

PHILOSOPHY OF RELIGION

Selected Readings

Second Edition



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The Evidence for
Miracles Is Weak

This selection contains a classic and influential argument against belief in miracles crafted by David Hume (1711–1776). The wise person, Hume informs us, will always proportion his or her belief to the evidence. He goes on to say that our belief in the relevant laws of nature are based on uniform, public, past experience, which provides a great amount of objective evidence, while the evidence supporting alleged violations of these laws consists solely of personal testimonies that cannot be substantiated by independent testing. Hume then concludes that it is always most reasonable to assume that alleged miracles did not occur as reported.



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. Why is it more than probable, that all men must die; that lead cannot, of itself, remain suspended in the air; that fire consumes wood, and is extinguished by water; unless it be, that these events are found agreeable to the laws of nature, and there is required a violation of these laws, or in other words, a miracle to prevent them? Nothing is esteemed a miracle, if it ever happen in the common course of nature. It is no miracle, if it ever happen in the common course of nature. It is no miracle that a man, seemingly in good health, should die of a sudden, because such a kind of death, though more unusual than any other, has yet been frequently observed to happen. But it is a miracle, that a dead man should come to life; because that has never been observed in any age or country. There must, therefore, be a uniform experience against every miraculous event, otherwise the event would not merit that appellation. And as a uniform experience amounts to a proof, there is here a direct and full *proof*, from the nature of the fact, against the existence of any miracle; nor can such a proof be destroyed, or the miracle rendered credible, but by an opposite proof, which is superior.

The plain consequence is (and it is a general maxim worthy of our attention), "That no testimony is sufficient to establish a miracle, unless the testimony be of such a kind, that its falsehood would be more miraculous, than the fact, which it endeavors to establish; and even in that case there is a mutual destruction of arguments, and the superior only gives as an assurance suitable to that degree of force, which remains, after deducting the inferior."

From "Of Miracles," in *An Enquiry concerning Human Understanding*.

When anyone tells me, that he saw a dead man restored to life, I immediately consider with myself, whether it be more probable, that this person should either deceive or be deceived, or that the fact, which he relates, should really have happened. I weigh the one miracle against the other; and according to the superiority, which I discover, I pronounce my decision, and always reject the greater miracle. If the falsehood of his testimony would be more miraculous, than the event which he relates; then, and not till then, can he pretend to command my belief or opinion.

In the foregoing reasoning we have supposed, that the testimony, upon which a miracle is founded, may possibly amount to an entire proof, and that the falsehood of that testimony would be a real prodigy: But it is easy to show, that we have been a great deal too liberal in our concession, and that there never was a miraculous event established on so full an evidence.

For *first*, there is not to be found, in all history, any miracle attested by a sufficient number of men, of such unquestioned good sense, education, and learning, as to secure us against all delusion in themselves; of such undoubted integrity, as to place them beyond all suspicion of any design to deceive others; of such credit and reputation in the eyes of mankind, as to have a great deal to lose in case of their being detected in any falsehood; and at the same time, attesting facts performed in such a public manner and in so celebrated a part of the world, as to render the detection unavoidable: All which circumstances are requisite to give us a full assurance in the testimony of men.

Secondly. We may observe in human nature a principle which, if strictly examined, will be found to diminish extremely the assurance, which we might, from human testimony, have, in any kind of prodigy. The maxim, by which we commonly conduct ourselves in our reasonings, is, that the objects, of which we have no experience, resemble those, of which we have; that what we have found to be most usual is always most probable; and that where there is an opposition of arguments, we ought to give the preference to such as are founded on the greatest number of past observations. But though, in proceeding by this rule, we readily reject any fact which is unusual and incredible in an ordinary degree; yet in advancing farther, the mind observes not always the same rule; but when anything is affirmed utterly absurd and miraculous, it rather the more readily admits of such a fact, upon account of that very circumstance, which ought to destroy all its authority, the passion of *surprise* and *wonder*, arising from miracles, being an agreeable emotion, gives a sensible tendency towards the belief of those events, from which it is derived. And this goes so far, that even those who cannot enjoy this pleasure immediately, nor can believe those miraculous events, of which they are informed, yet love to partake of the satisfaction at second-hand or by rebound, and place a pride and delight in exciting the admiration of others.

With what greediness are the miraculous accounts of travelers received, their descriptions of sea and land monsters, their relations of wonderful adventures, strange men, and uncouth manners? But if the spirit of religion join itself to the love of wonder, there is an end of common sense; and human testimony, in these circumstances, loses all pretensions to authority. A religion-

ist may be an enthusiast, and imagine he sees what has no reality: he may know his narrative to be false, and yet persevere in it, with the best intentions in the world, for the sake of promoting so holy a cause: or even where this delusion has not place, vanity, excited by so strong a temptation, operates on him more powerfully than on the rest of mankind in any other circumstances; and self-interest with equal force. His auditors may not have, and commonly have not, sufficient judgment to canvass his evidence: what judgment they have, they renounce by principle, in these sublime and mysterious subjects: or if they were ever so willing to employ it, passion and a heated imagination disturb the regularity of its operations. Their credulity increases his impudence: and his impudence overpowers their credulity.

Eloquence, when at its highest pitch, leaves little room for reason or reflection; but addressing itself entirely to the fancy or the affections, captivates the willing hearers, and subdues their understanding. Happily, this pitch it seldom attains. But what a Tully or a Demosthenes could scarcely effect over a Roman or Athenian audience, every *Capuchin*, every itinerant or stationary teacher can perform over the generality of mankind, and in a higher degree, by touching such gross and vulgar passions.

The many instances of forged miracles, and prophecies, and supernatural events, which, in all ages, have either been detected by contrary evidence, or which detect themselves by their absurdity, prove sufficiently the strong propensity of mankind to the extraordinary and the marvelous, and ought reasonably to beget a suspicion against all relations of this kind. This is our natural way of thinking, even with regard to the most common and most credible events. For instance: There is no kind of report which rises so easily, and spreads so quickly, especially in country places and provincial towns, as those concerning marriages; insomuch that two young persons of equal condition never see each other twice, but the whole neighborhood immediately join them together. The pleasure of telling a piece of news so interesting, of propagating it, and of being the first reporters of it, spreads the intelligence. And this is so well known, that no man of sense gives attention to these reports, till he find them confirmed by some greater evidence. Do not the same passions, and others still stronger, incline the generality of mankind to believe and report, with the greatest vehemence and assurance, all religious miracles?

Thirdly. It forms a strong presumption against all supernatural and miraculous relations, that they are observed chiefly to abound among ignorant and barbarous nations; or if a civilized people has ever given admission to any of them, that people will be found to have received them from ignorant and barbarous ancestors, who transmitted them with that inviolable sanction and authority, which always attend received opinions. When we peruse the first histories of all nations, we are apt to imagine ourselves transported into some new world; where the whole frame of nature is disjointed, and every element performs its operations in a different manner, from what it does at present. Battles, revolutions, pestilence, famine and death, are never the effect of those natural causes, which we experience. Prodigies, omens, or-

acles, judgments, quite obscure the few natural events, that are intermingled with them. But as the former grow thinner every page, in proportion as we advance nearer the enlightened ages, we soon learn, that there is nothing mysterious or supernatural in the case, but that all proceeds from the usual propensity of mankind towards the marvelous, and that, though this inclination may at intervals receive a check from sense and learning, it can never be thoroughly extirpated from human nature.

It is strange, a judicious reader is apt to say, upon the perusal of these wonderful historians, *that such prodigious events never happen in our days*. But it is nothing strange, I hope, that men should lie in all ages. You must surely have seen instances enough of that frailty. You have yourself heard many such marvelous relations started, which, being treated with scorn by all the wise and judicious, have at last been abandoned even by the vulgar. Be assured, that those renowned lies, which have spread and flourished to such a monstrous height, arose from like beginnings; but being sown in a more proper soil, shot up at last into prodigies almost equal to those which they relate.

It was a wise policy in that false prophet, Alexander, who though now forgotten, was once so famous, to lay the first scene of his impostures in Paphlagonia, where, as Lucian tells us, the people were extremely ignorant and stupid, and ready to swallow even the grossest delusion. People at a distance, who are weak enough to think the matter at all worth enquiry, have no opportunity of receiving better information. The stories come magnified to them by a hundred circumstances. Fools are industrious in propagating the imposture; while the wise and learned are contented, in general, to deride its absurdity, without informing themselves of the particular facts, by which it may be distinctly refuted. And thus the impostor above mentioned was enabled to proceed, from his ignorant Paphlagonians, to the enlisting of votaries, even among the Grecian philosophers, and men of the most eminent rank and distinction in Rome: nay, could engage the attention of that sage emperor Marcus Aurelius; so far as to make him trust the success of a military expedition to his delusive prophecies.

The advantages are so great, of starting an imposture among an ignorant people, that, even though the delusion should be too gross to impose on the generality of them (*which, though seldom, is sometimes the case*) it has a much better chance for succeeding in remote countries, than if the first scene had been laid in a city renowned for arts and knowledge. The most ignorant and barbarous of these barbarians carry the report abroad. None of their countrymen have a large correspondence, or sufficient credit and authority to contradict and beat down the delusion. Men's inclination to the marvelous has full opportunity to display itself. And thus a story, which is universally exploded in the place where it was first started, shall pass for certain at a thousand miles distance. But had Alexander fixed his residence at Athens, the philosophers of that renowned mart of learning had immediately spread, throughout the whole Roman empire, their sense of the matter; which, being supported by so great authority, and displayed by all the force of reason and eloquence, had

entirely opened the eyes of mankind. It is true; Lucian, passing by chance through Paphlagonia, had an opportunity of performing this good office. But, though much to be wished, it does not always happen, that every Alexander meets with Lucian, ready to expose and detect his impostures.

I may add as a *fourth* reason, which diminishes the authority of prodigies, that there is no testimony for any, even those which have not been expressly detected, that is not opposed by an infinite number of witnesses; so that not only the miracle destroys the credit of testimony, but the testimony destroys itself. To make this the better understood, let us consider, that, in matters of religion, whatever is different is contrary; and that it is impossible the religions of ancient Rome, of Turkey, of Siam, and of China should, all of them, be established on any solid foundation. Every miracle, therefore, pretended to have been wrought in any of these religions (and all of them abound in miracles), as its direct scope is to establish the particular system to which it is attributed; so has it the same force, though more indirectly, to overthrow every other system. In destroying a rival system, it likewise destroys the credit of those miracles, on which that system was established; so that all the prodigies of different religions are to be regarded as contrary facts; and the evidences of these prodigies, whether weak or strong, as opposite to each other. According to this method of reasoning, when we believe any miracle of Mahomet or his successors, we have for our warrant the testimony of a few barbarous Arabians: And on the other hand, we are to regard the authority of Titus Livius, Plutarch, Tacitus, and, in short, of all the authors and witnesses, Grecian, Chinese, and Roman Catholic, who have related any miracle in their particular religion; I say, we are to regard their testimony in the same light as if they had mentioned that Mahometan miracle, and had in express terms contradicted it, with the same certainty as they have for the miracle they relate. This argument may appear over subtle and refined; but is not in reality different from the reasoning of a judge, who supposes, that the credit of two witnesses, maintaining a crime against any one, is destroyed by the testimony of two others, who affirm him to have been two hundred leagues distant, at the same instant when the crime is said to have been committed.

One of the best attested miracles in all profane history, is that which Tacitus reports of Vespasian, who cured a blind man in Alexandria, by means of his spittle, and a lame man by the mere touch of his foot; in obedience to a vision of the god Serapis, who had enjoined them to have recourse to the Emperor, for these miraculous cures. The story may be seen in that fine historian¹; where every circumstance seems to add weight to the testimony, and might be displayed at large with all the force of argument and eloquence, if any one were now concerned to enforce the evidence of that exploded and idolatrous superstition. The gravity, solidity, age, and probity of so great an emperor, who, through the whole course of his life, conversed in a familiar manner with his friends and courtiers, and never affected those extraordinary airs of divinity assumed by Alexander and Demetrius. The historian, a contemporary writer, noted for candor and veracity, and withal, the greatest and most penetrating genius, perhaps, of all antiquity; and so free from any

tendency to credulity, that he even lies under the contrary imputation, of atheism and profaneness: The persons, from whose authority he related the miracle, of established character for judgment and veracity, as we may well presume; eye-witnesses of the fact, and confirming their testimony, after the Flavian family was despoiled of the empire, and could no longer give any reward, as the price of a lie. *Utrumque, qui interfuere, nunc quoque memorant, postquam nullum mendacio pretium.* To which if we add the public nature of the facts, as related, it will appear, that no evidence can well be supposed stronger for so gross and so palpable a falsehood.

There is also a memorable story related by Cardinal de Retz, which may well deserve our consideration. When that intriguing politician fled into Spain, to avoid the persecution of his enemies, he passed through Saragossa, the capital of Arragon, where he was shown, in the cathedral, a man, who had served seven years as a doorkeeper, and was well known to everybody in town, that had ever paid his devotions at that church. He had been seen, for so long a time, wanting a leg; but recovered that limb by the rubbing of holy oil upon the stump; and the cardinal assures us that he saw him with two legs. This miracle was vouched by all the canons of the church; and the whole company in town were appealed to for a confirmation of the fact: whom the cardinal found, by their zealous devotion, to be thorough believers of the miracle. Here the relater was also contemporary to the supposed prodigy, of an incredulous and libertine character, as well as of great genius; the miracle of so *singular* a nature as could scarcely admit of a counterfeit, and the witnesses very numerous, and all of them, in a manner, spectators of the fact, to which they gave their testimony. And what adds mightily to the force of the evidence, and may double our surprise on this occasion, is, that the cardinal himself, who relates the story, seems not to give any credit to it, and consequently cannot be suspected of any concurrence in the holy fraud. He considered justly, that it was not requisite, in order to reject a fact of this nature, to be able accurately to disprove the testimony, and to trace its falsehood, through all the circumstances of knavery and credulity which produced it. He knew, that, as this was commonly altogether impossible at any small distance of time and place; so was it extremely difficult, even where one was immediately present, by reason of the bigotry, ignorance, cunning, and roguery of a great part of mankind. He therefore concluded, like a just reasoner, that such an evidence carried falsehood upon the very face of it, and that a miracle, supported by any human testimony, was more properly a subject of derision than of argument.

There surely never was a greater number of miracles ascribed to one person, than those, which were lately said to have been wrought in France upon the tomb of Abbé Paris, the famous Jansenist, with whose sanctity the people were so long deluded. The curing of the sick, giving hearing to the deaf, and sight to the blind, were every where talked of as the usual effects of that holy sepulchre. But what is more extraordinary; many of the miracles were immediately proved upon the spot, before judges of unquestioned integrity, attested by witnesses of credit and distinction, in a learned age, and on the most

eminent theatre that is now in the world. Nor is this all: a relation of them was published and dispersed everywhere; nor were the *Jesuits*, though a learned body, supported by the civil magistrate, and determined enemies to those opinions, in whose favor the miracles were said to have been wrought, ever able distinctly to refute or detect them. 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 refutation.

Is the consequence just, because some human testimony has the utmost force and authority in some cases, when it relates the battle of Philippi or Pharsalia for instance; that therefore all kinds of testimony must, in all cases, have equal force and authority? Suppose that the Casarean and Pompeian factions had, each of them, claimed the victory in these battles, and that the historians of each party had uniformly ascribed the advantage to their own side; how could mankind at this distance, have been able to determine between them? The contrariety is equally strong between the miracles related by Herodotus or Plutarch, and those delivered by Mariana, Bede, or any monkish historian.

The wise lend a very academic faith to every report which favors the passion of the reporter; whether it magnifies his country, his family, or himself, or in any other way strikes in with his natural inclinations and propensities. But what greater temptation than to appear a missionary, a prophet, an ambassador from heaven? Who would not encounter many dangers and difficulties, in order to attain so sublime a character? Or if, by the help of vanity and a heated imagination, a man has first made a convert of himself, and entered seriously into the delusion; who ever scruples to make use of pious frauds, in support of so holy and meritorious a cause?

The smallest spark may here kindle into the greatest flame; because the materials are always prepared for it. The *avidum genus auricularum*,² the gazing populace, receive greedily, without examination, whatever soothes superstition, and promotes wonder.

How many stories of this nature have, in all ages, been detected and exploded in their infancy? How many more have been celebrated for a time, and have afterwards sunk into neglect and oblivion? Where such reports, therefore, fly about, the solution of the phenomenon is obvious; and we judge in conformity to regular experience and observation, when we account for it by the known and natural principles of credulity and delusion. And shall we, rather than have a recourse to so natural a solution, allow of a miraculous violation of the most established laws of nature?

I need not mention the difficulty of detecting a falsehood in any private or even public history, at the place, where it is said to happen; much more when the scene is removed to ever so small a distance. Even a court of judicature, with all the authority, accuracy, and judgment, which they can employ, find themselves often at a loss to distinguish between truth and falsehood in the most recent actions. But the matter never comes to any issue, if

trusted to the common method of altercations and debate and flying rumors; especially when men's passions have taken part on either side.

In the infancy of new religions, the wise and learned commonly esteem the matter too inconsiderable to deserve their attention or regard. And when afterwards they would willingly detect the cheat, in order to undeceive the deluded multitude, the season is now past, and the records and witnesses, which might clear up the matter, have perished beyond recovery.

No means of detection remain, but those which must be drawn from the very testimony itself of the reporters: and these, though always sufficient with the judicious and knowing, are commonly too find to fall under the comprehension of the vulgar.

Upon the whole, then, it appears, that no testimony for any kind of miracle has ever amounted to a probability, much less to a proof; and that, even supposing it amounted to a proof, it would be opposed by another proof; derived from the very nature of the fact, which it would endeavor to establish. It is experience only, which gives authority to human testimony; and it is the same experience, which assures us of the laws of nature. When, therefore, these two kinds of experience are contrary, we have nothing to do but subtract the one from the other, and embrace an opinion, either on one side or the other, with that assurance which arises from the remainder. But according to the principle here explained, this subtraction, with regard to all popular religions, amounts to an entire annihilation; and therefore we may establish it as a maxim, that no human testimony can have such force as to prove a miracle, and make it a just foundation for any such system of religion.

I beg the limitations here made may be remarked, when I say, that a miracle can never be proved, so as to be the foundation of a system of religion. For I own, that otherwise, there may possibly be miracles, or violations of the usual course of nature, of such a kind as to admit of proof from human testimony, though, perhaps, it will be impossible to find any such in all the records of history. Thus, suppose, all authors, in all languages, agree, that, from the first of January 1600, there was a total darkness over the whole earth for eight days: suppose that the tradition of this extraordinary event is still strong and lively among the people: that all travelers, who return from foreign countries, bring us accounts of the same tradition, without the least variation or contradiction: it is evident, that our present philosophers, instead of doubting the fact, ought to receive it as certain, and ought to search for the causes whence it might be derived. The decay, corruption, and dissolution of nature, is an event rendered probable by so many analogies, that any phenomenon, which seems to have a tendency towards that catastrophe, comes within the reach of human testimony, if that testimony be very extensive and uniform.

But suppose, that all the historians who treat of England, should agree, that, on the first of January 1600, Queen Elizabeth died; that both before and after her death she was seen by her physicians and the whole court, as is usual with persons of her rank; that her successor was acknowledged and proclaimed by the Parliament; and that, after been interred a month, she

again appeared, resumed the throne, and governed England for three years: I must confess that I should be surprised at the concurrence of so many odd circumstances, but should not have the least inclination to believe so miraculous an event. I should not doubt of her pretended death, and of those other public circumstances that followed it: I should only assert it to have been pretended, and that it neither was, nor possibly could be real. You would in vain object to me the difficulty, and almost impossibility of deceiving the world in an affair of such consequence; the wisdom and solid judgment of that renowned queen; with the little or no advantage which she could reap from so poor an artifice: All this might astonish me; but I would still reply, that the knavery and folly of men are such common phenomena, that I should rather believe the most extraordinary events to arise from their concurrence, than admit of so signal a violation of the laws of nature.

But should this miracle be ascribed to any new system of religion; men, in all ages, have been so much imposed on by ridiculous stories of that kind, that this very circumstance would be a full proof of a cheat, and sufficient, with all men of sense, not only to make them reject the fact, but even reject it without farther examination. Though the Being to whom the miracle is ascribed, be, in this case, Almighty, it does not, upon that account, become a whit more probable; since it is impossible for us to know the attributes or actions of such a Being, otherwise than from the experience which we have of his productions, in the usual course of nature. This still reduces us to past observation, and obliges us to compare the instances of the violation of truth in the testimony of men, with those of the violation of the laws of nature by miracles, in order to judge which of them is most likely and probable. As the violations of truth are more common in the testimony concerning religious miracles, than in that concerning any other matter of fact; this must diminish very much the authority of the former testimony, and make us form a general resolution, never to lend any attention to it, with whatever specious pretence it may be covered.

Lord Bacon seems to have embraced the same principles of reasoning. "We ought," says he, "to make a collection or particular history of all monsters and prodigious births or productions, and in a word of every thing new, rare, and extraordinary in nature. But this must be done with the most severe scrutiny, lest we depart from truth. Above all, every relation must be considered as suspicious, which depends in any degree upon religion, as the prodigies of Livy: And no less so, every thing that is to be found in the writers of natural magic or alchemy, or such authors, who seem, all of them, to have an unconquerable appetite for falsehood and fable."³

I am the better pleased with the method of reasoning here delivered, as I think it may serve to confound those dangerous friends or disguised enemies to the *Christian Religion*, who have undertaken to defend it by the principles of human reason. Our most holy religion is founded on *Faith*, not on reason; and it is a sure method of exposing it to put it to such a trial as it is, by no means, fitted to endure. To make this more evident, let us examine those miracles, related in scripture; and not to lose ourselves in too wide a

field, let us confine ourselves to such as we find in the *Pentateuch*, which we shall examine, according to the principles of these pretended Christians, not as the word or testimony of God himself, but as the production of a mere human writer and historian. Here then we are first to consider a book, *presented* to us by a barbarous and ignorant people, written in an age when they were still more barbarous, and in all probability long after the facts which it relates, corroborated by no concurring testimony, and resembling those fabulous accounts, which every nation gives of its origin. Upon reading this book, we find it full of prodigies and miracles. It gives an account of a state of the world and of human nature entirely different from the present: Of our fall from that state: Of the age of man, extended to near a thousand years: Of the destruction of the world by a deluge: Of the arbitrary choice of one people, as the favorites of heaven; and that people the countrymen of the author: Of their deliverance from bondage by prodigies the most astonishing imaginable: I desire any one to lay his hand upon his heart, and after a serious consideration declare, whether he thinks that the falsehood of such a book, supported by such a testimony, would be more extraordinary and miraculous than all the miracles it relates; which is, however, necessary to make it be received, according to the measures of probability above established.

NOTES

1. Hist. Lib. V. Cap. 8. Suetonius gives nearly the same account in *vita Vesp*.
2. Lucret.
3. Nov. Org. Lib. ii. aph. 29.

RICHARD
SWINBURNE

Miracles and Historical Evidence

Hume argues that the minimal, subjective evidence supporting the report of an allegedly miraculous event can never outweigh the widespread, objective evidence supporting the contention that it did not occur as reported. In the selection here, Richard Swinburne (1934–) challenges this argument, claiming that the objective evidence for such an event is not insignificant. Such evidence can be furnished by our own apparent memories, the testimony of others, the rele-

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vant physical traces, or some combination of these factors, and could in some cases outweigh the familiar and seemingly uncontrovertible counterevidence.



[I have claimed] that we could have good reason to suppose that event *E*, if it occurred, was a violation of a law of nature *L*. But could one have good evidence that such an event *E* occurred? At this point we must face the force of Hume's own argument. This, it will be remembered, runs as follows. The evidence, which *ex hypothesi* is good evidence, that *L* is a law of nature is evidence that *E* did not occur. We have certain other evidence that *E* did occur. In such circumstances, writes Hume, the wise man "weighs the opposite experiments. He considers which side is supported by the greater number of experiments." Since he supposes that the evidence that *E* occurred would be that of testimony, Hume concludes "that no testimony is sufficient to establish a miracle, unless the testimony be of such a kind, that its falsehood would be more miraculous, than the fact which it endeavors to establish."

We have four kinds of evidence about what happened at some past instant—our own apparent memories of our past experiences, the testimony of others about their past experiences, physical traces and our contemporary understanding of what things are physically impossible or improbable. (The fourth is only a corrective to the other three, not an independent source of detailed information.) A piece of evidence gives grounds for believing that some past event occurred, except in so far as it conflicts with other pieces of evidence. In so far as pieces of evidence conflict, they have to be weighed against each other. . . .

The fundamental idea involved in . . . weighing evidence seems to be to obtain as coherent a picture as possible of the past as consistent as possible with the evidence. We can express this idea in the form of one basic principle for assessing evidence and several subsidiary principles limiting its operation. The most basic principle is to accept as many pieces of evidence as possible. If one witness says one thing, and five witnesses say a different thing, then, in the absence of further evidence (e.g., about their unreliability) take the testimony of the latter. If one method of dating an artifact gives one result, and five methods give a different result, then, in the absence of further information accept the latter result.

The first subsidiary principle is—apart from any empirical evidence about their relative reliability—that evidence of different kinds ought to be given different weights. How this is to be done can only be illustrated by examples. Thus one's own apparent memory ought as such to count for more than the testimony of another witness (unless and until evidence of its relative unreliability is forthcoming). If I appear to remember having seen Jones yesterday in Hull, but Brown says that he had Jones under observation all day yesterday and that he went nowhere near to Hull, then—*ceteris paribus*—I ought to stand by my apparent memory. This is because when someone else

gives testimony it always makes sense to suppose that he is lying; whereas, when I report to myself what I appear to remember, I cannot be lying. For the liar is someone who says what he believes to be false. But if I report what I appear to remember (and I can *know* for certain what I appear to remember), I cannot be lying. Secondly, if I feel highly confident that I remember some event, my apparent memory ought to count for more than if I am only moderately confident. My apparent memory has a built-in weight, apart from empirical evidence which may be forthcoming about its reliability in different circumstances (e.g., that it is not reliable when I am drunk). In these and other ways for non-empirical reasons different pieces of evidence ought to be given different weights in assessing the balance of evidence.

The second subsidiary principle is that different pieces of evidence ought to be given different weights in accordance with any empirical evidence which may be available about their different reliability, obtained by a procedure which I may term narrowing the evidence class. In general we necessarily assume or have reason to believe that apparent memory, testimony and states of particular types are reliable evidence about past states and events. But clash of evidence casts doubt on this. So we test the reliability of a piece of evidence by classifying it as a member of a narrow class, and investigating the reliability of other members of that class which . . . would have to be classes whose members were described by projectible predicates. If the testimony of Jones conflicts with the testimony of Smith, then we must investigate not the worth of testimony in general, but the worth of Jones' testimony and of Smith's testimony. We do this by seeing if on all other occasions when we can ascertain what happened Jones or Smith correctly described what happened. In so far as each did, his testimony is reliable. Now this procedure will only work in so far as we can at some stage ascertain with sufficient certainty what happened without bringing in empirical evidence about the reliability of the evidence about what happened. Unless we could establish with sufficient certainty by mere balance of evidence what happened on a certain past occasion, without testing the worth of each piece of evidence by considering the worth of evidence of a narrow class to which it belongs, we could never establish anything at all. For the testing of evidence of one class can only be performed if we presuppose the reliability in general of other evidence. Thus, to test Jones' testimony we have to find out—by the testimony of others and traces—what happened on a number of occasions and then see whether Jones correctly reported this. But to do this we have to be able to ascertain what did happen on those occasions, and we will have various pieces of evidence as well as that of Jones about this. Unless the agreement of evidence apart from the testimony of Jones suffices to do this, we could never show Jones to be a reliable or unreliable witness. We may have empirical evidence about the reliability of such other evidence, but as such evidence will consist of more empirical evidence, we have to stop somewhere, with evidence which we can take to be reliable without empirical evidence thereof.

Similar tests to these tests of the reliability of testimony can be made of the reliability of traces, e.g., of methods of dating ancient documents.

For a given number of pieces of evidence in the class, the narrower the evidence class chosen for the assessment of the worth of a particular piece of evidence, the more reliable the assessment yielded by it. If we examine the worth of a particular piece of testimony given by a certain Soviet diplomat, Stamkovsky, to an official of M.I.5 by examining the worth of *n* pieces of testimony given by Soviet diplomats, then we have some knowledge of its worth, better than our knowledge of the worth of testimony in general. But we have a better assessment of its worth if we examine the worth of *n* pieces of testimony given by Stamkovsky and an even better estimate if we consider the worth of *n* pieces of testimony given by Stamkovsky to British counter-intelligence officers. But this raises a well-known difficulty about evidence classes—that the narrower the evidence class we choose, the fewer pieces of evidence we will have on which to base our assessment. We will have plenty of pieces of evidence by Soviet diplomats the reliability of which we can check, but few pieces of evidence given by Stamkovsky to British counter-intelligence agents the reliability of which we can check. The narrower the evidence class the better, but so long only as we have sufficient evidence to put in it to reach a well-substantiated conclusion.

The third subsidiary principle is not to reject coincident evidence (unless the evidence of its falsity is extremely strong) unless an explanation can be given of the coincidence; and the better substantiated is that explanation, the more justified the rejection of the coincident evidence. If five witnesses all say the same thing and we wish to reject their evidence, we are in general not justified in doing so unless we can explain why they all said the same thing. Such explanations could be that they were subject to common illusions, or all plotted together to give false testimony. The better substantiated is such an explanation the better justified is our rejection of the evidence. Substantiation of the theory of a common plot would be provided by evidence that the witnesses were all seen together before the event, that they stood to gain from giving false testimony, etc. But ultimately the evidence rests on evidence about particular past events and would itself need to be substantiated in ways earlier described.

These subsidiary principles, and perhaps others which I have not described, then qualify the basic principle of accepting the majority of the evidence. They are the standards of investigation adopted, I would claim, by and large by all historical investigators. . . .

Bearing in mind these considerations about conflicting evidence and these principles for assessing different ways of weighing evidence, what are we to say when there is a conflict between evidence of the first three kinds that an event *E* occurred and evidence of the fourth kind that an event of the type of *E* is physically impossible? Hume's official answer . . . was that exceedingly strong evidence of other kinds, in particular testimony, would be needed for evidence about physical impossibility to be outweighed. A more

extreme answer is given by Antony Flew in a passage in his *Hume's Philosophy of Belief*.

The justification for giving the "scientific" this ultimate precedence here over the "historical" lies in the nature of the propositions concerned and in the evidence which can be displayed to sustain them . . . the candidate historical proposition will be particular, often singular, and in the past tense. . . . But just by reason of this very pastness and particularity it is no longer possible for anyone to examine the subject directly for himself . . . the law of nature will, unlike the candidate historical proposition, be a general nomological. It can thus in theory, though obviously not always in practice, be tested at any time by any person.

Flew seems here to be taking the view that evidence of the fourth kind ("scientific" evidence) could never be outweighed by evidence of the first three kinds ("historical" evidence), an answer suggested also by Hume's detailed discussions of three purported miracles. Flew's justification for this view is that while a historical proposition concerns a past event of which we have only the present remains (viz. evidence of the first three kinds), the scientific proposition, being a general statement (viz. about all entities of some kind at all times and places), can go on and on being tested by any person who wishes to test it. Flew's suggestion seems to be that the historical proposition cannot go on and on being tested by any person at any time.

If this is Flew's contrast, it is mistaken. Particular experiments on particular occasions only give a certain and far from conclusive support to claims that a purported scientific law is true. Any person can test for the truth of a purported scientific law, but a positive result to one test will give only limited support to the claim. Exactly the same holds for purported historical truths. Anyone can examine the evidence, but a particular piece of evidence gives only limited support to the claim that the historical proposition is true. But in the historical as in the scientific case, there is no limit to the testing which we can do. We can go on and on testing for the truth of historical as of scientific propositions. True, the actual traces, apparent memories and testimony, which I may term the direct evidence, available to an inquirer are unlikely to increase in number, at any rate after a certain time. Only so many witnesses will have seen the event in question and once their testimony has been obtained no more will be available. Further, it is an unfortunate physical fact, as we have noted, that many traces dissipate. But although the number of pieces of direct evidence about what happened may not increase, more and more evidence can be obtained about the reliability of the evidence which we have. One could show the evidence yielded by traces of certain types, or testimony given by witnesses of such-and-such character in such-and-such circumstances was always correct. This indirect evidence could mount up in just the way in which the evidence of the physical impossibility of an event could mount up. Hence by his examining the reliability of the direct evidence, the truth of the "historical" proposition like the "scientific" can also "be tested at any time by any person."

But if Flew's justification of his principle is mistaken, what can we say positively for or against the principle itself? Now I would urge that it is an unreasonable principle since claims that some formula *L* is a law of nature, and claims that apparent memory, testimony or traces of certain types are to be relied on are claims established ultimately in a similar kind of way . . . and will be strong or weak for the same reasons, and so neither ought to take automatic preference over the other. To make the supposition that they are to be treated differently is to introduce a complicating *ad hoc* procedure for assessing evidence. As we have seen, formulae about how events succeed each other are shown to be laws of nature by the fact that they provide the most simple and coherent account of a large number of observed data. Likewise testimony given by certain kinds of people or traces of certain kinds are established as reliable by well-established correlations between present and past phenomena. (The reliability of apparent memory could also be assessed in the same way but we will ignore this for the moment, as important only for the few who claim to have observed miracles.) The reliability of C_{14} dating is established by showing that the postulated correlation between the proportion of C_{14} in artifacts and their age since manufacture clearly established by other methods holds of the large number of cases studied without exception and is the simplest correlation that does. That testimony given by Jones on oath is to be relied on is to be established by showing that whatever Jones said on oath is often by other methods shown to be true and never shown to be false, and there is no other simple account of the matter coherent with the data than that Jones tells the truth on oath (e.g., the account that in each of these cases he told the truth because he knew that a lie could be detected).

So then a claim that a formula *L* is a law of nature and a claim that testimony or trace of a certain type is reliable are established in basically the same way—by showing that certain formulae connect observed data in a simple coherent way. This being so, whether we take the evidence of an established law of nature that *E* did not occur or the evidence of trace or testimony that it did would seem to be a matter of the firmness with which the law, if reliable, forbids and the firmness with which the trace or testimony, if reliable, establishes the occurrence of *E*, and of the reliability of each. If the law is universal, it will firmly rule out an exception; if it is statistical, it will merely show an exception to be highly improbable. . . . Likewise traces or testimony may, in virtue of the correlation used, either show to be certain or show to be highly probable the event in question.

If the correlation between (e.g.) testimony of a certain kind of witness and the past event testified to is statistical (e.g. "witnesses of such and such a type are reliable in 99% cases") then it shows that the event in question (what the witness reported) having happened is highly probable. If the correlation is universal ("witnesses of such and such a type are invariably reliable") then it makes certain the occurrence of the event in question (viz. given the truth of the correlation, it is then certain that the event happened). So whether the evidence on balance supports or opposes the occurrence of *E* is firstly a matter of whether the law or correlation in question is universal or statistical in

form. It is secondly a matter of how well established the law or correlation is: a statistical law may have very strong evidence in its favor. The basic laws of quantum theory are statistical in form but the evidence in their favor is enormously strong. On the other hand, some universal laws are, though established, not very strongly established. Such are, for example, many of the generalizations of biology or anthropology. If L is a law, universal or statistical, to which the occurrence of E would be an exception, and T is a trace or piece of testimony of the occurrence of E , shown to be such by an established correlation C , whether the evidence on balance supports or opposes the occurrence of E is a matter of whether L and C are universal or statistical, and how well established respectively are L and C .

If C is universal and better established than L , then, surely, whether L is universal or statistical, the evidence on balance supports the occurrence of E ; whereas if L is universal and is better established than C , then, whether C is universal or merely statistical, the evidence is against the occurrence of E . If C and L are both statistical, and C is no less well established than L , and C renders the occurrence of E more probable than L renders it improbable, then the evidence on balance supports the occurrence of E . If C and L are both statistical, and L is no less well established than C , and L renders the occurrence of E more improbable than C renders it probable, then the evidence on balance is against the occurrence of E . What we are to say in other cases depends on whether we can measure quantitatively how well established are C and L and compare these figures with the probability and the improbability which they respectively ascribe to E . How well established or confirmed are L or C is a matter of how well they (or the scientific theory of which they are part) integrate a large number of data into a simple and coherent pattern. Whether one can measure and how to measure quantitatively this degree of confirmation of scientific laws and of generalizations are disputed issues. They are the subject of a branch of philosophy of science known as confirmation theory which has not yet yielded any results of the kind which we could apply to our concern.

In so far as we have several traces or pieces of testimony that E occurred, to that extent the evidence provided by traces and testimony will be very much the weightier. Suppose for example that we have traces or pieces of testimony T_1 and T_2 that E occurred, and that E if it occurred would be an exception to a universal law of nature L . T_1 is evidence that E occurred in virtue of a universal correlation C_1 , and T_2 is evidence that E occurred in virtue of a universal correlation C_2 . If L is true with no exceptions at all then E did not occur, but (given the existence of T_1 and T_2 if either C_1 or C_2 is true, then E did occur. It will be more likely that one of C_1 and C_2 is true than that C_1 true or that C_2 is true. Hence T_1 and T_2 together produce more evidence in favor of E having occurred than does just one of them. It is clearly in virtue of such considerations that the principle of coincident evidence, which I cited earlier, holds. This is the principle that we should not reject coincident evidence that an event E occurred unless the evidence that E did not occur is extremely strong or an explanation can be given of the coincidence. Evidence that E did

not occur would be extremely strong if L was very well supported and far better supported than any of the very few correlations $C_1 \dots C_n$ adduced as evidence of the reliability of traces of testimony $T_1 \dots T_n$ to occurrence of E . Evidence that the coincident evidence is susceptible of another explanation is evidence of further traces and testimony backed by other correlations $C_{n+1} \dots C_p$ that exceptional circumstances hold under which $T_1 \dots T_n$ are not evidence that E occurred. But in general we assume (because $T_1 \dots T_n$ being traces, it is highly likely) or have evidence that those circumstances do not hold.

It is not always easy to compare the strength of support for various proposed laws or correlations, let alone measure such strength quantitatively. But, as we have seen, laws and correlations are supported in a similar kind of way by instances. Hence it seems reasonable to suppose that in principle the degree of support for any correlation C or disjunction of correlations could exceed the degree of support for any law and hence render it more probable than not that the cited event E occurred. Flew's principle can only be saved if we suppose that support for the C 's and support for L are to be treated differently just because of the different role which the C 's and L play in supporting or opposing the occurrence of E . But this seems to be to make a complicating, *ad hoc* supposition. Flew's principle advocates treating evidence for generalizations in a different way from the way in which we ordinarily treat it, and is therefore for this reason to be rejected.

It must however be admitted that in general any one correlation C will be less well established than L , and since L will usually be a universal law, its evidence will in general be preferred to that of C . However, the more pieces of evidence there are that E occurred (e.g., The testimony of many independent witnesses), the more such evidence by its cumulative effect will tend to outweigh the counter-evidence of L . This accounts for our previous third subsidiary principle.

Although we do not yet have any exact laws about the reliability of testimony of different kinds, we have considerable empirical information which is not yet precisely formulated. We know that witnesses with axes to grind are less to be relied on than witnesses with no stake in that to which they testify; that primitive people whose upbringing conditions them to expect unusual events are more likely to report the occurrence of unusual events which do not occur than are modern atheists (perhaps too that modern atheists are more likely to deny the occurrence of unusual events which in fact occur in their environment than are primitive people); and so on.

I venture to suggest that generalizations of this kind about the reliability of testimony, although statistical in character, are extremely well established, perhaps better established than many laws of nature. However it must be added that while we can construct wide and narrow generalizations about the reliability of contemporary witnesses which are well confirmed, generalizations about the reliability of past witnesses will be more shaky, for we have less information about them and it is in practice often difficult to obtain more.

Now, although we are in no position yet (if ever we will be) to work out

numerically the degree or balance of support for a violation *E* of a law of nature *L* having taken place, since a priori objections have been overruled, we can surely cite examples where the combined testimony of many witnesses to such an event is in the light of the above considerations to be accepted.

One interesting such example is given by Hume himself:

Thus, suppose, all authors in all languages agree, that, from the first of January 1600, there was a total darkness over the whole earth for eight days: suppose that the tradition of this extraordinary event is still strong and lively among the people: that all travellers, who return from foreign countries, bring us accounts of the same tradition, without the least variation or contradiction: it is evidence, that our present philosophers, instead of doubting the fact, ought to receive it as certain, and ought to search for the causes whence it might be derived.

Hume unfortunately spoils this example by going on to suggest that such an event, although extraordinary, is not physically impossible, since

The decay, corruption, and dissolution of nature, is an event rendered probable by so many analogies, that any phenomenon, which seems to have a tendency towards that catastrophe, comes within the reach of human testimony, if that testimony be very extensive and uniform.

We with our knowledge of natural laws, in particular the laws of meteorology and the Earth's motion, would not judge the matter in this way, but would surely judge the event to be physically impossible. Indeed Hume originally introduced it as an example of "violations of the usual course of nature, of such a kind to admit proof from human testimony." (He allowed in theory, it will be remembered, that there could be such, "though, perhaps, it will be impossible to find any such in all the records of history.") The example is similar to many which might be artificially constructed in which the amount, diversity and detail of testimony to the occurrence of *E* surely suffices to overwhelm any information provided by science that *E* is physically impossible.

So I conclude that although standards for weighing evidence are not always clear, apparent memory, testimony and traces could sometimes outweigh the evidence of physical impossibility. It is just a question of how much evidence of the former kind we have and how reliable we can show it to have been. Hume's general point must be admitted, that we should accept the historical evidence, viz. a man's apparent memory, the testimony of others and traces, only if the falsity of the latter would be "more miraculous," i.e., more improbable "than the event *which* he relates." However, my whole discussion in this chapter has ignored "background evidence." In so far as there is substantial other evidence in favor of the existence of God, less would be required in the way of historical evidence in favor of the occurrence of a miracle than this chapter has supposed hitherto. If we have already good grounds for believing that there is a gorilla loose in snowy mountains, we re-

quire less by way of evidence of footprints to show that he has visited a particular place. Conversely, if there is substantial evidence against the existence of God, more is required in the way of historical evidence in favor of the occurrence of a miracle than this chapter has supposed—for we have then substantial evidence for supposing that nothing apart from laws of nature determines what happens.

J. L. MACKIE

Miracles and Testimony

In this selection, J. L. Mackie (1917–1981) presents an updated version of Hume's argument against miracles. Those who want to claim that a miracle has occurred, he argues, have a double burden: to establish that the event has occurred and that it has violated a natural law. He emphasizes that the attempt to establish both points simultaneously is quite problematic, since the stronger the evidence for believing that an event has actually violated a *natural law* the weaker the evidence for believing that this event actually occurred as reported.



What Hume [expounds in *Of Miracles*] are the principles for the rational acceptance of testimony, the rules that ought to govern our believing or not believing what we are told. But the rules that govern people's actual acceptance of testimony are very different. We are fairly good at detecting dishonesty, insincerity, and lack of conviction, and we readily reject what we are told by someone who betrays these defects. But we are strongly inclined simply to accept, without question, statements that are obviously assured and sincere. As Hume would say, a firm association of ideas links someone else's saying, with honest conviction, that *p*, and its being the case that *p*, and we pass automatically from the perception of the one to belief in the other. Or, as he might also have said, there is an intellectual sympathy by which we tend automatically to share what we find to be someone else's belief, analogous to sympathy in the original sense, the tendency to share what we see to be someone else's feelings. And in general this is a useful tendency. People's beliefs about ordinary matters are right, or nearly right, more often than they are wildly wrong, so that intellectual sympathy enables fairly correct information to be passed on more smoothly than it could be if we were habitually cautious and constantly checked testimony against the principles for its rational acceptance. But what is thus generally useful can sometimes be mis-

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leading, and miracle reports are a special case where we need to restrain our instinctive acceptance of honest statements, and go back to the basic rational principles which determine whether a statement is really reliable or not. Even where we are cautious, and hesitate to accept what we are told—for example by a witness in a legal case—we often do not go beyond the question “How intrinsically reliable is this witness?” or, in detail, “Does he seem to be honest? Does he have a motive for misleading us? Is he the sort of person who might tell plausible lies? Or is he the sort of person who, in the circumstances, might have made a mistake?” If we are satisfied on all these scores, we are inclined to believe what the witness says, without weighing very seriously the question “How intrinsically improbable is what he has told us?” But, as Hume insists, this further question is highly relevant. His general approach to the problem of when to accept testimony is certainly sound.

Hume’s case against miracles is an epistemological argument: it does not try to show that miracles never do happen or never could happen, but only that we never have good reasons for believing that they have happened. It must be clearly distinguished from the suggestion that the very concept of a miracle is incoherent. That suggestion might be spelled out as follows. A miracle is, by definition, a violation of a law of nature, and a law of nature is, by definition, a regularity—or the statement of a regularity—about what happens, about the way the world works; consequently, if some event actually occurs, no regularity which its occurrence infringes (or, no regularity-statement which it falsifies) can really be a law of nature; so this event, however unusual or surprising, cannot after all be a miracle. The two definitions together entail that whatever happens is not a miracle, that is, that miracles never happen. This, be it noted, is not Hume’s argument. If it were correct, it would make Hume’s argument unnecessary. Before we discuss Hume’s case, then, we should consider whether there is a coherent concept of a miracle which would not thus rule out the occurrence of miracles *a priori*.

If miracles are to serve their traditional function of giving spectacular support to religious claims—whether general theistic claims, or the authority of some specific religion or some particular sect or individual teacher—the concept must not be so weakened that anything at all unusual or remarkable counts as a miracle. We must keep in the definition the notion of a violation of natural law. But then, if it is to be even possible that a miracle should occur, we must modify the definition given above of a law of nature. What we want to do is to contrast the order of nature with a possible divine or supernatural intervention. The laws of nature, we must say, describe the ways in which the world—including, of course, human beings—works when left to itself, when not interfered with. A miracle occurs when the world is not left to itself, when something distinct from the natural order as a whole intrudes into it.

This notion of ways in which the world works is coherent and by no means obscure. We know how to discover causal laws, relying on a principle of the uniformity of the course of nature—essentially the assumption that there are some laws to be found—in conjunction with suitable observations and experiments, typically varieties of controlled experiment whose under-

lying logic is that of Mill’s “method of difference.” Within the laws so established, we can further mark off basic laws of working from derived laws which hold only in a particular context or contingently upon the way in which something is put together. It will be a derived law that a particular clock, or clocks of a particular sort, run at such a speed, and this will hold only in certain conditions of temperature, and so on; but this law will be derived from more basic ones which describe the regular behavior of certain kinds of material, in view of the way in which the clock is put together, and these more basic laws of materials may in turn be derived from yet more basic laws about sub-atomic particles, in view of the ways in which those materials are made up of such particles. In so far as we advance towards a knowledge of such a system of basic and derived laws, we are acquiring an understanding of ways in which the world works. As well as what we should ordinarily call causal laws, which typically concern interactions, there are similar laws with regard to the ways in which certain kinds of things simply persist through time, and certain sorts of continuous process just go on. These too, and in particular the more basic laws of these sorts, help to constitute the ways in which the world works. Thus there are several kinds of basic “laws of working.”¹ For our present purpose, however, it is not essential that we should even be approaching an understanding of how the world works; it is enough that we have the concept of such basic laws of working, that we know in principle what it would be to discover them. Once we have this concept, we have moved beyond the definition of laws of nature merely as (statements of) what always happens. We can see how, using this concept and using the assumption that there are some such basic laws of working to be found, we can hope to determine what the actual laws of working are by reference to a restricted range of experiments and observations. This opens up the possibility that we might determine that something is a basic law of working of natural objects, and yet also, independently, find that it was occasionally violated. An occasional violation does not in itself necessarily overthrow the independently established conclusion that this *is* a law of working.

Equally, there is no obscurity in the notion of intervention. Even in the natural world we have a clear understanding of how there can be for a time a closed system, in which everything that happens results from factors within that system in accordance with its laws of working, but how then something may intrude from outside it, bringing about changes that the system would not have produced of its own accord, so that things go on after this intrusion differently from how they would have gone on if the system had remained closed. All we need do, then, is to regard the whole natural world as being, for most of the time, such a closed system; we can then think of a supernatural intervention as something that intrudes into that system from outside the natural world as a whole.

If the laws by which the natural world works are deterministic, then the notion of a violation of them is quite clear-cut: such a violation would be an event which, given that the world was a closed system working in accordance with these laws, and given some actual earlier complete state of the

world, simply could not have happened at all. Its occurrence would then be clear proof that either the supposed laws were not the real laws of working, or the earlier state was not as it was supposed to have been, or else the system was not closed after all. But if the basic laws of working are statistical or probabilistic, the notion of a violation of them is less precise. If something happens which, given those statistical laws and some earlier complete state of the world, is extremely improbable—in the sense of physical probability: that is, something such that there is a strong propensity or tendency for it *not* to happen—we still cannot say firmly that the laws have been violated: laws of this sort explicitly allow that what is extremely improbable may occasionally come about. Indeed it is highly probable (both physically and epistemically) that some events, each of which is very improbable, will occur at rare intervals.² If tosses of a coin were governed by a statistical law that gave a 50 per cent propensity to heads at each toss, a continuous run of ten heads would be a highly improbable occurrence; but it would be highly probable that there would be some such runs in a sequence of a million tosses. Nevertheless, we can still use the contrast between the way of working of the natural world as a whole, considered as a normally closed system, and an intervention or intrusion into it. This contrast does not disappear or become unintelligible merely because we lack decisive tests for its application. We can still define a miracle as an event which would not have happened in the course of nature, and which came about only through a supernatural intrusion. The difficulty is merely that we cannot now say with certainty, simply by reference to the relevant laws and some antecedent situation, that a certain event would not have happened in the course of nature, and therefore must be such an intrusion. But we may still be able to say that it is very probable—and this is now an epistemic probability—that it would not have happened naturally, and so is likely to be such an intrusion. For if the laws made it physically improbable that it would come about, this tends to make it epistemically improbable that it did come about through those laws, if there is any other way in which it could have come about and which is not equally improbable or more improbable. In practice the difficulty mentioned is not much of an extra difficulty. For even where we believe there to be deterministic laws and an earlier situation which together would have made an occurrence actually impossible in the course of nature, it is from our point of view at best epistemically very probable, not certain, that those are the laws and that that was the relevant antecedent situation.

Consequently, whether the laws of nature are deterministic or statistical, we can give a coherent definition of a miracle as a supernatural intrusion into the normally closed system that works in accordance with those laws, and in either case we can identify conceivable occurrences, and alleged occurrences, which if they were to occur, or have occurred, could be believed with high probability, though not known with certainty, to satisfy that definition.

However, the full concept of a miracle requires that the intrusion should be purposive, that it should fulfil the intention of a god or other supernatural being. This connection cannot be sustained by any ordinary causal theory; it

presupposes a power to fulfil intentions directly, without physical means, which . . . is highly dubious; so this requirement for a miracle will be particularly hard to confirm. On the other hand it is worth noting that successful prophecy could be regarded as a form of miracle for which there could in principle be good evidence. If someone is reliably recorded as having prophesied at t_1 an event at t_2 which could not be predicted at t_1 on any natural grounds, and the event occurs at t_2 , then at any later time t_3 we can assess the evidence for the claims both that the prophecy was made at t_1 and that its accuracy cannot be explained either causally (for example, on the ground that it brought about its own fulfilment) or as accidental, and hence that it was probably miraculous.

There is, then, a coherent concept of miracles. Their possibility is not ruled out a priori, by definition. So we must consider whether Hume's argument shows that we never have good reason for believing that any have occurred.

Hume's general principle for the evaluation of testimony, that we have to weigh the unlikelyhood of the event reported against the unlikelyhood that the witness is mistaken or dishonest, is substantially correct. It is a corollary of the still more general principle of accepting whatever hypothesis gives the best overall explanation of all the available and relevant evidence. But some riders are necessary. First, the likelihood or unlikelyhood, the epistemic probability or improbability, is always relative to some body of information, and may change if additional information comes in. Consequently, any specific decision in accordance with Hume's principle must be provisional. Secondly, it is one thing to decide which of the rival hypotheses in the field at any time should be provisionally accepted in the light of the evidence then available; but it is quite another to estimate the weight of this evidence, to say how well supported this favored hypothesis is, and whether it is likely that its claims will be undermined either by additional information or by the suggesting of further alternative hypotheses. What is clearly the best-supported view of some matter at the moment may still be very insecure, and quite likely to be overthrown by some further considerations. For example, if a public opinion poll is the only evidence we have about the result of a coming election, this evidence may point, perhaps decisively, to one result rather than another; yet if the poll has reached only a small sample of the electorate, or if it was taken some time before the voting day, it will not be very reliable. There is a dimension of reliability over and above that of epistemic probability relative to the available evidence. Thirdly, Hume's description of what gives support to a prediction, or in general to a judgment about an unobserved case that would fall under some generalization, is very unsatisfactory. He seems to say that if *all* so far observed *As* have been *Bs*, then this amounts to a "proof" that some unobserved *A* will be (or is, or was), a *B*, whereas if some observed *As* have been *Bs*, but some have not, there is only a "probability" that an unobserved *A* will be a *B*.³ This mixes up the reasoning *to* a generalization with the reasoning *from* a generalization to a particular case. It is true that the premises "All *As* are *Bs*" and "This is an *A*" constitute a proof of the conclusion

"This is a *B*," whereas the premises "*x* percent of *As* are *Bs*" and "This is an *A*" yield—if there is no other relevant information—a probability of *x* percent that this is a *B*: they *probabilify* the conclusion to this degree, or, as we can say, the probability of the conclusion "This is a *B*" relative to that evidence is *x* percent. But the inductive argument from the observation "All so far observed *As* have been *Bs*" to the generalization "All *As* are *Bs*" is far from secure, and it would be most misleading to call this a proof, and therefore misleading also to describe as a proof the whole line of inference from "All so far observed *As* have been *Bs*" to the conclusion "This as yet unobserved *A* is a *B*." Similarly, the inductive argument from "*x* percent of observed *As* have been *Bs*" to the statistical generalization "*x* percent of *As* are *Bs*" is far from secure, so that we cannot say that "*x* percent of observed *As* have been *Bs*" even probabilifies to the degree *x* percent the conclusion "This as yet unobserved *A* is a *B*." A good deal of other information and background knowledge is needed, in either case, before the generalization, whether universal or statistical, is at all well supported, and hence before the stage is properly set for either proof or probabilification about an as yet unobserved *A*. It is harder than Hume allows here to arrive at well-supported generalizations of either sort about how the world works.

These various qualifications together entail that what has been widely and reasonably thought to be a law of nature may not be one, perhaps in ways that are highly relevant to some supposed miracles. Our present understanding of psychosomatic illness, for example, shows that it is not contrary to the laws of nature that someone who for years has seemed, to himself as well as to others, to be paralyzed should rapidly regain the use of his limbs. On the other hand, we can still be pretty confident that it is contrary to the laws of nature that a human being whose heart has stopped beating for forty-eight hours in ordinary circumstances—that is, without any special life-support systems—should come back to life, or that what is literally water should without addition or replacement turn into what is literally good-quality wine.

However, any problems there may be about establishing laws of nature are neutral between the parties to the present debate, Hume's followers and those who believe in miracles; for both these parties need the notion of a well-established law of nature. The miracle advocate needs it in order to be able to say that the alleged occurrence is a miracle, a violation of natural law by supernatural intervention, no less than Hume needs it for his argument against believing that this event has actually taken place.

It is therefore not enough for the defender of a miracle to cast doubt (as he well might) on the certainty of our knowledge of the law of nature that seems to have been violated. For he must himself say that this is a law of nature: otherwise the reported event will not be miraculous. That is, he must in effort *concede* to Hume that the antecedent improbability of this event is as high as it could be, hence that, apart from the testimony, we have the strongest possible grounds for believing that the alleged event did not occur. This event must, by the miracle advocate's own admission, be contrary to a

genuine, not merely a supposed, law of nature, and therefore maximally improbable. It is this maximal improbability that the weight of the testimony would have to overcome.

One further improvement is needed in Hume's theory of testimony. It is well known that the agreement of two (or more) *independent witnesses* constitutes very powerful evidence. Two independent witnesses are more than twice as good as each of them on his own. The reason for this is plain. If just one witness says that *p*, one explanation of this would be that it was the case that *p* and that he has observed this, remembered it, and is now making an honest report; but there are many alternative explanations, for example that he observed something else which he mistook for its being that *p*, or is misremembering what he observed, or is telling a lie. But if two witnesses who can be shown to be quite independent of one another both say that *p*, while again one explanation is that each of them has observed this and remembered it and is reporting honestly, the alternative explanations are not now so easy. They face the question "How has there come about this *agreement* in their reports, if it was not the case that *p*? How have the witnesses managed to misobserve to the same effect, or to misremember in the same way, or to hit upon the same lie?" It is difficult for even a single liar to keep on telling a *consistent* false story; it is much harder for two or more liars to do so. Of course if there is any collusion between the witnesses, or if either has been influenced, directly or indirectly, by the other, or if both stories have a common source, this question is easily answered. That is why the independence of the witnesses is so important. This principle of the improbability of coincident error has two vital bearings upon the problem of miracles. On the one hand, it means that a certain sort of testimony can be more powerful evidence than Hume's discussion would suggest. On the other, it means that where we seem to have a plurality of reports, it is essential to check carefully whether they really are independent of one another; the difficulty of meeting this requirement would be an important supplement to the points made in Part II of Hume's essay. Not only in remote and barbarous times, but also in recent ones, we are usually justified in suspecting that what look like distinct reports of a remarkable occurrence arise from different strands of a single tradition between which there has already been communication.

We can now put together the various parts of our argument. Where there is some plausible testimony about the occurrence of what would appear to be a miracle, those who accept this as a miracle have the double burden of showing both that the event took place and that it violated the laws of nature. But it will be very hard to sustain this double burden. For whatever tends to show that it would have been a violation of natural law tends for that very reason to make it most unlikely that it actually happened. Correspondingly, those who deny the occurrence of a miracle have two alternative lines of defense. One is to say that the event may have occurred, but in accordance with the laws of nature. Perhaps there were unknown circumstances that made it possible; or perhaps what were thought to be the relevant laws of nature are not strictly laws; there may be as yet unknown kinds of natural causation

through which this event might have come about. The other is to say that this event would indeed have violated natural law, but that for this very reason there is a very strong presumption against its having happened, which it is most unlikely that any testimony will be able to outweigh. Usually one of these defenses will be stronger than the other. For many supposedly miraculous cures, the former will be quite a likely sort of explanation, but for such feats as the bringing back to life of those who are really dead the latter will be more likely. But the *fork*, the disjunction of these two sorts of explanation, is as a whole a very powerful reply to any claim that a miracle has been performed.

However, we should distinguish two different contexts in which an alleged miracle might be discussed. One possible context would be where the parties in debate already both accept some general theistic doctrines, and the point at issue is whether a miracle has occurred which would enhance the authority of a specific sect or teacher. In this context supernatural intervention, though *prima facie* unlikely on any particular occasion, is, generally speaking, on the cards: it is not altogether outside the range of reasonable expectation for these parties. Since they agree that there is an omnipotent deity, or at any rate one or more powerful supernatural beings, they cannot find it absurd to suppose that such a being will occasionally interfere with the course of nature, and this *may* be one of these occasions. For example, if one were already a theist and a Christian, it would not be unreasonable to weigh seriously the evidence of alleged miracles as some indication whether the Jansenists or the Jesuits enjoyed more of the favor of the Almighty. But it is a very different matter if the context is that of fundamental debate about the truth of theism itself. Here one party to the debate is initially at least agnostic, and does not yet concede that there is a supernatural power at all. From this point of view the intrinsic improbability of a genuine miracle, as defined above, is very great, and one or other of the alternative explanations in our fork will always be much more likely—that is, either that the alleged event is not miraculous, or that it did not occur, that the testimony is faulty in some way.

This entails that it is pretty well impossible that reported miracles should provide a worthwhile argument for theism addressed to those who are initially inclined to atheism or even to agnosticism. Such reports can form no significant part of what, following Aquinas, we might call a *Summa contra Gentiles*, or what, following Descartes, we could describe as being addressed to infidels. Not only are such reports unable to carry any rational conviction on their own, but also they are unable even to contribute independently to the kind of accumulation or battery of arguments referred to in the Introduction. To this extent Hume is right, despite the inaccuracies we have found in his statement of the case.

One further point may be worth making. Occurrences are sometimes claimed to be literally, and not merely metaphorically, miracles, that is, to be genuine supernatural interventions into the natural order, which are not even *prima facie* violations of natural law, but at most rather unusual and unex-

pected, but very welcome. Thus the combination of weather conditions which facilitated the escape of the British Army from Dunkirk in 1940, making the Luftwaffe less than usually effective but making it easy for ships of all sizes to cross the Channel, is sometimes called a miracle. However, even if we accepted theism, and could plausibly assume that a benevolent deity would have favored the British rather than the Germans in 1940, this explanation would still be far less probable than that which treats it as a mere meteorological coincidence: such weather conditions can occur in the ordinary course of events. Here, even in the context of a debate among those who already accept theistic doctrines, the interpretation of the event as a miracle is much weaker than the rival natural explanation. *A fortiori*, instances of this sort are utterly without force in the context of fundamental debate about theism itself.

There is, however, a possibility which Hume's argument seems to ignore—though, as we shall see, he did not completely ignore it. The argument has been directed against the acceptance of miracles on testimony; but what, it may be objected, if one is not reduced to reliance on testimony, but has observed a miracle for oneself? Surprisingly, perhaps, this possibility does not make very much difference. The first of the above-mentioned lines of defense is still available: maybe the unexpected event that one has oneself observed did indeed occur, but in accordance with the laws of nature. Either the relevant circumstances or the operative laws were not what one had supposed them to be. But at least a part of the other line of defense is also available. Though one is not now relying literally on another witness or other witnesses, we speak not inappropriately of the evidence of our senses, and what one takes to be an observation of one's own is open to questions of the same sort as is the report of some other person. I may have misobserved what took place, as anyone knows who has ever been fooled by a conjurer or "magician," and, though this is somewhat less likely, I may be misremembering or deceiving myself after an interval of time. And of course, the corroboration of one or more independent witnesses would bring in again the testimony of others which it was the point of this objection to do without. Nevertheless, anyone who is fortunate enough to have carefully observed and carefully recorded, for himself, an apparently miraculous occurrence is no doubt rationally justified in taking it very seriously; but even here it will be in order to entertain the possibility of an alternative natural explanation.

As I said, Hume does not completely ignore this possibility. The Christian religion, he says, cannot at this day be believed by any reasonable person without a miracle. "Mere reason is insufficient to convince us of its veracity: And whoever is moved by *Faith* to assent to it, is conscious of a continued miracle in his own person, which subverts all the principles of his understanding."⁴ But of course this is only a joke. What the believer is conscious of in his own person, though it may be a mode of thinking that goes against "custom and experience," and so is contrary to the ordinary rational principles of the understanding, is not, as an occurrence, a violation of natural law. Rather it is all too easy to explain immediately by the automatic communica-

tion of beliefs between persons and the familiar psychological processes of wish fulfilment, and ultimately by what Hume himself was later to call "the natural history of religion."

NOTES

1. The notion of basic laws of working is fully discussed in chaps. 8 and 9 of my *The Cement of the Universe: A Study of Causation* (Oxford: Oxford University Press, 1974 and 1980).
2. The distinction between physical and epistemic probability has been drawn in my Introduction; the exact form of statistical laws is discussed in chap. 9 of *The Cement of the Universe*.
3. David Hume, "Of Miracles," reprinted in *Miracles* (New York: Macmillan Publishing House, 1989), pp. 24–26.
4. Hume, "Of Miracles," p. 40.

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