has pointed out, Hume was in a particularly weak position to argue that miracles are impossible because they violate the laws of nature, since for Hume laws implied no necessity. A view similar to that of Hume was put forward much later by Ernst Mach who maintained that the “laws of nature” are nothing more than “concise abridged descriptions” of reality. “This is really all that natural laws are”, claimed Mach, useful summaries of empirical data which reflect the propensities of the human mind to catalogue phenomena in a tidy manner¹².

Yet scientists have generally ignored the views of both Hume and Mach, and in the realist tradition have continued to insist that the laws described by science are not mere epiphenomena of tidy human minds, but reflect properties which are intrinsic to the physical properties of matter. Nearly all scientists have therefore, knowingly or unknowingly, aligned themselves with the theologically understood tradition of “scientific laws” as being rooted in the properties of the world that they investigate. Even though they may no longer believe in a law-giving God, they are inheritors of a tradition established by theistic natural philosophers. Stephen Hawking is well within this tradition when he points out that “It would be completely consistent with all we know to say that there was a Being who is responsible for the laws of physics”¹³.

Paul Davies has also drawn attention to the way in which the understanding that contemporary scientists have of “the laws of nature” still has some remarkable resonances with the attributes of God as described by Christians¹⁴. Laws are, first, *universal* and apply “everywhere in the universe and at all epochs of human history”. Second, they are *absolute*; whatever changes may occur in the observers, laws are unchanging. Third, laws are *eternal* in the sense that they are rooted in the mathematical structure of the universe, and finally they are *omnipotent* in the way that all natural phenomena lie within their scope. At times Davies expounds such an exalted view of “the laws of nature” that it seems that it is the laws themselves which have the quality of the deity, whereas theists would see the laws having such qualities because they reflect the consistent creative actions of God the law-giver.

It should also be emphasised that our contemporary understanding of the term “laws of nature” is considerably different than it was in the early 18th

century. As already discussed in Chapter 8, a 'critical realist' view of 'scientific laws' sees them not as rules which the natural world obeys, like traffic laws, nor as entities waiting to be discovered, but as constructs of the scientific community expressing the pith of a large number of observations and experimental results which can be expressed as a limited number of broad generalisations. Such 'laws' can never be divorced from the theoretical presuppositions which underlie them, nor from the experimental contexts in which they have been developed. One day they will be modified to better approximations by new observations.

In contrast the science of Hume's time still remained strongly influenced by the Baconian notion that if only a sufficiently large number of observations could be made which were largely in accordance with each other, then one could proceed to infer some broad generalisation or 'law' based on such an accumulation of facts. Although such an inductive process is by no means dead as a valid part of the scientific process, it has nevertheless been radically modified by the realisation that a single piece of Popperian opposing evidence can call a scientific 'law' into question. However many white swans you observe, the theory that "all swans are white" can readily be undermined by the observation of a single black swan. Laws are descriptive not prescriptive.

Hume's idea that a large accumulation of uniform human experience adds up to such a quantitative weight that no counter-evidence can possibly overthrow it, is therefore not a very useful one. If we believed his argument then we would never believe that we had been dealt a perfect bridge hand, since the odds against it are 1,635,013,559,600 to 1 (although this has in fact happened). The mere accumulation of further instances that things generally happen in the same way is no guarantee that they will not happen differently in the future under different circumstances and in a different context. One convincing well-attested counter-example can bring crashing to the ground a scientific theory built, until that moment, on an impressive edifice of 'uniform human experience'. Hume failed to realise that the "wise and intelligent person" bases his or her beliefs on evidence rather than probability. Evidence is weighed not added. Evidence for repeatable phenomena is not necessarily greater than for events which have happened only once. This is why the cutting edge of so much contemporary science is characterised by the investigation of pieces of data which do not fit comfortably within currently held paradigms. "Uniform human experience" is scientifically boring - the exceptions are much more interesting.

To preserve the pith of the older concept of "law of nature", but at the same time take on board the insights of the more recent sociology and philosophy of science, some philosophers have attempted to make a distinction between "laws of nature" and "law-statements"¹⁵. "Laws of nature" refer to the unchanging properties of the natural world, with an understanding of law such as that expounded by Davies, whereas "law-statements" are the attempts made by the scientific community to describe those laws accurately. The former are unchanging, whereas the latter change as science advances. Had Hume placed his "violation of the laws of nature" argument within the framework of the former

understanding, with its prescriptive understanding of Laws, then it might have had more punch. The concept of “violation” only makes sense when a law is prescriptive, whereas the notion vaporises when laws are merely descriptive. But at this stage it is difficult to take the discussion further without a prior examination of whether Hume’s definition of a miracle, which we have accepted for the purpose of this initial critique, is in any case valid.

What is a miracle?

Hume has frequently been taken to task for missing out certain critical elements in his definition of miracles. Certainly he uses the term in a way which ignores aspects of its meaning which were well known and accepted in early 18th century society. Hume’s usage of the term was clearly self-serving to his argument, but also so successful that it is not uncommon to find even today books defending Christian miracles which, ironically, utilise Hume’s definition.

In contemporary usage the term ‘miracle’ has splintered into a myriad different meanings in common speech. Newspapers commonly use the term to refer to very rare events. A head-line in the paper this week speaks of ‘Miracle town’s fourth jackpot’, referring to the fact that four winners from the town of Grimsby in England have recently won the national lottery. People who are saved from death in remarkable circumstances often refer to their experience as ‘miraculous’. Richard Dawkins opines that “...events that we call miracles are not supernatural, but are part of the spectrum of more-or-less improbable natural events. A miracle, in other words, if it occurs at all, is a tremendous stroke of luck. Events don’t fall neatly into natural events versus miracles”¹⁶.

Curiously, given Dawkins’ antipathy for religion, the last sentence in this quote brings us closer to an understanding of the miraculous as espoused by the Bible. Although the Biblical understanding of the term may be less widespread now than in Hume’s day, it is nevertheless the one which, I think, can most readily be reconciled with contemporary views of scientific knowledge.

To unpack this understanding, an alternative definition of a miracle may be in order: “A miracle is an unusual or extraordinary event brought about by a god within a significant historical-religious context”. Such a definition is much closer to the understanding of the term ‘miracle’ as it has been used down the centuries, and is important both in what it excludes as well as what it includes. First, it excludes Hume’s idea that a miracle is defined as the ‘violation of a law’. Such an idea is certainly alien to the Judeo-Christian tradition which underlies the Biblical writings. There is, of course, no concept of scientific law *per se* in the Bible. Nevertheless ancient observers were perfectly aware that virgins do not give birth and that dead people do not rise from the dead. They were not stupid. The Bible’s understanding of creation, as already noted in Chapter 10, is of a God who not only generates order out of disorder ‘in the beginning’ but also actively sustains every aspect of that created order at every moment. In this view, there is nothing which scientists can describe which is not part of the nexus of the secondary causes which comprise God’s actions. The Bible therefore makes little

attempt to distinguish between the 'natural' and the 'supernatural' for the simple reason that the terms are alien to Biblical thought - in fact the word 'supernatural' is not even mentioned in the Bible. The idea of 'supernature' in contrast to 'nature' is a more recent invention. As Augustine expressed it: "Nature is what God does". This does not mean that the Biblical writers were not convinced that at various times and places unusual events occurred, only that they perceived all events without exception to be ultimately caused by God for particular purposes.

Imagine, for example that a well-known author has written 49 novels featuring the same central hero and with the same basic type of plot in each one. Each novel is distinctive enough so that the interest of the reader is maintained. Indeed, it is the familiarity with the characters and backcloth of the novel that provides half the fun - the challenge of the author is to take the familiar ingredients, but then mix them in different ways to make a fresh and intriguing story. Finally the author comes to write novel number 50. But this one is different. The same hero and ingredients are present, but they are woven into such a different kind of story that it stands out from all the others - perhaps it is the novel in which the author has finally decided to kill off the series by causing the hero to die under tragic circumstances. By definition it is novel 50 which is unique, and this is the one that the author's readership of millions remembers best even though they might have difficulty in recalling the difference in plot between novel number 10 and number 33. Novel number 50 is not distinctive because the author has changed, but because the purposes of the author for novel number 50 were different from all the rest.

An intriguing example of this point is found in the Biblical account of the crossing of the Reed Sea ('Red Sea' is a possible alternative translation) by the Israelites¹⁷. Moses stretches out his hand over the sea "and all that night the Lord drove the sea back with a strong east wind and turned it into dry land". There is little doubt that the Israelites viewed their consequent rescue from the pursuing Egyptians in miraculous terms. But the text is explicit in providing what we might call a 'natural' explanation for the rescue. Our images of events at this point may become over-influenced by old Hollywood blockbusters or by somewhat newer Hollywood animations. A geographically more astute picture is provided by Prof. Arie Issar of the Ben-Gurion University of the Negev who has carried out extensive research on the climatology and topology of this region¹⁸. Coming out of Egypt the Israelites meet the "Sea of Reeds", the correct translation of the Masoretic Hebrew term *Yam Suph* (Yam = sea or coast; Suph = reeds: how this term began to be translated as 'Red Sea' remains obscure). This means that reeds grew along its shores, most likely fed by a source of fresh or brackish but not sea water, which in turn was fed by a rainfall estimated at 100 mm per year compared to the present annual rainfall of about 50 mm. "Sea" in ancient Hebrew means any large body of water. This particular "Sea" likely consisted of the huge swamps and lakes, locally called *sabkhas*, which at that time spread along the region through which the Suez Canal now passes. The swamps were surrounded by reeds. Issar suggests that as the people escaped

through the labyrinth of *sabkhas*, the war carriages were coming after them and at the same time the Khamseen, a heavy dust storm blown by a strong east wind, “made the sea dry land”, most probably by means of a hardened crust that formed a layer of gypsum. This would have been sufficient to allow the fleeing Israelis to find a way through, “with a wall of water on their right and on their left”, whereas the heavy chariots of the Egyptians went straight down through the gypsum crust and were lost in the swamps. The Hebrew word “wall” may be used as a metaphor for protection, and so refers not to waters heaped up on either side (a la Hollywood) but to the protecting effects of the surrounding *sabkhas*. Issar points out the hot dry Khamseen from the East in this region is frequently followed by a low pressure heavy rainstorm from the north-west which floods the area. Stuck in the *sabkhas* with their chariots deep in mud, the narrative tells us that “at daybreak the sea went back to its place”.

Since the Israelites knew the climate well, they were familiar with dust storms in general and no doubt with the Khamseen in particular. Nevertheless they had no hesitation in assigning their deliverance to God’s direct action, albeit mediated by the ‘natural’ processes of climatic changes¹⁹. The narrative recounting the various plagues which the Egyptians experienced prior to the flight of the Israelites from Egypt also describes in some detail the succession of natural disasters which fell upon them - plagues of frogs, flies, locusts, extreme weather conditions, and so forth, but equally they saw these events as God’s ‘miraculous signs’²⁰.

In providing such examples (and there are many more) it should not be thought that all the Biblical accounts of miracles have potential scientific explanations. Many do not. Everyone knows that water does not suddenly change into wine, nor thoroughly dead people return to life again, either now or in the first century²¹. The emergence of modern science has not made any difference to the way in which such claimed events are perceived. In fact a first-century rural Palestinian community, much more used to handling dead bodies than are most people in contemporary western societies, would no doubt have been amused by the idea of rich 21st century cryo-frozen Californians waiting for the day when their corpses could be revived. The idea of corpse revival belongs more to the twenty-first century than it does to the first.

The Bible is by no means crammed full of miraculous accounts as people sometimes think who have not read it. The miracle accounts are largely restricted to the events surrounding the Exodus of the people of Israel from Egypt, with a mere scattering of other reported miracles through the Old Testament, and then to those associated with the life of Jesus and the birth of the early church in the New Testament. It is possible to place the miracles on a spectrum, stretching at one end from those for which the Bible itself provides causal explanations (as in the crossing of the Reed Sea), through to those at the other end of the spectrum for which no scientific explanation can be imagined, even in principle (such as the resurrection of Jesus). Along the spectrum are located other claimed miracles which might, in principle, be amenable to scientific descriptions, but for which we

simply do not have enough information to be sure. For example, some miracles of healing might be open to psychosomatic interpretation. Even the Virgin Birth of Jesus has received attention as an event that might, in principle, be amenable to a scientific explanation, due to recent advances and observations in our understanding of potential ways in which asexual reproduction might occur in humans²². The Virgin Birth debate provides a good example of the way in which a claimed miracle can move, in a single generation, from a status of “absolutely no scientific explanation imaginable, even in principle” to the rather different status of “a scientific explanation is at least imaginable, even though we can never know for sure due to the non-reproducibility of the event”.

The purpose in citing such examples is to underline the fact that Biblical thought makes little distinction between remarkable events which, as we would say now, have scientific explanations and those, like water turning to wine, which defy any current scientific explanation. All are seen as reflecting the will and actions of God for particular people at particular times in particular contexts. What mainly draws attention to their status as miracles is not that they are necessarily events which have never happened before, or which may never happen again, but that they are unusual signs of God’s actions in particular circumstances. Their designation as a miracle is not based on their law-defying properties, but on the way in which they stand out as focussed and particular instances of God’s will expressed in a way made unusual by its timing or by its rareness (or occasionally uniqueness) as a phenomenon.

This understanding of the miraculous is illustrated very clearly by the Biblical words and terms which the writers of the Hebrew and Greek texts have chosen to bring out the various nuances of ‘wonders’ or the ‘miraculous’. Three words in particular are used most frequently. The Greek word *terata* and its Hebrew equivalent *mopheth.*, translated as ‘wonders’, are frequently used to draw attention to events which are so remarkable that they are remembered²³. The term focuses more on the amazement produced in the witnesses of the event rather than on the specific purpose of the event. The Greek word *dunameis*, from which we derive our word ‘dynamite’, is translated as ‘acts of power’ or ‘mighty works’ and emphasises the Biblical conception of miracles as the result of the operation of the power (*dunamis*) of God, who is perceived to be the source of all power. Whereas the word *terata* points to the impact the miracle made on the observer, *dunameis* points to its cause. The third word which is most critical of all in understanding how the Bible views miracles is the Greek word *semeion*, or ‘sign’. This is the word which is particularly used in John’s Gospel when describing the miracles of Jesus. Miracles are only meaningful in a particular context as they point to something beyond the event itself. A *semeion* emphasises the ethical end and purpose of a miracle. The intention of a *semeion* is to reveal aspects of God’s character - especially his power and love. As Monden comments: “Miracles are set apart from natural happenings not by the fact that they demonstrate a manifestation of power, but rather because their unusual nature makes them better fitted to be signs”²⁴.

The words *terata*, *dunameis* and *semeia* (plural, 'signs') are not the only words used by the New Testament to refer to the miraculous, but they are the most commonly used, and are frequently mentioned together in the same breath²⁵. Remarkably the word *terata* ('wonders') is always combined with one or the other, or both together, emphasising the reluctance of the Biblical text to dwell on the merely marvellous character of the miracles. In the Hebrew text of the Old Testament equivalent words are brought together to express the same sets of meanings, so that as Moses looks back to the exodus of the Israelites from Egypt, characterised by the plagues and crossing of the Reed Sea as discussed above, he reminds his people that "With your own eyes you saw those great trials, those miraculous signs and great wonders"²⁶. One of the miracle narratives in the life of Jesus provides a good example of the way in which the various threads of the New Testament's understanding of the miraculous are woven together in a single tapestry. A paralytic man is healed by Jesus (the narrative is in Mark 2.1-12). Everyone was amazed by the miracle (v. 12) - so the sense of *terata* is brought out, although the word itself not used. The miracle demonstrates God's power (v. 12), for at Christ's command the paralytic "got up, took his mat and walked out in full view of them all", but it was also a *semeion*, for the whole purpose of the miracle was to demonstrate that "the Son of Man has authority on earth to forgive sins...." (v. 10).

Therefore in the Bible it is the *context* and *purpose* of the miracle which draws most attention - the "significant historical-religious context" - an understanding in stark contrast to Hume's concept of miracles as isolated anomalies which violate the laws of nature. Miracles are made plausible by their coherence, by the way they fit into an overall picture or narrative. Of course such coherence is not sufficient alone to establish their veracity, but it is certainly necessary. In contrast, scientists who discover isolated anomalies in their data would do well to check their instruments for accuracy, or else to pursue the anomalies by further experimentation until they can be incorporated satisfactorily into a broader set of generalisations. Any other strategy is mere intellectual laziness. The PhD student who announces that his latest experiment defies the laws of physics and is therefore a miracle will not be treated sympathetically, although if the anomaly is reproducible there is certainly room for excitement, as it is precisely via such anomalies that scientific advances are likely to be made.

A key difference in emphasis between science and history is that science often, though not always, investigates phenomena which can be reproduced, providing the experimental conditions are carefully controlled. The 'not always' category includes sciences such as geology and evolutionary biology which construct historical sequences of events based on a broad range of data. Historical research, in contrast, analyses events which are unique in their context, their rationale and their outcomes. Military battles may have certain common themes running through all of them, nevertheless each one is unique in its historical context. Biblical claims to miracles draws our attention to this same vital ingredient of historical context. East winds may blow all night not that

infrequently, even perhaps to the extent of affecting one's ability to traverse the Reed Sea, but an East wind which rescues you from imminent death carried out by an irate pursuing army has the kind of particularity which justifies its description as a 'sign and wonder', especially when it comes just after fervent prayer for deliverance.

The importance of the "significant historical-religious context" for our definition of a miracle can be further illustrated by an imaginary contemporary account of a miracle²⁷. Suppose that a woman called Mrs B. has suffered from severe rheumatoid arthritis for a period of many years during which time she has been treated by five different specialists, but without success. The progress of the disease appears to be medically intractable and she is permanently in a wheelchair. The specialists have all kept impeccable medical records. Mrs B is unable to walk properly, make a fist or even grasp her husband's hand. Her pain is often unbearable. Mrs B then attends a religious gathering at which she is prayed for by its leader using the name of the god of that religion before a congregation of more than 500 people. Moments after the leader has prayed for her healing, Mrs B is in fact healed and walks from her wheel-chair. Her pain has gone, she can make a fist, grasp her husband's hand and walk with ease. The next day Mrs B is examined by her five specialists who find to their amazement that the inflammation in her joints has suddenly subsided and that the degradation of her joint cartilage has been reversed. The panel of five continue to check Mrs B's health annually over the next ten years and there is no recurrence of the arthritis, so Mrs B's condition represents a cure and not merely a remission.

The reason for providing such an example is not, at present, to discuss whether such healings do in fact ever occur (see further on this below), but to draw attention to the importance of religious context and timing in the interpretation of such claimed miraculous events. Claimed miracles are not weird anomalies randomly scattered throughout the experience of a population, or through natural phenomena, but are restricted to particular contexts and happen for particular historical reasons.

It is for this reason that the Nature Editorial, cited above, rather misses the mark when it expresses concern that if people - especially scientists - believe in miracles, then this will promote the acceptance of all kinds of weird and wonderful things, such as belief in "all things paranormal, from ghosts to flying saucers". First, the Bible's understanding of miracles has no need for the paranormal since, as we have noted, all events without exception, from the very mundane to the very extraordinary, are perceived as being due to the continued will and actions of God. There is nothing paranormal about timely east winds blowing at the right moment.

Second, from a historical perspective, Nature's Editorial claim has already been tested by means of the beliefs of a previous generation and found not to be the case. The natural philosophers of 17th century Europe were nearly all Christians who believed in a God who occasionally carried out miracles. Some

may have believed that such miracles were confined to the Biblical era, whereas others may have believed that God continued to carry out miracles very occasionally. But the general consensus of belief was in a miracle-working God. At the same time, however, it was precisely during this era that the concept of “natural laws” began to emerge as reflections of the working of a law-giving God. Far from belief in a miracle-working God stimulating belief in a plethora of miracles, the early natural philosophers were generally quite opposed to such a move, partly no doubt influenced by the opposition of the Reformation thinkers against the tendency of the mediaeval Church to proliferate the ‘miracles’ associated with religious relics. The emphasis of the religious writings of the early natural philosophers is much more on God as law-provider, much less on the possibility of contemporary miracles, although the Biblical miracles were often cited as evidence for the truth of Christianity, the precise point against which Hume was to react so strongly later on.

The third reason why the Nature Editorial misses the mark is because it invokes a Humean concept of miracles which ignores historical and religious context. The world of ghost-busters is about as far from the highly theological framework of the Biblical miracles as you can get. Fourthly, I know many scientists who believe that the Biblical miracles were real historical events, but I cannot think of any who display the kind of gullible belief in flying saucers and the paranormal to which the Editorial alludes. Far from it, they tend to be a rather hard-nosed and sceptical bunch of individuals who have little time for weird and wonderful phenomena. The increase of belief in such things has much more to do with the popularity of New Age mysticism.

Science and miracles.

The sceptic may wish to object at this point that we have redefined the miraculous in such a way as to make it slightly more acceptable than it was within a Humean definition, but nonetheless the core problem remains. Although some of the Biblical miracles refer, no doubt, to events for which the Biblical narrative itself provides an explanation, in many cases there is no obvious scientific explanation, even in principle. Water does not change into wine, nor do dead people return from the grave. As the Nature Editorial suggests: “As scientists, the signatories would not have given a favourable referee’s opinion of such an account for a scientific journal. And far from science having “nothing to say” about miracles, the truth is quite the opposite. Miracles, which are inexplicable and irreproducible phenomena, do not occur - a definition by exclusion of the concept”.

Can claimed miracles be investigated using scientific methods? It all depends on the type of claim being made. If a statue of the Virgin Mary is claimed to bleed regularly at lunch-time every Friday, then at least there is a reproducible phenomenon which can be investigated using scientific techniques: if the red liquid does not contain haemoglobin then it is not blood. If the statue of a Hindu god regularly oozes milk at the precise time of the god’s festival, then the

appropriate controls and tests can readily be carried out. If there is a claimed miraculous healing, as in the example provided above, then it can be fully investigated by a team of doctors, providing medical records pertaining to the period prior to the claimed healing are available.

Contemporary claims to the miraculous such as these are relatively easy to investigate. Science can contribute not only procedural approaches and techniques to examine such claims, but also a healthy dose of scepticism. But what about claims to miracles in the past? What, for example, about the New Testament accounts of the miraculous, in particular associated with the life of Jesus - claims concerning events that never normally occur, such as blind people suddenly receiving their sight, crippled people beginning to walk, Jesus commanding a storm to cease and it does so, Jesus rising from the dead, and so on. A common response has been to interpret such accounts within a purely symbolic or metaphorical framework. Turning water into wine then becomes a powerful metaphor for the way in which Jesus was inaugurating a new spiritual kingdom. The resurrection becomes a symbol of the way in which the spirit of Jesus lives on in the lives of his followers, just as the spirit of Shakespeare lives on through his writings. But it has to be admitted that this is a fudge. The Gospel narratives leave us in no doubt that those who witnessed these events believed them to have actually happened. As a matter of fact, it is claimed, the tomb was empty and, what is more, the grave-clothes which had been tightly wound round the body of Jesus during the embalming process were lying undisturbed in the empty tomb²⁸. The fact that in their context the miracles were presented by the Gospel writers as *semeion*, signs, does not imply that they were *only* signs. Remarkable events can take place and they can be signs as well. That is the stance of the Gospel writers.

It is difficult to see how science *per se* can be anything other than agnostic when considering such miraculous claims. Science is particularly good at investigating phenomena which are potentially reproducible and which can be investigated under controlled experimental conditions. Science is also quite able to build up a picture of historical chains of events to explain the present properties of the physical world, as in geology or evolutionary biology, since the present status of rocks and of animals provide the primary data from which the historical investigation can be launched. However, when the claim is of a unique and unusual historical event, then science has no investigatory tools to be useful in such circumstances, any more than science is of much use when investigating any other particular historical event which depends entirely on written eye-witness reports. The argument of the Nature Editorial that “the signatories would not have given a favourable referee’s opinion” of miraculous accounts submitted to a scientific journal is therefore irrelevant, for the simple reason that historical claims are not published in scientific journals, and for the best of reasons. Science and history are distinct disciplines with their own distinct criteria for what counts as scientific or historical knowledge, respectively.

Despite Hume, science is in no position to rule miraculous claims out of court. Science can propose generalisations of increasing sophistication which incorporate a very broad spectrum of types of different data, but scientists remain observers of what in fact happens, of what is in fact the case. Scientists are meant to be empiricists not dogmatists. It is difficult to avoid the conclusion when reading Hume's short but pithy essay that his *a priori* argument simply begs the question. For if "a miracle is a violation of the laws of nature" which have in turn been established by "unalterable experience" then clearly there can be, by prior definition, no experience that anyone could have which would change such a conclusion. It is not for nothing that Hume's *a priori* argument has often been accused of circularity²⁹. But in practice scientific endeavour shows no such signs of being a closed book in which we know ahead of time what we may or may not observe. What differing attitudes towards miraculous claims frequently reveal are not different beliefs about the scope and nature of scientific enquiry, but about the underlying metaphysical assumptions which are brought to the discussion. The atheist who believes that the universe is essentially a closed system in which all matter 'obeys' deterministic laws is unlikely to be very open to the possibility that the material world occasionally behaves in an unexpected way. As the Nature Editorial expresses the view so well: "Miracles, which are inexplicable and irreproducible phenomena, do not occur - a definition by exclusion of the concept". In contrast, the theist who believes that there is a creator God who is actively sustaining every aspect of the created order will not be surprised if God occasionally chooses to act in an unusual way in a particular historical context. This same theist will be hostile to the suggestion that God is profligate in bringing about such events, because it is the general consistency of God in creation which generates the possibility of the scientific enterprise itself and which thereby enables at least one type of miraculous event to be readily identified as such.

Ironically it is therefore the stance of the atheist which is likely to lead to a closed mind when it comes to the question of evidence for claimed miraculous events ("miracles do not occur by definition"). As Hume stated so clearly, even though the evidence in his own day for the alleged miracles of healing connected with the tomb of the Francois de Paris in France was extremely strong, nevertheless "the absolute impossibility...of the events" was counted as a sufficient refutation for their actual occurrence. In contrast the theist can remain both cautious and sceptical, but still afford to keep an open mind about such matters and examine the evidence on its own merits, not eliminate it by appeals to prior metaphysical presuppositions. There seems to be little doubt that in this instance it is the stance of the theist which best exemplifies the general attitude which one hopes characterises the scientific community as a whole, namely, an openness to the way the world actually is, rather than the attitude more typical of some forms of Greek rationalism which already knew the answer before the investigation had even begun. The comments of Burns are interesting in this context, when he observes that Humean thought was actually alien to the British empirical tradition, being much closer to continental philosophical scepticism:

“...Hume is much more to be regarded as the advocate in England of attitudes and approaches to philosophy which had been rejected by the leading empiricist scientists of the late seventeenth century than as the systematizer of the authentic latent tendencies of the English empiricist tradition”³⁰.

In making this point it is not of course being suggested that theists are possessors of some kind of magical neutrality which makes them uniquely able to distinguish wheat from chaff when it comes to assessing miraculous claims. No individual is devoid of assumptions nor of expectations during the process of investigation, be it historical or scientific. There is no presupposition-free highground from which anyone can pontificate. Scientists are only too aware of the assumptions that they bring to their assessments of scientific theories. Sometimes their prejudices blind them to ‘seeing’ data which are contradictory to their favourite hunch, whereas data which support their position is eagerly seized upon. Such insights should encourage an attitude of critical and open enquiry.

The way in which scientists assess the ‘Big Theories’ of science may also help to elucidate the process whereby Christian theists view the miracles of, for example, the New Testament. These would not normally be assessed in isolation, but be seen in their historical context as supporting, illustrating and expounding the life and ministry of Jesus as a whole. So even though the weight of evidence for any particular New Testament miracle might vary with respect to the evidence for another, the tendency of the theist would be to accept the miracles as a ‘package deal’: given that God is creator and that Jesus is portrayed as the Son of God, it is thereby not so surprising that the entry of God’s Son into the world is accompanied by remarkable events which demonstrate God’s control over the whole created order, illustrate his love and reveal his purposes for the world in general and for humankind in particular. All of these events are associated with *semeion*, or signs, which embed the miraculous accounts into the overall aims and purposes of Christ’s ministry. The miracles are as intrinsic to the New Testament account as natural selection is to Darwinian evolution. Rip them out and there is little of interest left of Jesus of Nazareth. That is why theists tend to accept the whole package of the New Testament account, or not at all, because it is the historical and theological account as a whole which makes sense to theists, just as the Big Theories of science are appealing because they incorporate satisfactorily so many different bits of data. As Corduan comments: “A crucial consideration is that beliefs about many matters of fact are embedded within larger worldviews, and evidence for miraculous events is evaluated in terms of broader conceptual schemes”³¹.

Non-theists sometimes express the concern that if miracles occur, such as the changing of water into wine, which run counter to all we know about the normal properties of matter, then disruptions would be introduced into the natural order which would render the scientific enterprise impossible due to our inability to know ‘what nature might do next’. In addressing this concern it is worth emphasising the rarity of the type of miracles which are being surveyed in this chapter. There has only ever been a single occasion when water was allegedly

turned into wine and there has been only a single claimed case of a resurrection from the dead when the person involved (Jesus in this case) did not die again. Other claimed miracles involving events which do not conform to the normal properties of matter are equally rare. Such rare events are simply not detected nor collected as part of the data-gathering exercise which plays such a key role in the establishment of the broad generalisations which describe the properties of matter which can be labelled as 'laws of nature'. The number expressing the ratio between the 'normal event' (water does not turn into wine) and the unusual event ('water turns into wine') is so enormously high that for all intents and purposes there is no need to worry about the unusual events having any impact on the construction of scientific theories.

Can we know that miracles have occurred?

If science *per se* cannot help us very much with our enquiry as to whether miracles have occurred, such as those described in the Bible, is there a different line of approach which might be more fruitful? Are we left with two sets of people talking past each other because their prior metaphysical commitments cause them to lean in two quite different directions? It is beyond the scope of this book to examine the historical status of the Biblical documents, or to delve with any depth into the important question of how sceptical (or not) we should be in our investigation of historical events. Nor do we have space to do justice to the moral and ethical criticisms that have been levelled against claimed miracles ("why doesn't God heal everybody, eliminate all suffering? etc").

In the present context two preliminary points may be made. First, the scientific enterprise does not encourage an ultra-sceptical attitude towards the investigation of historical claims. There is a sense in which all empirically based scientific literature represents a series of historical reports written by witnesses of what took place under particular circumstances and conditions. As mentioned in chapter 8, it was the perceived trustworthiness of the Gentlemen of the early modern scientific movement, such as Robert Boyle, which stimulated the progress of science, since these represented a category of people who were already recognised by society as reliable witnesses, and therefore likely to report the truth about the outcome of their experiments³². When Boyle wrote his *Sceptical Chymist* he invoked witnesses of unimpeachable reputation to testify to what they had seen. His experiments on mercury, published in 1675, were witnessed by Henry Oldenburg and by 'the noble and judicious' Lord Brouncker. The sceptic in the *Sceptical Chymist* plays the role of the examining magistrate³³. The alarm and despondency with which the contemporary scientific community responds to claims of scientific fraud, still thankfully rare, underlines just how deeply the community still depends on scientists telling the truth about their observations. The scientific enterprise therefore encourages the notion that people can and do make observations which they report accurately. It is such reports, published as papers in the scientific literature, that act as the basis and launching pad for further scientific progress. Scientists see no need to

practice a paranoiac form of suspicion in which people are thought to lie upon every possible occasion. In fact, no society could possibly survive for long based on such a supposition, let alone scientific practice. All societies operate on the assumption that most people tell the truth most of the time, and it is this assumption which also makes historical research feasible. The historian does not have to lapse into gullibility to maintain that it is safest to assume that someone is recounting the truth unless there are good historical grounds for thinking otherwise. Long ago Augustine made a similar point when he wrote:

I began to realise that I believed countless things which I had never seen or which had taken place when I was not there to see - so many events in the history of the world, so many facts about places and towns which I had never seen, and so much that I believed on the word of friends or doctors or various other people. Unless we took these things on trust, we should accomplish absolutely nothing in this life³⁴.

Interestingly there is a sizable group of contemporary historians mounting a rigorous attack against the post-modernist notion that historians cannot establish the veracity of historical events 'beyond all reasonable doubt', but can only reconstruct history in a post-modernist mould according to their own favourite form of discourse. For example, Richard Evans, Professor of Modern History at the University of Cambridge, comments that:

It is not true to say that historians are 'not too concerned about discrete facts'. On the contrary, whatever the criteria for the facts' selection, the vast majority of the historian's efforts are devoted to ascertaining them and establishing them as firmly as possible in the light of historical evidence...interpretations really can be tested and confirmed or falsified by an appeal to the evidence; and some of the time at least, it really is possible to prove that one side is right and the other is wrong³⁵.

The attitudes of the scientific community resonate much better with this stance than with the post-modernist idea that the central role of the historian is merely to create historical meanings.

A second preliminary point which is worth making is that it seems reasonable that the moderately sceptical inquirer will wish to have more weighty evidence for the historicity of claimed miracles before believing that they happened, than for events which are less out of the ordinary. It is expected that historians will utilise non-miraculous forms of explanation in their enquiries whenever possible for the simple reason that the vast majority of historical data require nothing different. It is the rarity and unusual nature of the claimed miraculous event which demands the greater weight of evidence.

Antony Flew has suggested that it is actually impossible to know that miracles have taken place historically³⁶. Flew's argument may be summarised by the following statements:

1. The believer in miracles investigates history in order to demonstrate the actuality of miracles.
2. Only if we assume that the regularities of the present were also true of the past can we hope to know anything historically.

3. In order to gain knowledge of the past, the critical historian must employ his present knowledge of what is possible/impossible, probable/improbable.
4. A miracle is a highly improbable, practically impossible, event.
5. Therefore, miracles cannot be established historically.

Points 1-3 are in principle non-controversial, although in his writings on point 3 Flew seems in danger of confusing the analogy between the present and the past as a *basis* for studying the past, with the *properties* of the past itself. This point has been illustrated by Geisler by drawing attention to the way in which the SETI (Search for Extra-Terrestrial Intelligence) programme has been established. The SETI programme is based on the assumption that a single message from space will reveal the existence of intelligent life elsewhere in the universe. "For even if the object of pursuit is the reception of only one message, nevertheless, the basis of knowing that it was produced by intelligence is the regular conjunction of intelligent beings with this kind of complex information. So, while knowledge of the past is based on analogies in the present, the object of this knowledge can be a singularity"³⁷.

Still in the context of point 3, it should also be pointed out that historical enquiry may establish that certain perfectly normal and "this-worldly" events are well supported by the evidence, and yet if the evidence taken as a whole is considered in its context, then the only satisfactory conclusion may be that a miracle has occurred, based on an inference to the best explanation. It is not miracles *per se* which are investigated by the historian, but rather the evidence which is used as a basis for the interpretation that a miracle has occurred. For example, the evidence for the bodily resurrection of Jesus involves no forms of evidence which are in principle disallowed by Flew's point 3, since the data under examination involves an empty tomb, grave-clothes lying in a heap, the recognition of the physical presence of a familiar person, and so forth, types of observation which are thoroughly familiar to the contemporary experience of the investigating historian. There is nothing particularly extraordinary about an empty tomb - it was in any case presumably empty before the body of Jesus was placed there. The type of evidence sifted by the historian in considering an alleged miracle is not therefore any different in principle from the type of evidence considered in any other historical enquiry.

The real problem with Flew's position, however, comes with his understanding of *why* a miracle is a "practically impossible" event as summarised in point 4. Flew maintains that when the evidence for miracles becomes so strong that we start to believe that the claimed event has actually occurred, then since miracles are impossible, it cannot be a miracle at all but must have had some natural explanation. Miracles are thus viewed by Flew as anomalies which are the result of unknown scientific laws, resulting in the argument that:

Our sole ground for characterising the reported occurrence as miraculous is at the same time a sufficient reason for calling it physically impossible. Contrariwise, if ever we became able to say that some account of the ostensibly miraculous was indeed veridical, we can say it only because we know that the occurrences reported were not miraculous at all³⁸.

But this is a Humean question-begging argument if ever there was one! Flew tries to exclude by definition what the whole discussion is in fact about - whether miracles have actually happened. Of course if the miracle ceases to be a miracle, by definition, as soon as the evidence for it looks convincing, then the conclusion of point 5 is hardly surprising - of course miracles do not happen, how could they? Flew also fails to distinguish here between what is logically impossible and what is historically impossible. Married bachelors are impossible because the phrase implies a contradiction of terms. But historical possibility or impossibility ought to be defined in terms of historical evidence, not in terms of prior metaphysical commitments.

Rather than hedging critical enquiry around with all kinds of prior metaphysical commitments, in the spirit of Hume and Flew, which make it difficult to examine evidence with an open mind, it is possible that the answer to the question: "Can we know that miracles have occurred?" may emerge most fruitfully by using legal models as ways of evaluating whether or not it is reasonable to believe that a particular miracle has taken place³⁹. The aim of legal reasoning is to establish beyond reasonable doubt that an event has or has not occurred. The legal profession has developed over centuries a set of meticulous criteria for distinguishing truth from error. These criteria are particularly relevant for investigating claimed miracles, since miraculous claims depend on the reliability (or otherwise) of witnesses, they involve claims about what in fact took place, and so specialise in the weighing of evidence, and they also include consideration of the counter-claims that the purported events did not occur. Hume himself expressed the point well when he stated that "The ultimate standard, by which we determine all disputes, that may arise concerning them (i.e. judgments arising from testimony), is always derived from experience and testimony"⁴⁰. More recently a law professor has commented: "The advantage of a jurisprudential approach lies in the difficulty of jettisoning it: legal standards of evidence develop as essential means of resolving the most intractable disputes in society....."⁴¹. Furthermore, it represents a type of reasoning which everyone in society is obliged to accept. We are all subject to the dictates of legal reasoning whether we like it or not. The critical consideration of evidence in legal reasoning as a methodological approach for investigating miracles also has the great advantage that it down-plays the role of prior presuppositions when pursuing a critical enquiry. As already emphasised, to pretend that these play no role at all would be to exaggerate. But it is noticeable that the debate on miracles that Hume generated, and which philosophers like Flew have continued, has tended to get bogged down in circular arguments and question-begging prior commitments to philosophical positions which have excluded the possibility of miracles by means of prior definitions. The rigour of legal reasoning provides a refreshing alternative to the sterility of such debates, since the aim of legal procedures is to determine whether an event in fact occurred, irrespective of its intrinsic likelihood or unlikelihood. And the gathering and critical assessment of

data, the construction and testing of hypotheses, together with the final conclusions about what is in fact believed to be the case, are all past-times which are congenial to the scientific temperament. It is no accident that legal and scientific ways of thinking about things have much in common: both are directed towards the goal of establishing what happened, not the rather different goal of promoting what we think ought to have happened⁴².

Can miracles count as evidence for religious truths?

The main reason why Hume wrote his *Essay on Miracles* was to demonstrate that miracles could not be used as arguments for the historical claims of Christianity. As mentioned above, such an evidentialist role for miracles was popular amongst the natural philosophers of the 17th century and beyond. That the miracles of Jesus played, to some extent, such an evidentialist role in the context of the original generation of people who first witnessed them, is not in doubt. In the very early preaching of the Church, the apostle Peter proclaimed that “Jesus of Nazareth was a man accredited by God to you by miracles, wonders and signs, which God did among you through him, as you yourselves know”⁴³. Likewise the apostle Paul wrote robustly to the early church at Rome that Jesus “was declared with power to be the Son of God by his resurrection from the dead”⁴⁴. Accounts about the miracles of Jesus were so widespread in first century Palestine, then an occupied state within the Roman Empire, that the Jewish leaders expressed concern that the Roman authorities would react unfavourably: “Here is this man performing many miraculous signs. If we let him go on like this, everyone will believe in him, and then the Romans will come and take away both our temple and our nation”⁴⁵. In another place John’s Gospel also reports that “while Jesus was in Jerusalem at the Passover Feast, many people saw the miraculous signs he was doing and believed in his name”⁴⁶. Nevertheless in the very next sentence John comments: “But Jesus would not entrust himself to them, for he knew all men”. There is therefore an ambiguity about the evidentialist role of the miracles even in the context of the New Testament accounts themselves. The miracles of Jesus are portrayed as arousing wonder and drawing attention to Jesus as someone with divine powers, but at the same time Jesus shows no hesitation in criticising those who remained in disbelief despite witnessing the miracles, or who thought that his miraculous powers might bring them personal gain. Miracles *per se* were no guarantee that belief would invariably follow: “Even after Jesus had done all these miraculous signs in their presence, they still would not believe in him”⁴⁷. Jesus also refused to perform miracles on request as if his mission was to provide entertainment for curious onlookers⁴⁸. On one occasion Jesus even pointed out that if his listeners refused to listen to the prophets that God had already sent, such as Moses, then “they will not be convinced even if someone rises from the dead”⁴⁹.

There is therefore no support in the Bible for the idea that miracles provide some kind of knock-down proof for establishing the divinity of Jesus, even for those who witnessed his miracles for themselves. At best they could provide

significant support for the claims of Jesus and the veracity of the message of the early church. At worst their *semeion* content could be completely missed and they could prove a distraction, playing a role only as entertainment, or for their curiosity value, or as a way of achieving personal wealth or power.

Of course when Peter stood up to preach to the people about the “miracles, wonders and signs, which God did among you” he was able to add the important phrase “as you yourselves know”. The miracles of Jesus were current knowledge with which his listeners were already familiar. Even though they may not each have witnessed a miracle individually, they nevertheless most probably had friends and neighbours who had witnessed such events. But we are now living nearly two thousand years later in a different place in a different culture and we are dependent on the accurate transmission of eye-witness reports over the intervening years. Can the same miracles still play an evidentialist role under such changed circumstances?

One initial ground-clearing point is first necessary. Our definition of miracles has required that they represent “an unusual or extraordinary event brought about by a god within a significant historical-religious context”. This raises a fairly obvious objection. If one does not believe in any kind of god anyway, then how is it possible to believe in a miracle according to this definition? Fair point. The sceptic may wish to point out that once you believe in a god who has the potential to perform miracles then you are already half-way to believing in at least the possibility that a miraculous event may have occurred. Also a fair point. We cannot strictly argue from a belief in miracles to a belief in God because belief in miracles implies belief in God anyway. We are back to the concept of a ‘package deal’.

Is there any way round this apparently circularity? I think there is. For example, the atheist may become so impressed by the fine-tuning of the physical laws of the universe, as discussed in the previous chapter, that she begins to establish the prior probability that the rational actions of God provide an inference to the best explanation for the existence of such a remarkable order. Given the probable existence of God, a probability derived on the basis of non-historical considerations, she may then surmise that it is possible that such a being might choose to produce a revelation which demonstrates his purposes for humankind, a revelation that might be confirmed by miracles. When a candidate revelation is then actually examined and found to fulfil the expectation that it be accompanied by well-attested miracles, then this supports the claim that the revelation is authentic. This process therefore involves a kind of thought experiment in which the probability of God is mooted on grounds other than any evidence that miracles themselves may or may not provide, and is then kept open as a possibility whilst the evidence for the miraculous claims is being assessed.

Such a process of thought is familiar to any scientist active in research. There is the possibility that a complete set of data could be interpreted within a theory quite different from the one currently favoured by the research community. The distinctly different presuppositions of this rival theory are then floated in

sophisticated thought experiments to determine whether the 'data set' can be more satisfactorily explained by the new theory. This exercise may in itself cause the investigator to lean more towards the novel theory, and at the same time may suggest critical experiments which will provide further data sufficient to clearly decide between the rival theories. If the results are decisive, the scientist will end up believing a different theory than before. This represents no sudden 'conversion' to the new theory, but a gradual shift from one theory to another, in which 'what if?' thought experiments have played an important role.

An example which illustrates at least part of this process is provided by the acceptance of plate tectonic theory by geologists in the 1960's. By that time the evidence for continental drift was very strong despite the fact that no-one could explain a dynamic theory of the forces responsible. The proposal of the mechanism of plate tectonics incorporated data which was already available and made it more believable as part of a larger story, as it could now be understood, at least in principle, *how* the movements of continents had actually occurred in relation to each other. This type of acceptance of data by its incorporation into a convincing theory is a familiar story in the history of science.

Thus even though belief in miracles *per se* can, in principle, provide no evidentialist support for belief in God, since the two are so linked together, nevertheless the sceptical but open-minded investigator can bring to their enquiry an openness to the possibility that God has brought about a miracle in particular historical circumstances and for particular purposes, and the pursuit of their enquiry may then eventually confirm or deny their starting assumptions.

The evidentialist role of the New Testament miracles may therefore lie not so much in the historical support, or otherwise, which exists for a particular isolated miracle, but in the way in which the miraculous element of the Gospel narratives makes sense in the context of the overall claims made concerning the death, resurrection and overall mission of Jesus. The events themselves cannot be extracted out of the world-view and assumptions of the New Testament writers any more than the data supporting the idea that continents move can be extracted out of the conceptual framework provided by plate tectonics.

It must of course be admitted that the evidentialist role of the New Testament miracles cannot be as strong today as it was for those who were the original witnesses of the alleged events. When Luke was writing the opening words of his Gospel he stated that "Many have undertaken to draw up an account of the things that have been fulfilled among us, just as they were handed down to us by those who from the first were eye-witnesses and servants of the word. Therefore, since I myself have carefully investigated everything from the beginning, it seemed good also to me to write an orderly account for you, most excellent Theophilus, so that you may know the certainty of the things that you have been taught"⁵¹. And when John was writing the completing words of his Gospel, he wrote: "This is the disciple who testifies to these things and who wrote them down. We know that his testimony is true"⁵². We cannot be in the same position as Luke and John, people who had personal opportunity to witness the

miracles of Jesus and to sift the various narratives and question other eye-witnesses who were still alive at the time. For this reason some have suggested that the evidentialist role of historical miracles is zero - they cannot be utilised in any way, for example, to support the claims of Christian belief. My own view is that such an assessment is unnecessarily pessimistic. There is an intermediate position which suggests that whilst the New Testament miracles cannot count as evidence for us in the same way that they clearly did for the Gospel writers as part of the justification for a belief in God, nevertheless they contribute to a cumulative case. This contribution is certainly much higher than zero.

In scientific rationalising about theories a frequently used phrase is: "These data are consistent with the theory that...." It is the sort of phrase that everyone uses in the Discussion section of their scientific papers in an attempt not to over-interpret their data, but at the same to state firmly how the data is perceived to fit with a particular model. The kind of first-hand historical testimony that the Gospel writers have bequeathed to us brings such a phrase to mind. What we have is not knock-down evidence, but a cumulative weight of data which, taken together, is consistent with the theory that Jesus really did have divine origins. In assessing the cumulative weight of evidence we can also, to some extent, picture ourselves in the position of those who contributed their eye-witness accounts which have been transmitted to us via the Gospel records. If we had lived with someone for several years, then watched him die in a cruel way which ensured that he really was dead, then witnessed his well-wrapped body being placed in a sealed tomb guarded by soldiers whose task was to prevent body snatching, followed by the observation two days later that the tomb was empty and subsequent personal appearances of the resurrected Jesus, then what would we have concluded? Would we have believed the evidence of our senses or our prior metaphysical presuppositions?

The evidentialist role of miracles for the sceptical inquirer may vary considerably depending on the type of miracle in question. As already pointed out, the miracle accounts of the Bible vary from those at one end of the spectrum for which the Bible itself provides physical explanations to those at the other end of the spectrum for which no scientific explanation is currently conceivable. Miraculous accounts in which a constellation of events occur at precisely the appropriate time for an event to occur (such as the Exodus) are not necessarily devoid of evidentialist weight. The sceptic will point out that constellations of unlikely events happen quite frequently when we pool the experiences of large populations, and it is precisely these remarkable constellations which will be more likely to be noted and recorded in a nation's history. In response it can be pointed out that the constellation of events to which the Bible draws our attention were in the context of particular historical contexts, often in answer to prayer, and where the people of Israel (in the Exodus context, for example) had been told by God that they would in fact be delivered. There is an element of prediction in the narrative for which the constellation of remarkable events became a fulfilment.

Yet it is probably the alleged miracles up the other end of the scale - those for which no scientific explanation appears possible - which have played the strongest evidentialist role as part of a cumulative body of evidence persuading the sceptic that, for example, Jesus really was of divine origin. For if God is creator, and everything continues to exist by his will, and if the incarnation is true and Jesus really was God entering the world in human form, then it would not be unexpected that Jesus demonstrates his power and control over the created order in the same way that God does, even to the extent of reversing the very processes of death itself. This presumably explains why the alleged resurrection of Jesus from the dead has always proven to be pivotal in any discussion on this issue.

When Hume wrote his *Dialogues Concerning Natural Religion* he put some words into the lips of Philo, who concluded his assessment of the evidence for God's existence as follows:

The most natural sentiment, which a well-disposed mind will feel on this occasion, is a longing desire and expectation, that Heaven would be pleased to dissipate, at least alleviate, this profound ignorance, by affording some more particular revelation to mankind, and making discoveries of the nature, attributes, and operations of the divine object of our Faith⁵³.

Can we detect a certain wistfulness in Hume's words in this his final volume, published posthumously? If so, it seems ironic that his arguments against the evidentialist role of miracles may have excluded the very possibility that the 'most natural sentiment' that a 'well-disposed mind will feel' might be satisfied.

Do miracles happen today?

So far we have carefully skated round the issue of whether miracles still occur today, allowing Hume to set our agenda as to the nature of miracles and whether they have occurred historically. Personally I remain agnostic on the issue, but cannot see why the possibility of contemporary miracles as defined above can be excluded in principle. If there is a creator God who upholds the properties of matter that we investigate as scientists, then it is difficult to see why such a God could not choose to bring about an event or set of events of an unusual nature in a particular context and for a particular religious purpose. The unusual nature of the event could be recognised in the same way that we have discussed in the context of the Biblical miracles, either as a constellation of remarkable circumstances through which God shows his plan or purposes for a particular individual or community, or due to the fact that the event itself does not fit with the normally expected behaviour of the physical world. Such events could be investigated by the same processes of legal reasoning that have already been suggested. The procedures involved would be greatly facilitated by the contemporary nature of the alleged miracle. Witnesses of the alleged event could be cross-examined, character references obtained, their trust-worthiness (or otherwise) assessed and 'before' and 'after' reports obtained where relevant. For example, in the case out-lined above of the theoretical healing of Mrs B who was

cured of her rheumatoid arthritis, it is conceivable that all the necessary evidence and counter-evidence could be in place to make a sensible decision about the nature of the alleged event.

Given the definition of miracles utilised in this chapter, which in turn was derived from the miraculous accounts found in the Bible, there seems no reason to exclude an event as a miracle merely because there is a potential scientific explanation for what occurred. For example, let us suppose that a super-scientist had access to a complete analysis of Mrs B's body at the moment that she was being healed of her rheumatoid arthritis. It is conceivable that he might be able to describe what was happening within normal scientific terms, albeit referring to processes that were speeded up enormously compared to those that might normally pertain to a regression of arthritic disease. I cannot see why such a hypothetical thought experiment should count against Mrs B's claim that she had in fact been miraculously healed. Once we accept a Biblical rather than a Humean definition of miracles, then there will be no need to get bogged down in discussions of whether claimed miraculous events have potential or actual scientific explanations.

This will of course leave the demarcation boundary between the miraculous and the non-miraculous somewhat fuzzy. This will only matter for people for whom the confirmation of contemporary miracles is important for their faith. Personally it matters little whether contemporary miracles do or do not happen, and the issue has no bearing on my own faith. For the theist who believes in a God who is actively sustaining every atom of the universe at every instant, it is clearly not impossible that God may choose to perform unusual events on occasion, but such a faith in God certainly does not demand or expect such events. It is the spirit of open-minded enquiry which hesitates before concluding that such events are impossible.

As to whether contemporary miracles have in fact occurred, it would clearly require a book at least as long as this one to investigate such a question thoroughly. However, it has to be said that the attitudes and actions of many so-called 'miracle-working preachers', particularly those of the American televangelist brand, do not encourage confidence in their claimed healings. A striking feature of the miracles of Jesus is their complete absence of hype and hysteria. Jesus speaks or gives a simple command and the miracle happens. The results were clear-cut and there was no need for discussion amongst the on-lookers as to whether a miracle had happened. They might disagree about its interpretation, but they could not disagree about the fact that it had happened. This is in marked contrast to the hype and hysteria that surround many contemporary claims to miraculous healing events. But the fact that most contemporary miraculous claims may be bogus cannot be taken to prove that no miraculous events occur at all under any circumstances. An open mind should not be closed merely by a large accumulation of counter-examples.

Some Conclusions on Miracles

It has been suggested in this chapter that the traditional Humean definition of miracles as “violations of natural law”, as expressed in a Nature Editorial, does not adequately express a rival understanding of miracles which has been widely disseminated for many centuries and which finds its roots in the miracle narratives of the Bible. This understanding emphasises not the violation of ‘laws of nature’, though this may be involved, but rather the purposeful and non-capricious actions of a god in bringing the miracle about within a significant historical-religious context. In this view God is the creator who actively sustains the whole created order and miracles are discernible as unusual actions of God. Some of the inadequacies of Hume’s Essay on Miracles have been surveyed, and it has been concluded that his prior metaphysical commitments led him to be unnecessarily closed to considering evidence for the miraculous in a way that contrasts with the scientific commitment to openness to evidence. Claims to miracles are embedded in a particular world-view, just as scientific data are embedded in particular scientific theories. Thus the assessment of miraculous claims cannot be made without considering them within their world-view context. This limits the contemporary evidentialist role of miracles, but they may be used as part of a cumulative case to support belief in God in a way analogous to the scientist who accepts a particular theory-plus-data-set as a complete ‘package deal’. It is suggested that legal reasoning is a useful way of assessing the veracity of miraculous claims in both their historical and contemporary contexts.

15,202 words

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1. Letter to *The Times*, July 13, 1984, by Prof. R.J.Berry FRSE, President of the Linnean Society, Sir Robert Boyd FRS, Prof. Martin Bott FRS, Prof. Denis Burkitt FRS, Sir Clifford Butler FRS, Prof. John Houghton FRS, Prof. D.Tyrrell FRS, Prof. E.Andrews (Materials Science, London), Prof. E. Dobbs (Physics, London), Prof. J.Lloyd (Biochemistry, Keele), Prof. M. Jeeves (Psychology, St.Andrews), Prof. C. Russell (History of Science, Open University), Prof. D.Spanner (Plant Biophysics, London), Prof. G.Wetherill (Statistics, Kent).
2. *Nature* 310, 19 July 1984 p. 171. The first section of the Editorial, which is not quoted here, is a summary of The Times letter.

3. For example, see R.M.Burns, *The Great Debate on Miracles - from Joseph Glanvill to David Hume*, Bucknell University Press, 1981; C.Brown, *Miracles and the Critical Mind*, W.B.Eerdmans, 1984; A.Flew, *Hume's Philosophy of Belief*, Routledge & Kegan Paul, 1961; J.Houston, *Reported Miracles - a Critique of Hume*, Cambridge University Press, 1994; F.J.Beckwith, '*David Hume's Argument Against Miracles - a Critical Analysis*', University Press of America, 1989; M.P.Levine, *Hume and the Problem of Miracles: a Solution*, Kluwer Academic Publishers, 1989.

4. D.Hume, *Enquiries Concerning Human Understanding and Concerning the Principles of Morals*, ed. I.A.Selby-Bigge, 3rd edn with text and notes, Oxford University Press, 1975.

5. A point argued at some length by R.M.Burns op.cit.

6. Thomas Sprat, *History of the Royal Society* (London, 1667), Facsimile reprint, Washington University Studies, St. Louis, USA, 1958, p. 352.

7. D. Hume, op.cit. p.113.

8. D.Hume, op.cit. p. 114.

9. D. Hume, op.cit. p. 124.

10. There has been much scholarly discussion over the question of why, if miracles cannot happen, as Hume appears to be claiming in Part 1 of his Essay, there should then be the necessity to add Part 2 which presented the standard deistic *a posteriori* arguments of the era to undermine the credibility of miracles accounts. If miracles cannot happen anyway, then what is the point in considering such arguments? The philosopher Antony Flew tried to smooth the ambiguity by suggesting that in Part 1 Hume was not really saying that miracles are impossible, only that they are very unlikely, making further arguments necessary in Part 2 (cf. A. Flew op.cit]. But a more convincing explanation has been put forward by Burns, who maintains that Hume originally wrote the Essay in its Part 1 form only to demonstrate the absolute inconceivability of rational belief in miracles, but then reluctantly later came to the conclusion that his arguments would be taken more seriously if his claims were made rather more cautiously (see R.M.Burns, op.cit., p. 154 ff].

11. For a more detailed discussion of the varied uses of 'law' terminology in the history of science, see J.H.Brooke, 'Natural Law in the Natural Sciences', *Science & Christian Belief* 4, 83-103, 1992

12. E. Mach, *Popular Scientific Lectures*, Chicago: Open Court Publishing, 1989.
13. S.Hawking, "Letters to the Editor: Time and the Universe". *American Scientist* 73, page 12, 1985.
14. P.Davies, *The Mind of God: Science and the Search for Ultimate Meaning*, London: Penguin, 1992, pp. 72-92.
In contrast
15. For example, D.M.Armstrong, *What is a Law of Nature?*, Cambridge University Press, 1983, p.8
16. R.Dawkins, *The Blind Watchmaker*, .Longman, 1986, p.139.
17. Exodus Ch. 14.21. Whether the correct translation is 'Red Sea' or 'Sea of Reeds' is still debated by Biblical scholars - there is evidence on both sides of the question - but the Hebrew text does state 'Sea of Reeds'.
18. A.S.Issar, "La Bible et la Science - Font-elles bon menage?" *La Recherche*, January 1996, pp 48-54 (English text kindly provided by Prof. Issar).
19. See the Israelites' Song of Deliverance in Exodus chapter 15. The early Church clearly saw the crossing of the Reed Sea as a 'miraculous sign' cf. Acts 7.36.
20. Exodus 8: 23. See also Psalm 106.21-22; Psalm 135.9; Jeremiah 32.20.
21. See John 2.1-11 and John 20.1-18.
22. R.J.Berry, 'The Virgin Birth of Christ', *Science & Christian Belief* 8, 101-110, 1996
23. e.g. *terata* in Acts 2.19 cf. *mopheth* used in Deuteronomy 29.3.
24. Cited by C.Brown, *op. cit.*, p. 217.
25. e.g. as in 2 Corinthians 12.12; Hebrews 2.4; Acts 8.13, etc.
26. Deuteronomy 29.3.
27. This example is based on that found in F.J.Beckwith, *op.cit.*, p. 96.
28. John 20. 6-7.

29. I am aware that the idea that Hume propounds a circular argument is not supported by all commentators. For example, Beckwith suggests that Hume is not arguing for the uniformity of nature, but rather that “our formulations of natural law, if they are to be considered lawful appraisals of our perceptions, must be based on uniform experience, or they cease to be natural law” (cf. F.J. Beckwith op.cit., p. 28). Thus, according to David Norton, “If our experience of X’s has been “firm and unalterable” or “infallible”, then we have, in Hume’s scheme, a “proof” and are in a position to formulate a law of nature, or a summation of uniform experience. Correlatively, the moment we fail to have a proof, or perfect empirical support for any summation, we fail to have a law of nature”. In other words, if a miracle is by definition a violation of a natural law, but a violated law is really no law at all (because a natural law, by definition, is only such if based on uniform experience), then clearly miracles cannot happen. However, as Beckwith himself points out, this interpretation of Hume’s position does not make his argument less of a tautology, for we may still ask the question “Why must one accept that a natural law cannot be a natural law if it has been violated?”, and if the answer is that “natural law cannot be otherwise” then the question has been begged and Hume’s argument remains essentially circular. Indeed, it is difficult to read Hume’s Essay without receiving a strong impression of a circular argument - as soon as the possibility of a genuinely persuasive collection of evidence in favour of the miraculous is mooted, Hume pulls the rug by claiming that since miracles are impossible anyway the weight of evidence is insufficient to carry the day.

30. Burns, op. cit., p. 32.

31. W.Corduan, ‘Recognizing a Miracle’, in R.D.Geivett & G.R.Habermas (eds), *Defence of Miracles*, Apollos, 1997, p. 102.

32 S.Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England*, University of Chicago Press, 1994.

33. J.H.Brooke, ‘Natural Law in the Natural Sciences’, *Science & Christian Belief* 4, 83-103, 1992.

34. Augustine, *Confessions* VI.5, trans. Pine-Coffin, Harmondsworth, 1961, p. 117.

35. R.J.Evans, *In Defence of History*, Granta Books, London, 1997. pp. 127 and 128.

36. A.Flew, *God: a Critical Enquiry*, 2nd edn. LaSalle, Illinois, Open Court, 1984, p. 140. The summary of Flew’s argument is provided by F.J.Beckwith, op. cit. p. 94.

37. N.L.Geisler, *Miracles and the Modern Mind*, Baker, 1992, pp. 79-80.
38. A.Flew, 'Miracles' in *Encyclopaedia of Philosophy*, vol. 5 ed. P.Edwards (New York: Macmillan and the Free Press, 1967, p. 352.
39. cf. F.J.Beckwith, op. cit., pp 122-133.
40. D.Hume, op.cit. p.112.
41. J.W.Montgomery, *Human Rights and Human Dignity*, Grand Rapids, Zondervan, 1986, p. 134.
42. The argument is expanded in F.J.Beckwith, op. cit., pp 122-133.
43. Acts 2.22
44. Romans 1.4.
45. John 11.48
46. John 2.23.
47. John 12.37
48. e.g. Matthew 12.39-42; 16.1-4; Luke 11.29-32; John 6.30-33.
49. Luke 16.31.
50. See R. Swinburne, *Faith and Reason*, 1981, Clarendon Press, Oxford, p. 180, and R. Swinburne, *Revelation: From Metaphor to Analogy*, Clarendon Press, Oxford, 1992, Chapter 5.
51. Luke 1.1-4.
52. John 21.24.
53. D.Hume, *Dialogues Concerning Natural Religion*, 1779, Indianapolis: Bobbs-Merrill, 1947, p. 227.

