

Marvelous Facts and Miraculous Evidence in Early Modern Europe

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Introduction: Facts versus Evidence

According to a commonplace view, facts are evidence *in potentia*: mustered in an argument, deduced from a theory, or simply arranged in a pattern, they shed their proverbial obstinacy and help with the work of proof and disproof. However, in modern usage facts and evidence are nonetheless distinct categories, and crucially so. On their own, facts are notoriously inert—"angular," "stubborn," or even "nasty" in their resistance to interpretation and inference. They are robust in their existence and opaque in their meaning. Only when enlisted in the service of a claim or a conjecture do they become evidence, or facts with significance. Evidence might be described as facts hammered into signposts, which point beyond themselves and their sheer, brute thingness to states of affairs to which we have no direct access: the clues pertaining to a crime committed without witnesses, the observations testing a theory about the true configuration of the solar system or the workings of the mind, the ruins of a civilization that vanished millennia ago, the indices that predict the future.

On this view, facts owe no permanent allegiance to any of the schemes into which they are impressed as evidence. They are the mercenary soldiers of argument, ready to enlist in yours or mine, wherever the evidentiary fit is best. It is exactly this fickle independence that makes

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them so valuable to a certain view of rationality, one that insists upon the neutrality of facts and staunchly denies that they are “theory-laden.” Were facts to be frozen into any one evidentiary scheme, fixed signposts forever pointing in the direction of a single conjecture, they would lose their power to arbitrate between rival arguments or theories.

Implicit in this conventional distinction between facts and evidence is that in order for facts to qualify as credible evidence, they must appear innocent of human intention. Facts fabricated as evidence, that is, to make a particular point, are thereby disqualified as evidence. Nature’s facts are above suspicion, because presumed free of any intention, but many man-made facts also qualify: the blood-stained weapon found at the scene of a murder counts as incriminating evidence as long as it was not planted there with the intention of incriminating; the unaffected simplicity of the witness adds weight to testimony as long as it was not feigned with the intention of persuading. Similarly, many methodological precautions in contemporary science, such as the double-blind clinical trial and the fixing of statistical significance levels before the experiment, were instituted to thwart the intention, however unconscious, to confirm a pet hypothesis. Note that the planted weapon, the affected testimony, the skewed empirical results lose neither their status as facts nor their potential to serve as evidence for conjectures *other* than those intended: so long as they do not point in the intended direction, these fabricated facts can be made to point somewhere else with no loss of evidentiary force. It is the distinction between facts and evidence that is at issue, not the reality of the facts *per se*, nor their quality as evidence in general.

I have sketched the well-known distinction between facts and evidence not to defend or attack it (as does a vast literature in the history and philosophy of science), but rather as a preface to a key episode in the history of the conceptual categories of fact and evidence. My question is neither, “Do neutral facts exist?” nor “How does evidence prove or disprove?” but rather, “How did our current conceptions of neutral facts and enlisted evidence, and the distinction between them, come to be?” How did evidence come to be incompatible with intention, and is it possible to imagine a kind of evidence that is intention-laden?

It is my claim that partial answers to these questions lie buried in the sixteenth- and seventeenth-century literature on prodigies and miracles. I shall argue that during this period prodigies briefly became the proto-

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type for a new kind of scientific fact, and that miracles briefly exemplified a form of evidence patent to the senses and crucially dependent on intention. Both conceptions diverge sharply not only from current notions of facts and evidence, but also from medieval views on the nature of prodigies and miracles. Prodigies were originally closely akin to portents, divine signs revealing God's will and things to come; miracles were more intimately associated with the private experience of grace than with the public evidence of the senses. Prodigies were transformed from signs into nonsignifying facts, and miracles into compelling evidence, as part of more sweeping changes in natural philosophy and theology in the mid-seventeenth century.

My account of both transformations and the context in which they occurred is divided into five parts. I first outline the patristic and medieval distinctions between marvels and miracles, and the related distinctions between natural, preternatural, and supernatural causation. Part 2 traces the gradual naturalization of the preternatural in the early modern period. I then examine in part 3 how prodigies and portents became the first neutral facts in the reformed natural philosophy of the mid-seventeenth century, losing all status as signs. In part 4, I turn to controversies over the definition and meaning of miracles both in Protestant England and Catholic France in the latter half of the seventeenth century, arguing that for some theologians, miracles briefly became "pure" evidence, requiring neither interpretation nor further corroboration. In the fifth, concluding part, I show how the debate over the evidence of miracles became a debate over the evidence for miracles in the early eighteenth century.

1. *Natural, Preternatural, and Supernatural*

In the early sixteenth century the received views on miracles, marvels, and their relationship to the natural order still derived principally from the teachings of Augustine, and, especially, from those of Thomas Aquinas. These authorities were sometimes difficult to square with one another. Augustine praised all of nature as a miracle, and complained that familiarity with such marvels as the individuality of each and every human being had unduly blunted our sense of wonder. Since nature was simply the will of God realized, it made no sense to speak of miracles as *contra naturam*: "For how can anything done by the will of God be contrary to nature, when the will of so great a creator constitutes the nature of each created thing?"¹ Marvels shaded into miracles without a sharp break for Augustine, for both testified to how far the power of God exceeded that of

1. Augustine, *De civitate Dei*, trans. W. M. Green, 7 vols. (Cambridge, Mass., 1972), 7:51.

human understanding. This is why Augustine parried the objections of pagan philosophers to Christian miracles like the resurrection by listing natural wonders—the wood of a certain Egyptian fig tree that sinks rather than floats, the Persian stone that waxes and wanes with the moon, the incorruptible flesh of the dead peacock—that also defied explanation: “Now let those unbelievers who refuse to accept the divine writings give an explanation of these marvels, if they can.”² However, certain events deserved to be singled out from the perpetual wonder of nature as true miracles because of the message they bore. The miracles of the early Christian church were of this sort, consolidating faith and unity by a wave of conversions, and, at least in later life, Augustine was also willing to credit miraculous cures performed by saintly relics and also those performed on behalf of his side of the Donatist controversy as serving the same special ends.³

Aquinas treated miracles within an Aristotelian framework that made nature considerably more orderly and autonomous than Augustine’s profusion of marvels, ordinary and extraordinary, had allowed. Dividing causes into a higher and lower order, Aquinas contended that God’s miracles transgressed only those of the lower order, which exist by God’s will, not by necessity.⁴ Miracles are of three kinds, and each kind admits of degrees, depending on how far the ordinary powers of nature are surpassed: miracles of substance [*miracula quoad substantiam*] overcome an absolute impossibility in nature (for example, two bodies in the same place at the same time); miracles of subject [*miracula quoad subjectum*] accomplish what nature can do, but not in that body (for example, speech in a cat); miracles of mode [*miracula quoad modum*] accomplish what nature can do in that subject, but not by those means (for example, a sudden cure effected by a holy relic).⁵

Yet according to Aquinas we recognize miracles by their subjective effect on us rather than by their objective causes:

The word miracle is derived from admiration, which arises when an effect is manifest, whereas its cause is hidden. . . . Now the cause of a manifest effect may be known to one, but unknown to others. . . . as an eclipse is to a rustic, but not to an astronomer. Now a miracle is so called as being full of wonder; as having a cause absolutely hidden from all: and this cause is God. Wherefore those things which God does outside those causes which we know, are called miracles.⁶

2. *Ibid.*, 7:29.

3. See Peter Brown, *Augustine of Hippo: A Biography* (Berkeley, 1967), pp. 413–18.

4. See Thomas Aquinas, *Summa theologica*, trans. Fathers of the English Dominican Province, 3 vols. (New York, 1947), 1: 520.

5. See Aquinas, *Summa contra gentiles*, trans. English Dominican Fathers, 4 vols. (London, 1928), vol. 3, pt. 2, pp. 60–61.

6. Aquinas, *Summa theologica*, 1:520.

God performs miracles for an audience, which credits them in proportion to the wonder they excite, which wonder in turn measures the magnitude of the audience's ignorance. Miracles convert and convince by their psychological effects; they are God's oratory.

Like Augustine, Aquinas often blurred the boundary between the marvelous and the miraculous, albeit for different reasons. For Augustine, especially in his earlier writings, there existed in principle no sharp distinction between the marvelous and the miraculous (and for that matter, the natural as well), for all sprang directly from God. Augustine was largely unconcerned with how God brings about these effects, much less with orders of causation.

Aquinas, in contrast, drew a principled distinction between the truly supernatural (God's unmediated actions) on the one hand, and the natural (what happens always or most of the time) and the preternatural (what happens rarely, but nonetheless by the agency of created beings), on the other. Marvels belong, properly speaking, to the realm of the preternatural:

For the order imposed on things by God is in keeping with that which is wont to occur in things for the most part, but it is not everywhere in keeping with what always occurs: because many natural causes produce their effects in the same way usually, but not always; since sometimes, though seldom, it happens otherwise, whether on account of a defect in the power of an agent, or through the indisposition of the matter, or by reason of a stronger agency: as when nature produces a sixth finger in a man.⁷

Not only unaided nature, but created spirits such as angels and demons can produce preternatural effects, although these fall short of true miracles on ontological grounds: spirits must work "through the local movement of a body," for God alone can "induce any form into corporeal matter, as though matter were in this obedient thereto." However, we humans are hard put to separate the supernatural wheat from the preternatural chaff, for both excite wonder when we are ignorant of the causes, and wonder is the hallmark of the miraculous.⁸

As one might expect in a body of beliefs discussed and elaborated over a millennium, medieval views on the relationships between the natural, preternatural, and supernatural were by no means monolithic, and it is possible to find many variants on and exceptions to both the Augustinian and Thomist views, not to mention tensions between the two. The medieval Christian doctrine of miracles was further complicated by the heterogeneity of the category: not only scriptural miracles, but also the

7. Aquinas, *Summa contra gentiles*, vol. 3, pt. 2, p. 57.

8. *Ibid.*, vol. 3, pt. 2, pp. 65–66.

miracles of saints and their shrines and relics, the miracles of the sacraments, the miracles of judicial ordeals (at least until their abolition by the fourth Lateran Council in 1215), the historical miracles recounted by the chronicles, and the “jocular” miracles inserted in sermons all had to be subsumed therein, and the conceptual integrity of the category suffered accordingly.⁹

Nonetheless, the general outlines of the doctrine as it crystallized in the thirteenth and fourteenth centuries can be discerned with some clarity. First, there was a tendency, always present among theologians and increasingly pronounced after the Aristotelian synthesis of the thirteenth century, to segregate the natural and the preternatural from the supernatural, having recourse to the latter only as a last resort. Second, although theologians followed Aquinas in principle by defining miracles by the abrogation of the lower order of causes, they also followed him in practice by making universal wonderment the actual criterion. Third, despite the ensuing practical difficulties of distinguishing between the preternatural marvel and the supernatural miracle, theologians nonetheless continued to insist on the theoretical distinction between the two.

This distinction was fortified in the sixteenth century, when the preternatural came to be ever more closely associated with the dubious and possibly demonic activities of magic and divination.¹⁰ Because of these demonic associations some historians have assumed that medieval theologians deemed theurgy to be supernatural, but this does not do justice to the nicety of the conceptual distinctions that reserved the supernatural for God alone. Although demons, astral intelligences, and other spirits might manipulate natural causes with superhuman dexterity and thereby work marvels, as mere creatures they could never transcend from the preternatural to the supernatural and work genuine miracles. Well into the seventeenth century and beyond, sober thinkers warned against the counterfeit miracles of Satan, who “being a natural Magician . . . may perform many acts in ways above our knowledge, though not transcending our natural power.”¹¹

9. On shrines and relics, see Jonathan Sumption, *Pilgrimage: An Image of Mediaeval Religion* (London, 1975), pp. 22–44. On the trial by ordeal, see Robert Bartlett, *Trial by Fire and Water: The Medieval Judicial Ordeal* (Oxford, 1986). On sacramental and jocular miracles, see Benedicta Ward, *Miracles and the Medieval Mind: Theory, Records, and Event, 1000–1215* (Philadelphia, 1982), pp. 13, 213. For a general survey of theological views on miracles, see Bernhard Bron, *Das Wunder: Das theologische Wunderverständnis im Horizont des neuzeitlichen Natur und Geschichtsbegriffs* (Göttingen, 1975).

10. See Jean Céard, *La Nature et les prodiges: L'Insolite au XVI^e siècle, en France* (Geneva, 1977), pp. 111–15.

11. Thomas Browne, *Pseudodoxia Epidemica*, in *The Works of Sir Thomas Browne*, ed. Charles Sayle, 3 vols. (Edinburgh, 1912), 1:188. See William Fleetwood, *An Essay upon Miracles*, 2d ed. (London, 1702), p. 108; hereafter abbreviated *EM*; and Joseph Glanvill, *Sadducismus Triumphatus: Or, A full and plain Evidence, Concerning Witches and Apparitions* (London, 1682), p. 52; hereafter abbreviated *ST*.

Theology cemented the barrier between the preternatural and the supernatural; scholastic natural philosophy erected a similar barrier between the preternatural and the natural. The natural order itself was a matter of nature's habitual custom rather than of nature's inviolable law, what usually rather than what infallibly happened.¹² Although *scientia* properly so called dealt in demonstration and therefore in what must be the case, it did not pretend to be comprehensive. There were pockets of experience that defied necessity, and therefore scientific treatment. Magnetism, the virtue of coral to ward off lightning, the antipathy between elephant and dragon—few doubted the existence of such phenomena, but because their occult (that is, "hidden") causes were inaccessible to sense and reason, they formed no part of natural philosophy.¹³

Indeed, particulars and a fortiori singularities of all kinds, whether ascribed to occult causes or to chance, were not readily susceptible to scientific explanation, which trafficked in universals and regularities: Aquinas thought the study of singulars in ethics, alchemy, and medicine might at best approximate but never attain scientific certitude.¹⁴ Thus even strange or singular phenomena without the slightest whiff of the demonic were effectively excluded from the natural, by dint of being excluded from natural philosophy. Although preternatural phenomena were in theory difficult to distinguish from natural events (since they belonged to the same, lower order of causation), and in practice difficult to distinguish from supernatural events (since they evoked the same astonishment and wonder), they nonetheless constituted a third ontological domain until the late seventeenth century.

It might be argued that the inherent conceptual instability of the category of preternatural phenomena predestined it for collapse into the sturdier categories of the natural and supernatural. However, the preternatural was very long in meeting its doom, not only resisting attempts to absorb it into the natural and into the supernatural, but also expanding in extent and intellectual importance throughout the sixteenth century. Fifty years before its demise around the turn of the eighteenth century, the preternatural preoccupied theologians and natural philosophers more urgently than ever before.

The early modern vogue for the preternatural arose from a confluence of circumstances: Marsilio Ficino's revival of magic, both natural and demonic, imbued scholarly Neoplatonism with a strong affinity for the

12. On the medieval notion of "natural," see Bert Hansen, *Nicole Oresme and the Marvels of Nature: The "De causis mirabilium"* (Toronto, 1985), p. 64.

13. On occult causes, see Keith Hutchison, "What Happened to Occult Qualities in the Scientific Revolution?" *Isis* 73 (June 1982): 233–53.

14. See Eileen Serene, "Demonstrative Science," in *The Cambridge History of Later Medieval Philosophy: From the Rediscovery of Aristotle to the Disintegration of Scholasticism, 1100–1600*, ed. Norman Kretzmann, Anthony Kenny, and Jan Pinborg (Cambridge, 1982), p. 506n.

occult;¹⁵ the new printing centers north and south of the Alps spewed out edition after edition of books of secrets retailing household recipes, virtues of herbs and stones, tricks of the trades, and “natural magic”;¹⁶ the witchcraft trials concentrated theological and legal attention on the precise nature of demonic meddling in human affairs;¹⁷ the voyages of exploration brought back tales and trophies of creatures and landscapes more marvelous than anything in Pliny or Mandeville;¹⁸ the religious and political upheavals set in motion by the Reformation also triggered an avalanche of crude broadsides and learned Latin treatises that anxiously interpreted comets, monstrous births, rains of blood, and any number of other strange phenomena as portents.¹⁹ Although portents were the very prototype of signifying events, spectacular and unsettling messages sent by God to herald triumph or catastrophe, it was this last category of portents and prodigies that ultimately supplied reforming natural philosophers of the seventeenth century with a new kind of fact that signified nothing at all.

2. *The Naturalization of the Preternatural*

Not all preternatural events qualified as portents or prodigies. Medieval chroniclers enlivened their accounts with comets, earthquakes, monstrous births, and the like, and often, but not always, speculated on their significance. For example, Gerald of Wales in his *Topographia hibernia* (ca. 1185) allows that some strange events may be portents, such as a large fish with three gold teeth caught two years before the arrival of the English, which might “prefigure the imminent conquest of the country,” but he records many others—a ship-swallowing whirlpool, a Limerick woman with a beard and a mane—without interpretation.²⁰

The difficulty in interpreting preternatural events as divine signs was twofold: first, their ambiguous status between natural and supernatural;

15. See D. P. Walker, *Spiritual and Demonic Magic: From Ficino to Campanella* (Notre Dame, Ind., 1975).

16. See William Eamon, “Arcana Disclosed: The Advent of Printing, the Books of Secrets Tradition and the Development of Experimental Science in the Sixteenth Century,” *History of Science* 22 (June 1984): 111–50.

17. See Stuart Clark, “The Scientific Status of Demonology,” in *Occult and Scientific Mentalities in the Renaissance*, ed. Brian Vickers (Cambridge, 1984), pp. 351–74.

18. See Mary B. Campbell, *The Witness and the Other World: Exotic European Travel Writing, 400–1600* (Ithaca, N. Y., 1988).

19. See Katharine Park and Lorraine Daston, “Unnatural Conceptions: The Study of Monsters in Sixteenth- and Seventeenth-Century France and England,” *Past and Present* 92 (Aug. 1981): 20–54.

20. Gerald of Wales, *The History and Topography of Ireland*, trans. John J. O’Meara (Harmondsworth, 1982), p. 65. On Gerald’s treatment of marvels and miracles, see Bartlett, *Gerald of Wales, 1146–1223* (Oxford, 1982).

and second, theological distrust of divination as most likely demonic. Although *bona fide* miracles were always missives from God—signs of divine power, intent, approval or disapproval—establishing their *bona fides* was in practice a delicate matter of balancing theological context against admittedly incomplete natural knowledge. This balancing act became increasingly precarious in the early modern period, when heterodox sects, reformed natural philosophy, and fear of demonic deception forced a reexamination of the definition and function of miracles.

Both context and the possibility²¹ of a natural explanation determined which preternatural events counted as signs: in a time of plague, war, or religious schism, the two-headed cat or shooting star that might have otherwise aroused only mild interest as a wonder provoked anxious interpretations as a portent. The interpretations of portents also teetered dangerously close to divination, which (except for predictions based on natural signs—for example, a red sky in the morning presages a storm at sea) was regularly and emphatically condemned from the twelfth century on by the Catholic church as a usurpation of God's prerogative to foretell the future. Prodigies were in principle exempt from the ban on divination, as were visitations from God, angels, or saints in dreams, but in practice the distinction was difficult to maintain.²²

In the latter half of the sixteenth century religious and political turmoil combined with an intense intellectual interest in the preternatural, first, to magnify the portentous associations of strange events and, second, to provoke ever more concerted attempts to distinguish genuine (that is, divine) portents from demonic counterfeits and superstitious divination. (That portents never fully merged with miracles can be seen by the lively interest that Protestant theologians took in their interpretation, however firmly they insisted that miracles *per se* had ceased after the early Church.)²³ In general, the former trend was fed by the popular press,

21. It is possibility in principle, not the actual availability of a natural explanation that counted here. Nicole Oresme's attempts to "show the causes of some effects which seem to be marvels and to show that the effects occur naturally" (Hansen, *Nicole Oresme and the Marvels of Nature*, p. 137) almost never provide a specific explanation of an individual case; indeed, Oresme despaired of ever being able to provide such explanations: see, for example, his denial that monstrous births are portents (p. 247); also see p. 227 concerning explanations of individual cases. This kind of promissory naturalism, based more on metaphysical faith than scientific competence, remained typical of attempts to naturalize marvels and miracles well into the eighteenth century. See, for example, [John Toland], *Hodegus; proving the pillar of fire, that guided the Israelites in the wilderness, not miraculous, but ambulatory beacons* (London, 1753), and Conyers Middleton, *A Vindication of the Free inquiry into the miraculous powers, which are supposed to have subsisted in the Christian church & c. from the objections of Dr. Dodwell and Dr. Church* (London, 1751).

22. On the importance of signs and divination in sixteenth-century learned culture, see Céard, *La Nature et les prodiges*.

23. See, for example, Calvin's cautious declaration that "cependant je ne nie pas, lorsque Dieu veut estendre sa main pour faire quelque jugement digne de memoire au monde,

broadsides, and vernacular tracts, and the latter was sustained by more scholarly writings, although there was some crossover.²⁴ This distinction in audiences was to play an important role in late seventeenth-century attempts to discredit the ominous significance of portents, and, ultimately, to belittle the importance of miracles.

In the late sixteenth century, however, scholars like Jean Bodin, hack writers like Pierre Boaistuau, and the composers of broadside ballads saw eye-to-eye on the proliferation and meaning of portents in general, even if they differed in their interpretations of specific cases. Bodin took Aristotle to task for claiming that nothing was truly unnatural: "For as to monsters and signs, which occur out of the order of nature [*outré l'ordre de nature*], one cannot deny that they carry some signification of the wrath of God, which he gives to men to make them repent and convert to Him."²⁵ Boaistuau and the several other authors of the enormously popular *Histoires prodigieuses* (1567) argued that God sometimes sent "signs and prodigies, which are most often the heralds, trumpets, and advance couriers of justice."²⁶ Stephen Batman advertised his 1581 compendium of "the strange Prodigies hapned in the Worlde" with the promise to reveal "divers secrete figures of Revelations tending to mannes stayed conversion towards God";²⁷ countless broadsides preached, in the words of a 1619 broadside printed in Augsburg on the occasion of a comet, that: "War and blood are in the door/Hunger and rising prices draw near/Pestilence hovers in the air/This we have earned by great sin and our godless living."²⁸ Strange events—monstrous births, oddly shaped fish and animals, apparitions of armies in the clouds, rains of iron and blood, bleeding grape vines, comets, flood tides, swarms of insects and vermin—all became grist for the interpreter's mill, and were as often as not pressed

qu'il ne nous advertise quelquesfois par les cometes: mais cela ne sert de rien, pour attacher les hommes et leur condition à une influence perpetuelle du ciel" ["however, I do not deny that when God wants to extend his hand to make some judgment worthy of the memory of the world, that he sometimes advertises (it) to us by comets: but that in no way serves to attach men and their condition to a perpetual influence of the heavens"] (quoted in *ibid.*, p. 130).

24. See Park and Daston, "Unnatural Conceptions," concerning mutual learned/popular borrowing.

25. Jean Bodin, *De la démonomanie des sorciers* (1580; Hildesheim, 1988), fol. 48, r/v.

26. Pierre Boaistuau, *Histoires prodigieuses* (Paris, 1567), p. 5. For a full account of the various volumes of the *Histoires prodigieuses* and their publishing history, see Céard, *La Nature et les prodiges*, chap. 13.

27. Stephen Batman, *The Doome warning all men to the Judgemente. Wherein are contayned for the most parte all the straunge Prodigies hapned in the Worlde, with divers secrete figures of Revelations tending to mannes stayed conversion towards God* (London, 1581).

28. *Wahrhafte Neue Zeitung von dem neuen Cometstern . . . welcher zu Augspurg und in vilen Landen ist gesehen worden* (Augsburg, 1619).

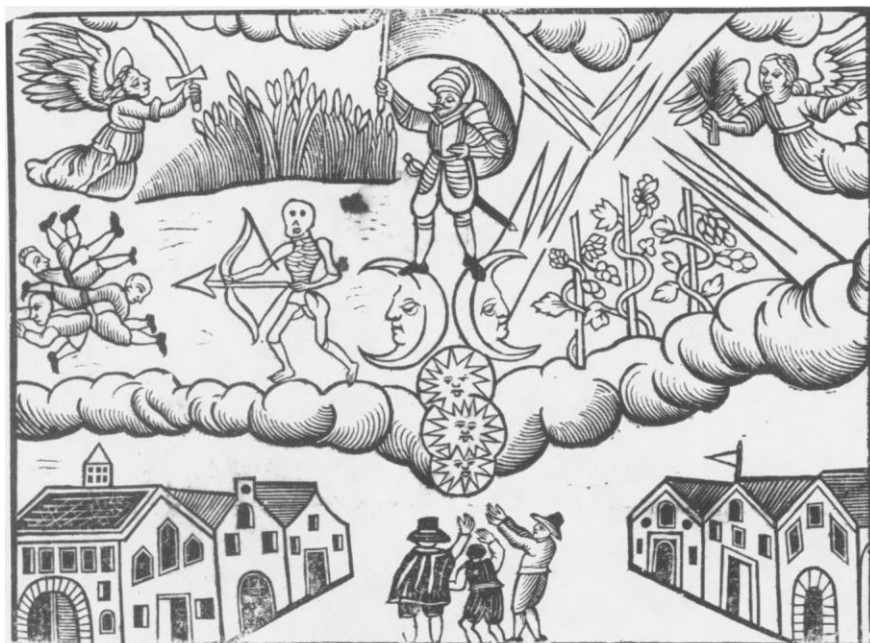


FIG. 1.—German broadside printed in Frankfurt, 1627, of a celestial apparition, portending, *inter alia*, a Turkish invasion, plague, and hailstorms. Courtesy of the Bayerische Staatsbibliothek, Munich.

into service as propaganda on one or another side of the raging religious controversies of the day.²⁹

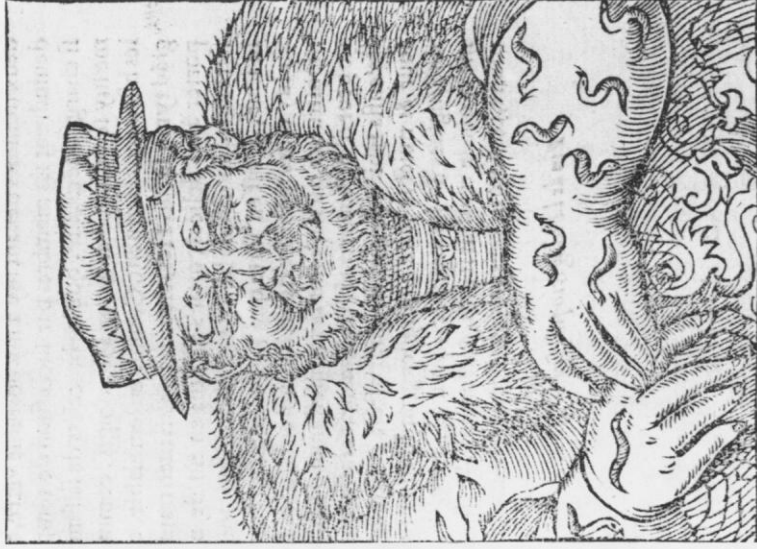
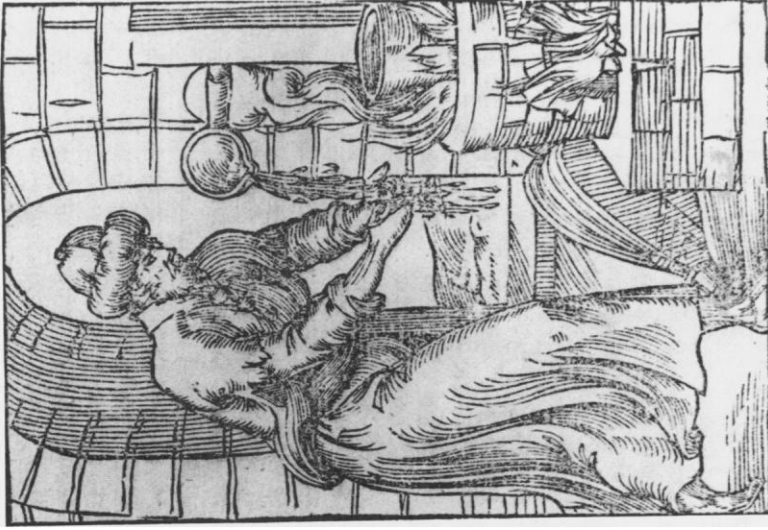
However, the printed collections of prodigies, learned and lay alike, did not saddle every prodigy they reported with a portentous interpretation. Some might be signs either of impending events (an invasion of Turks, an outbreak of plague, the coming of the Messiah), or religious heresy, or more generally of God's wrath and power—but not all. Bodin believed only comets and monsters to be true portents, and took care to distinguish these from superstitious and impious divination.³⁰ Boaiustauau and his coauthors blithely related prodigies that testified to "the excellence of man" (a man who slept for thirty years, another who washed his face and hands with molten lead, women who had borne litters of children, a prodigiously obese man) and to the fecundity of nature (stones that could render brackish water sweet, nereids and tritons, volcanoes), rather than to divine judgements and messages. Even the German broadsides, generally the gloomiest of a gloom-and-doom genre, sometimes published simple descriptions, without interpretations.

29. See Park and Daston, "Unnatural Conceptions," pp. 27–34.

30. See Bodin, *De la Démonomanie des sorciers*, fol. 49 r/v.



FIG. 2.—German broadside illustrating a monstrous birth in Spalt, 1511. Although described as “a wondrous and terrifying thing,” no interpretation is offered. Courtesy of the Bayerische Staatsbibliothek, Munich.



FIGS. 3 and 4.—Illustrations of prodigies depicting the “excellence of man” from Pierre Boistuaud’s *Histoire prodigieuse* (Paris, 1576). Figure 3 shows a “man of our times, who washed his face and hands in molten lead”; figure 4 is of the astonishingly obese Denis Heracleot, who had to resort to leeches to extract the fat. Both figures reproduced by courtesy of the Niedersächsische Staats- und Universitätsbibliothek Göttingen.

In these collections of strange events, popular and learned, the genuinely intermediate character of the preternatural, that twilight zone between the natural and supernatural, stubbornly asserted itself, whatever the declared orientation of the author. Avowedly naturalist accounts could not expunge the numinous association that clung to Siamese twins or an aurora borealis; avowedly supernaturalist accounts were equally unable to resist the temptation to include patently unportentous natural wonders such as hot springs and petrified forests. The cabinets of curiosities, those museums of the preternatural, contained a great many objects, secular as well as religious, that can only be described as relics—for example, the Ashmolean Museum in Oxford had among its holdings St. Augustine's pastoral crook.³¹

Analogously, churches had long displayed curiosities of no particular religious significance, such as a giant's bones, ostrich eggs, and unicorn horns, alongside splinters of the true cross and other more conventional objects of devotion.³² Pious authors heaven-bent on assembling instances of divine providences padded their account of remarkable deliverances at sea and blasphemers struck down by lightning in mid-oath with tales of a man who had voided a serpent seven ells long and kidney stones in the shape of "divers sorts of Animals." No pretense was made of drawing religious lessons from these latter "prodigious and astonishing" things.³³ Until the late seventeenth century the category of the preternatural retained a certain phenomenological homogeneity—wondrous objects and events not unambiguously miraculous in the strict sense—that defied tidy attempts to divide it in half down the line of natural versus supernatural causes. Preternatural events always qualified as wonders, but only sometimes as signs.

Sixteenth-century demonology briefly reinforced this phenomenological homogeneity with a causal unity of sorts. Increasingly, preternatural events were attributed not just to any remarkable conjunction of natural causes, but to conjunctions of natural causes cunningly wrought by demons. The effect of such demonic attributions was to weaken ties not only with purely natural explanations but also with purely supernatural ones. Indeed, the latter tendency was the more pronounced, for the religious peril of becoming a dupe to a counterfeit miracle, staged by the

31. See R. F. Ovenell, *The Ashmolean Museum, 1683–1894* (Oxford, 1986), p. 37. On the composition of the cabinets, see *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, ed. Oliver Impey and Arthur MacGregor (Oxford, 1985).

32. See Julius von Schlosser, *Die Kunst- und Wunderkammern der Spätrenaissance: Ein Beitrag zur Geschichte des Sammelwesens* (1908; Braunschweig, 1978), and David Murray, *Museums: Their History and Their Use* (Glasgow, 1904).

33. Increase Mather, *An Essay for the Recording of Illustrious Providences* (1684; New York, 1977), chap. 9. On the background to collections of providences, see Keith Thomas, *Religion and the Decline of Magic* (New York, 1971), chap. 4.

devil to trap the unwary, loomed large in an imagination haunted by the terrors of heresy, demonic magic, and witchcraft.³⁴ Alert to this peril, writers on the demonic preternatural actually tended to emphasize the natural character of preternatural events, in order to steal the devil's thunder. Thus Sir Thomas Browne accused Satan of "distorting the order and theory of causes perpendicular to their effects," deluding the credulous into taking stars and meteors as portents: "Thus hath he [Satan] also made the ignorant sort believe that natural effects immediately and commonly proceed from supernatural powers."³⁵ William Fleetwood, recalling St. Paul's warning about the "lying wonders of Satan" (2 Thess. 2:9), denied demons the power of working true miracles, although he did "not deny but that Spirits may foresee many Events that lye hid in their Natural Causes, which are concealed from *Us* but not from *Them*; because I do not know the extent of their intellectual Powers" (*EM*, p. 108).

Nor were these worries about how to distinguish preternatural, demonic wonders from supernatural, divine miracles confined to English Protestants: a Sieur de Sainte-Foy (possibly the pseudonym for the Jesuit Père Annat) insinuated that the Port-Royal miracle of the Sacred Thorn was a false miracle, the work of demons manipulating subtle natural causes in order to mislead good Catholics into the Jansenist heresy.³⁶ French Catholic writers on demonic imposture, however, did tend to concentrate more on superstitions like divination than on portents, possibly because they were saddled with the additional task of keeping sacramental as well as revelatory miracles pure from the taint of demonic imposture.³⁷

The proximate impact of these warnings was to discredit preternatural phenomena as true signs from on high; they were rather to be rejected as forgeries from below. The ultimate impact was to naturalize almost all of them, even when natural explanations for specific cases were wanting, as was the rule rather than the exception. The writings of the demonologists show that it was not sufficient simply to posit natural causes for preternatural phenomena in order to naturalize them fully; it was also necessary to rid nature of demonic agency. To simplify the historical sequence somewhat: first, preternatural phenomena were demonized and thereby incidentally naturalized; then the demons were deleted, leaving only the natural causes. This two-step process should not be insisted on too adamantly: there were plenty of respectable theologians, both Protestant and Catholic, who invoked demonic plots well into the eighteenth

34. See Jean Delumeau, *La Peur en Occident, XIV^e-XVIII^e siècles, une cité assiégée* (Paris, 1978). See also Walker, *Spiritual and Demonic Magic*, and Clark, "The Scientific Status of Demonology," on the growing fear of demons in the sixteenth century.

35. Browne, *Pseudodoxia Epidemica*, 1:193.

36. See Tetsuya Shiokawa, *Pascal et les miracles* (Paris, 1977), p. 112.

37. See, for example, Jean-Baptiste Thiers, *Traité des superstitions qui regardent les sacrements*, 4th ed., 4 vols. (Paris, 1741), and Pierre Le Brun, *Histoire critique des pratiques superstitieuses* (Paris, 1702).

century. In general, however, the activities and autonomy of the devil declined steadily in the last quarter of the seventeenth century, for reasons I shall discuss in part 5. The overall thrust of attempts to demonize preternatural phenomena was to discredit them as true signs. Counterfeit portents and false miracles pretended to a status they did not deserve, namely, that of the “signs and wonders” (Heb. 2:4) that truly announce God’s will and doctrine.

While miracles became ever more closely associated with evidence, especially in the writings of late seventeenth-century Protestant theologians, preternatural phenomena became ever less so. The English Hebraist John Spencer, writing in 1665, condemned the belief that prodigies were portents as “a very Vulgar and Pernicious Error,” endangering philosophy by inhibiting the search for natural causes, corrupting divinity by allowing “a liberty for men to bring into it what Divine signs they please without warrant from Scripture or reason,” and undermining the state by giving “every pitiful Prodigy-monger . . . credit enough with the People” to gainsay authority “by telling them that heaven frowns upon the laws, and that God writes his displeasure against them in black and visible Characters when some sad accident befalls the compliers with them.” Spencer did blame the devil for fobbing off prodigies as miracles in an attempt to deceive the gullible, but he was at least as concerned about the human manipulation of such alleged signs for nefarious purposes.³⁸ Meric Casaubon was willing to allow for sincere (though mistaken) claims to the power of divination, suggesting that “many natural things before they come to that passe, as to be generally known or visible, have some kind of obscure beginnings, by which they be known by some long before.” People or animals with unusually acute senses may indeed foretell coming events by these “natural foregoing signes.”³⁹ Although these indicators were in Casaubon’s view genuine signs, they were neither supernatural nor preternatural, but prosaically natural—for example, the throbbing bunions that precede a storm.⁴⁰

3. From Signs to Facts

Thus did preternatural phenomena lose their religious meaning as signs. But they did not cease to be of interest for learned as well as for lay audiences. Not only did vernacular collections of prodigies, now frankly advertised as “pregnant with pleasure and delight,” continue to spill forth

38. See John Spencer, preface, *A Discourse concerning Prodigies*, 2d ed. (London, 1665); see also pp. 59–60; hereafter abbreviated *DCP*.

39. Meric Casaubon, *A Treatise Concerning Enthusiasme, As it is an Effect of Nature: but is mistaken by many for either Divine Inspiration, or Diabolical Possession* (London, 1655), p. 42.

40. On natural divination, see also Céard, *La Nature et les prodiges*, pp. 115ff., and Thiers, *Traité des superstitions qui regardent les sacrements*, pp. 294–95.

from the presses in multiple editions; the annals of the fledgling scientific academies and other journals serving the Republic of Letters also devoted many pages to monstrous births, celestial apparitions, cyclones, diamonds that glowed in the dark, and other strange phenomena. These entries in the *Philosophical Transactions of the Royal Society of London*, the *Journal des Savants*, the *Histoires et Mémoires de l'Académie Royale des Sciences*, and other new journals concerned primarily with natural philosophy testify to a new status for preternatural phenomena. Long marginal to scholastic natural philosophy, and now stripped of their religious significance, they had become the first scientific facts. The very traits that had previously unfitted them for use in natural philosophy, and which had then disqualified them from use in theology, made this new role possible.

I have shown elsewhere in detail how this transformation came about in mid-seventeenth-century natural philosophy;⁴¹ here, I shall very briefly rehearse the main lines of this argument, as it relates to early modern views about the meaning of preternatural phenomena. As we have seen, preternatural phenomena, even when free of many portentous associations, had been in principle excluded from scholastic natural philosophy: *scientia*, properly speaking, was the corpus of demonstrated, universal truths, and preternatural phenomena were by definition exceptions to "that which is always or of that which is for the most part."⁴² Neither Aristotle nor his medieval followers denied the existence of such oddities, but they did deny that anomalies resulting from chance and variability could form the subject matter of true science, for "there can be no demonstrative knowledge of the fortuitous."⁴³ Nicole Oresme's *De causis mirabilium* (ca. 1370) shows how it was possible for Scholastic philosophers to simultaneously maintain that individual prodigies were wholly natural but nonetheless not susceptible to scientific explanation: "Therefore these things are not known point by point, except by God alone, who knows unlimited things. And why does a black hair appear on the head right next to a white one? Who can know so small a difference in cause?"⁴⁴ Well into the seventeenth century, natural philosophy continued to restrict its investigations to common experience.⁴⁵

41. See Daston, "Baconian Facts, Academic Civility, and the Prehistory of Objectivity," *Annals of Scholarship* (forthcoming), and "The Factual Sensibility," review of *The Origins of Museums*, ed. Impey and MacGregor, *Tradescant's Rarities: Essays on the Foundation of the Ashmolean Museum, 1683*, ed. MacGregor, and *The Ashmolean Museum, 1683–1894*, by Ovenell, *Isis* 79 (Sept. 1988): 452–67.

42. Aristotle, *Metaphysics*, 1027a20–27.

43. Aristotle, *Posterior Analytics*, 87b19–20.

44. Hansen, *Nicole Oresme and the Marvels of Nature*, p. 279.

45. See Peter Dear, "Totius in verba: Rhetoric and Authority in the Early Royal Society," *Isis* 76 (June 1985): 145–61, and "Jesuit Mathematical Science and the Reconstitution of Experience in the Early Seventeenth Century," *Studies in History and Philosophy of Science* 18 (June 1987): 133–75, on the transformation of the scholastic conception of experience.

Aristotelian natural philosophy shunned not only singular events, but all particulars, however commonplace, unless these led to generalizations and the discovery of causes.⁴⁶ The proper domain of particulars, of facts, as they came to be called, was history, not philosophy: “The register of *Knowledge of Fact* is called *History*. Whereof there be two sorts: one called *Naturall History*; which is the History of such Facts, or Effects of Nature. . . . The other is *Civill History*; which is the History of the Voluntary Actions of men in Common-wealths.”⁴⁷ History could contribute the raw materials and illustrations to natural philosophy—thus Aristotle’s *History of Animals* was to prepare the way for a philosophical zoology—but by itself it was an inferior sort of knowledge, subordinated to the study of universals in philosophy or poetry.⁴⁸ Jurisprudence, like history, also relied predominantly on facts and inferences from them, rather than on universals and demonstrations about them. However, this was simply proof positive of the inferiority of legal reasoning, even in the view of the jurists themselves.⁴⁹

This does not mean that Aristotelian philosophy was not empirical, only that its empiricism was not that of facts, in the sense of deracinated particulars untethered to any theory or explanation. Examples drawn from daily experience pepper the pages of Aristotelian treatises in natural philosophy, but they are just that—examples, and mundane ones at that. Examples illuminate or illustrate a general claim or theory; counterexamples contradict these claims only when an alternative universal lies ready at hand. Examples do not float free of an argumentative context;⁵⁰ they are, in our parlance, evidence rather than facts. To have served up particulars, even prosaic ones, without an explanatory sauce would have thereby demoted natural philosophy to natural history. To have served up preternatural particulars would have added insult to injury in the view not only of orthodox Aristotelians but also of innovators who, like Galileo or Descartes, still upheld the demonstrative ideal of science.⁵¹

Only a reformer intent on destroying this ideal, as well as specific claims of Aristotelian natural philosophy, would have been able to embrace preternatural particulars with open arms, and such was Francis Bacon. Impatient with Scholastic logic and scornful of the syllogism as an instrument for the investigation of nature, Bacon also challenged the validity of the axioms on which Aristotelian demonstrations were

46. See Aristotle, *Parts of Animals*, 639a13–640a10.

47. Thomas Hobbes, *Leviathan*, ed. C. B. Macpherson (1651; Harmondsworth, 1981), p. 148.

48. See Aristotle, *Poetics*, 1451b1–7.

49. See, for example, Jean Domat, *Les Loix civiles dans leur ordre naturel*, 2d ed., 3 vols. (Paris, 1696–97), 2:346–47.

50. I owe this view of scholastic empiricism to a paper by Joan Cadden on Albertus Magnus, to my knowledge never published.

51. See Daston, “Baconian Facts, Academic Civility, and the Prehistory of Objectivity.”

grounded. Human nature being what it is, we rashly generalize our axioms from an experience too scanty to reveal the true rules and species of nature.⁵² Bacon prescribed a cautionary dose of natural history to correct these prematurely formed axioms. Nor would ordinary natural history of what happens always or most of the time ("nature in course") suffice, for common experience does not probe nature deeply enough. Natural philosophers must also collect "*Deviating* instances, such as the errors of nature, or strange and monstrous objects, in which nature deviates and turns from her ordinary course" (*NO*, 14:138/ii. 29). In short, natural philosophy would have to take not only particulars, but preternatural particulars seriously.

Bacon's grounds for studying the preternatural were metaphysical as well as epistemological. Although he still spoke the language of "nature in course" and "nature erring," he also initiated a unified and thoroughgoing determinism. Dissolving the ontological barriers between natural and artificial, and between natural and preternatural, Bacon insisted that natural philosophy explain all such phenomena, and all by appeal to the same kind of causes. In particular, marvels and prodigies were no longer exempted from scientific explanation: "Nor should we desist from inquiry, until the properties and qualities of those things, which may be deemed miracles, as it were, of nature, be reduced to, and comprehended in, some form or certain law; so that all irregularity or singularity may be found to depend on some common form" (*NO*, 14:137/ii. 29). A due attention to preternatural phenomena would also act as an epistemological brake to over-hasty axioms and, Bacon further believed, offer privileged insights into the essential but often hidden workings of nature; they would "reveal common forms" as well as "rectify the understanding in opposition to common habit" (*NO*, 14:138/ii. 29).

Baconian facts were new not because they were particulars, nor even because they were preternatural. Particulars were the stuff of history, natural and civil, and expressly preternatural particulars had been a staple of both sorts of history since Herodotus and Pliny.⁵³ They were new because they now belonged to natural philosophy, expanding its realm beyond the universal and the commonplace. Within natural philosophy they supplemented the empiricism of examples used to confirm and instruct with a collection of counterexamples that were a standing reproach to all extant theories. Indeed, Baconian facts were handpicked for their recalcitrance, anomalies that undermined superficial classifications and exceptions that broke glib rules. This is why the first scientific facts retailed in the annals

52. See Francis Bacon, *Novum organum*, in *The Works of Francis Bacon*, ed. Basil Montagu, 17 vols. (1620; London, 1825-34), 14:34/i. 28, 73-74/i. 104; hereafter abbreviated *NO*.

53. See Charles William Fornara, *The Nature of History in Ancient Greece and Rome* (Berkeley, 1983), pp. 96-97.

of the Royal Society of London and the Paris Académie des Sciences were often such strange ones, for natural philosophy required the shock of repeated contact with the bizarre, the heteroclitic, and the singular in order to sunder the age-old link between “a datum of experience” and “the conclusions that may be based on it”; in other words, to sunder facts from evidence.

Thus in the course of the sixteenth and seventeenth centuries preternatural phenomena swung from the almost-supernatural extreme of portents to the almost-natural extreme of Baconian facts. They began as signs par excellence and ended as stubbornly insignificant. The crucial step in this astonishing transformation was the naturalization of preternatural phenomena. However, it would be a mistake to conclude that Spencer, Casaubon, and others who attacked the portentous interpretation of prodigies were always or even usually asserting the autonomy and inviolability of natural laws, à la David Hume. First, these so-called naturalizers countenanced the most unnatural of natural causes in their attempts to debunk false miracles. Pietro Pomponazzi’s *De naturalium effectuum causis; sive, De incantationibus* (1556) explained putative miraculous cures and apparitions by causes almost as wondrous: occult virtues of animals, plants, and humans; astral influences; the power of the imagination on animate and inanimate bodies.⁵⁴ Bacon was equally willing to grasp at the imagination as a natural alternative to a supernatural explanation. Reviewing stories about corpses bleeding anew in the presence of their murderers, he commented: “It may be, that this participateth of a miracle, by God’s just judgment, who usually bringeth murders to light: but if it be natural, it must be referred to imagination.”⁵⁵

Second, the structure of natural causes was not always mechanical or even deterministic. Spencer, for example, invoked the metaphor of natural law, but so literally that nature, like human legislators, was granted considerable freedom to make exceptions: “the more private and common Laws of Motion” only hold until superseded by “some more catholick and indispensable Laws . . . as the Statutes and Customs of private Corporations take place, till their power be suspended by some more catholick and inforcing Law of State” (*DCP*, p. 5). Similarly, when he likened nature to clockwork, it was a mechanism whose “blind and decaying Powers must be managed and perpetually wound up by an Hand of Power and Counsel, or they will either stand still, or perform their motions without time and method” (*DCP*, p. 136).

Thirdly, a natural explanation did not always preclude a preternatural or supernatural one. The cause of a monstrous birth might be both

54. See Pietro Pomponazzi, *De naturalium effectuum causis; sive, De incantationibus* (1556; Hildesheim, 1970).

55. Bacon, *Sylva Sylvarum: or, A Natural History in Ten Centuries* [1627], in *The Works of Francis Bacon*, 4:516–17.

the bestiality of the parents *and* divine displeasure at such sinful acts.⁵⁶ The doctrine of providence was based on the assumption that primary and secondary causes sometimes worked in tandem to “bring about striking accidents or coincidences.”⁵⁷ Natural philosophers from Jean Buridan through John Evelyn believed that comets were due to natural causes *and* foretold the death of kings. Since God controlled the natural and moral orders, there was no reason for him not to synchronize them.⁵⁸ Thus sixteenth- and seventeenth-century naturalism was synonymous neither with strict mechanical materialism nor with ironclad determinism nor with the autonomy of secondary causes. The impulses that eventually made it so were as much political and theological as philosophical, as the debate over the evidence of miracles reveals.

4. *The Pure Evidence of Miracles*

The idealized miracle of the seventeenth-century theologians takes place in the pages of Bacon’s unfinished utopia, *The New Atlantis*. The governor of the island of Bensalem explains to his shipwrecked guests how the islanders were converted to Christianity by “a great pillar of light,” topped by a still-brighter cross at sea, which one of the wise men of Solomon’s House certified as a genuine heavenly sign with the following prayer:

“Lord God of heaven and earth, thou hast vouchsafed of thy grace, to those of our order, to know thy works of creation, and the secrets of them; and to discern, as far as appertaineth to the generations of men, between divine miracles, works of nature, works of art, and impostures and illusions of all sorts. I do here acknowledge and testify before this people, that the thing which we now see before our eyes, is thy finger, and a true miracle; and forasmuch as we learn in our books, that thou never workest miracles, but to a divine and excellent end, for the laws of nature are thine own laws, and thou exceedest them not but upon great cause, we most humbly beseech thee to prosper this great sign, and to give us the interpretation and use of it in mercy; which thou dost in some part secretly promise by sending it unto us.”⁵⁹

This fictional (and atypical, since unrelated to healing) miracle includes almost all of the elements that preoccupied seventeenth-century writers on miracles. First, the miracle is a public rather than a private sign, on display for all the people of Bensalem to inspect and wonder at. Tradi-

56. See Ambroise Paré, *Des monstres et prodiges*, ed. Céard (1573; Geneva, 1971), p. 4.

57. Thomas, *Religion and the Decline of Magic*, p. 80.

58. *Ibid.*, p. 91.

59. Bacon, *New Atlantis* [1627], in *The Works of Francis Bacon*, 2:336.

tionally, private revelations, particularly sudden conversions, had counted as miracles, and many biblical miracles were directed at select persons or groups.⁶⁰ However, many seventeenth-century theologians, particularly Protestant theologians intent on discrediting sacramental miracles, insisted on “a public and visible demonstration.”⁶¹ Second, experts (here the members of the House of Solomon) are needed to distinguish the supernatural from the preternatural, natural, and artificial, and to guard against fraud. Since the members of the House of Solomon actually experiment with “all manner of feats of juggling, false apparitions, impostures, and illusions” that might be disguised “to make them seem more miraculous,”⁶² we may assume that Bacon himself was primarily concerned with human fraud. His contemporaries, however, also warned against demonic fraud, though still achieved by manipulation of natural causes. Third, God ideally delivers the proper interpretation of the miracle on the spot, in the form of revealed doctrine (the Bensalemites receive a box containing the Old and New Testaments, plus an explanatory letter from St. Bartholomew), which forestalls conjecture and dispute. These three elements—publicity, inspection for fraud, and interpretation in light of doctrine—defined the seventeenth-century concept of the miracle as evidence. I shall discuss each in turn, showing how all three tended to shift the focus of seventeenth-century debate from the evidence *of* miracles to the evidence *for* miracles.

It is striking that those seventeenth-century writers most exercised by the topic of miracles were those who insisted that miracles had long ago ceased. Protestants challenged by Catholics to produce miracles in attestation of their reformed faith retorted that there was no need for God to confirm the revelations of Christianity anew, for the Protestants meant to reinforce, not break with the teachings of the Bible.⁶³ Although there was some internecine wrangling as to exactly when miracles had ceased,⁶⁴ that they had done so many centuries ago was above dispute for Protestant authors. Edward Stillingfleet inquired rhetorically, “What imaginable necessity or pretext can there be contrived for a power of miracles, especially among such as already own the *Divine revelation* of the *Scriptures*?” It would be otiose for God to heap miracle on miracle in order to re-prove

60. See Romano Guardini, “Das Wunder als Zeichen,” in *Studien und Berichte der Katholischen Akademie in Bayern*, Heft 17, *Wunder und Magie* (Würzburg, 1962), pp. 75–93.

61. See John Tillotson, “Jesus the Son of God Proved by His Resurrection,” *Tillotson’s Sermons*, ed. G. W. Weldon (London, 1886), p. 372.

62. Bacon, *New Atlantis*, 2:375.

63. Although this view had Augustinian antecedents, it was vigorously revived by Calvin during the reformation: see Jean Calvin, “Epistre,” *Institution de la religion chrestienne* (n. p., 1541).

64. See, for example, William Whiston, *Account of the exact time when miraculous gifts ceas’d in the church* (London, 1749).

the proven, "meerly for satisfaction of mens *vain curiosities*."⁶⁵ John Tillotson had a similarly parsimonious interpretation of God's miracle-working: "when the end is obtained, the means cease; and the wise God, who is never wanting in what is necessary, does not use to be lavish in that which is superfluous."⁶⁶

Yet their very preoccupation with explaining why miracles could no longer be expected drove Protestant theologians to develop a new view of miracles as evidence: if miracles were proofs, how and what did they prove? Many medieval miracles were probative, certifying the sanctity of persons and the authenticity of relics.⁶⁷ Many others, however, presupposed and confirmed faith rather than compelling it.⁶⁸ Biblical miracles sometimes converted the skeptical as well as confirmed the faithful, but their evidence was not irresistible, for some remained unconvinced or at least unresolved—not all who witnessed Christ's miracles and those of the martyrs became Christians, and even Christ's disciples deserted him at his trial and execution. What I shall call the evidentiary school of seventeenth-century Protestant theology narrowed the function of miracles to that of providing irrefragable evidence for the truth of Christian revelation.⁶⁹ Some argued that miracles were only part of the evidence for the truth of Christianity,⁷⁰ but the general tendency was to concentrate ever more exclusively on the evidence of miracles, if only because "*an extraordinary message to the world, in the name of, and by commission of God*" demanded "more than ordinary evidence of such authority" (OS, p. 142). At the same time that preternatural events were losing all their evidentiary associations, supernatural events were strengthening theirs.

Not just any kind of evidence would do: a miracle was a "supernatural Effect evident and wonderful to Sense" (WJT, 2:495). Tillotson offered this definition with an eye toward excluding the sacramental miracles of the Catholics; later writers such as Stillingfleet also used it to exclude the private revelation of the fanatic or enthusiast: "this *inward sense* can be no ground to another person to believe his doctrine divine, because . . . it is impossible to another person to distinguish the *actings* of the *divine Spirit* from strong *impressions* of fancy by the force and energy of them" (OS, p.

65. Edward Stillingfleet, *Origines sacrae, or a Rational Account of the Grounds of Christian Faith, as to the Truth and Divine Authority of the Scriptures, And the matters therein contained* (London, 1663), pp. 140, 147; hereafter abbreviated OS.

66. Tillotson, "The General and Effectual Publication of the Gospel by the Apostles," *Tillotson's Sermons*, p. 236.

67. See Sumption, *Pilgrimage*, pp. 39, 70.

68. See Campbell, *The Witness and the Other World*, pp. 31–33.

69. For a full account of the evidentiary school of British theology as background to the later debate over the existence of miracles, see R. M. Burns, *The Great Debate on Miracles: From Joseph Glanvill to David Hume* (Lewisburg, Pa., 1981).

70. See Tillotson, *The Works of the Most Reverend Dr. John Tillotson*, 3d ed., 2 vols. (London, 1722), 2:501; hereafter abbreviated WJT; and Casaubon, *Of Credulity and Incredulity in Things Divine and Spiritual* (London, 1670), p. 116.

143). Thus sudden conversions and other inward visitations of grace ceased to be miraculous by the new evidentiary criteria. John Toland went so far as to brand all such secret miracles as false.⁷¹

However, the evidence of miracles was more than a spectacular appeal to the senses. Ideally, it was pure evidence, unequivocal in its interpretation, and irresistible in its persuasive power. The evidence of miracles straddled the distinction between the “internal” evidence of things and the “external” evidence of testimony, a distinction that was to dominate later debates over the evidence for miracles in the late seventeenth and early eighteenth centuries.⁷² The evidence of miracles was internal, insofar as it was a thing or event. Moreover, its internal evidence, read off from the very nature of the event, was of a special sort, pointing unmistakably to supernatural agency, just as fingerprints point to a certain hand. At the same time, the evidence of miracles was external, a form of testimony from God that the miracle-worker’s message was an authentic revelation. In both cases, the evidence of miracles was saturated with intention, God’s intention to suspend the natural order to certify his messenger, and God’s intention to establish certain doctrines. Because miracles accompanied doctrine, their meaning was clear; because God was the author of miracles, they proved beyond a shadow of a doubt.

However, the faith in pure evidence was short lived. The evidentiary theologians soon became preoccupied with the question, “What distinguished a true miracle from a false one?” Definitions of miracles proliferated in the late seventeenth century, as theologians and natural philosophers groped for some clear-cut criterion. The very number and diversity of these definitions testifies to their failure to find such. Almost every imaginable position found a supporter; a few examples from major writers suffice to suggest the breadth of opinion and the lack of agreement.

Tillotson asserted a miracle must be a “supernatural Effect,” but admitted that since angels and demons can “exceed any natural Power known to us,” their works would often be indistinguishable from those of God (*WJT*, 2:496). Casaubon eluded the problem of distinguishing supernatural and natural effects by reasserting the Augustinian position that there was nothing so ordinary “but, if looked into Philosophically, did

71. See Toland, *Christianity Not Mysterious* (1696; Stuttgart-Bad Canstatt, 1964), p. 155. On Toland’s ambiguous position on miracles, see Robert E. Sullivan, *John Toland and the Deist Controversy: A Study in Adaptations* (Cambridge, Mass., 1982), pp. 128, 223.

72. The *locus classicus* of the distinction is Antoine Arnauld and Pierre Nicole, *La Logique, ou l’art de penser*, ed. Pierre Clair and Francois Girbal (1662; Paris, 1965), p. 340. On the significance of the distinction for seventeenth-century conceptions of evidence, see Ian Hacking, *The Emergence of Probability: A Philosophical Study of Early Ideas about Probability, Induction and Statistical Reference* (Cambridge, 1975), chaps. 1–5. On its role in the later debate over miracles, see Daston, *Classical Probability in the Enlightenment* (Princeton, N. J., 1988), chap. 6, sect. 3.

afford me a miracle," in the sense of being inexplicable.⁷³ Joseph Glanvill confronted the difficulty head-on, and pronounced it irresoluble,

for we are ignorant of the *Extent* and *Bounds* of *Natures Sphere*, and possibilities; and if this were the *Character* and *essential Mark* of a Miracle, we could not know what was *so*; except we could determine the *Extent* of Natural causalities, and fix their *Bounds*, and be able to say to *Nature*, *Hitherto canst thou go, and no farther*.

Hence Glanvill required that putative miracles not only exceed the known powers of nature but also be performed by "Persons of Simplicity, Truth, and Holiness, void of Ambition, and all *secular Designs*" (*ST*, p. 52). Fleetwood thought it was enough that miracles violated the "setled Laws of Nature," these latter being observationally defined as "Operations that are constant, certain, and expected" (*EM*, p. 2). Samuel Clarke was more cautious than Fleetwood in qualifying "the Course of Nature" as the "perfectly *Arbitrary*" workings of divine will, "as easie to be *altered* at any time, as to be *preserved*," but also opted for a rarity criterion: "'tis only *usualness* or *unusualness* that makes the distinction."⁷⁴ John Locke faced these epistemological difficulties squarely, and retreated to the subjective appreciation of the miracle, defined as a "sensible operation, which, being above the comprehension of the spectator, and in his opinion contrary to the established course of nature, is taken by him to be divine."⁷⁵

These definitions were always convoluted and often circular or self-contradictory to boot. Only the intensity of the desire for such a hard-and-fast criterion can explain the willingness to wrestle with definitions that could not command internal consistency, much less consensus. What drove these writers into the definitional quagmire was the threat of false miracles; what altered in the course of the debate was not the fear of being deceived, but rather the identity of the suspected deceiver.

Increasingly in the last quarter of the seventeenth century, the enemy was the enthusiast rather than the devil. In the middle decades of the seventeenth century, the devil was still a force to reckon with: Browne contended that Satan counterfeited miracles to spread idolatry and superstition;⁷⁶ Pascal was deeply disquieted by the Jesuit insinuation that the Port-Royal miracle of the Sacred Thorn was a demonic imposture;⁷⁷

73. Casaubon, *Of Credulity and Incredulity in Things Divine and Spiritual*, p. 107.

74. Samuel Clarke, *A Discourse Concerning the Being and Attributes of God, the Obligations of Natural Religion, and the Truth and Certainty of the Christian Revelation* [Boyle lectures of 1705], 8th ed. (London, 1732), pp. 377, 375; hereafter abbreviated *D*.

75. John Locke, *A Discourse of Miracles*, in *The Works of John Locke*, 10 vols. (London, 1823), 9:256.

76. See Browne, *Pseudodoxia Epidemica*, chaps. 10–11.

77. See Blaise Pascal, "Le Miracle de la Sainte Épine," in *Oeuvres complètes*, ed. Fortunat Strowski, 3 vols. (Paris, 1923–31), 2:434–50.

Glanvill warned that witches and evil spirits could simulate miracles with “wonderful Combinations of *natural Causes*” (*ST*, p. 52). But already in the 1660s the devil had yielded the title of Great Deceiver to enthusiasts, both sincere and feigned. Long before Shaftesbury called on a witness in favor of a “new Prophesying Sect” and its purported miracles to prove himself “wholly free of melancholy, and . . . incapable of all Enthusiasm besides,”⁷⁸ portents and miracles had become associated among the learned with “all the common causes of deceit, *Superstition, Melancholy, natural weakness of sight, softness of imagination*” and other flaws of body and soul (*D*CP, p. 183). To judge from Clarke’s 1705 Boyle lectures, even Christ was in some circles suspected of baneful enthusiasm (see *D*, p. 373).

The deep-seated anxiety about imposture, both diabolical and human, was simply the obverse of the emphasis on miracles as evidence. For the evidentiary theologians, the truth of Christian revelation was chiefly supported “by the many infallible *Signs and Miracles*, which the Author of it worked publicly as the Evidence of his Divine Commission” (*D*, p. 372).⁷⁹ Miracles were God’s signature, “the greatest testimony of *Divine authority and revelation*” (*OS*, p. 139). However, in contrast to most testimonial evidence, what must be proved is not the trustworthiness but rather the identity of the witness, for once God’s identity was established, absolute trustworthiness followed necessarily for seventeenth-century theologians.⁸⁰ Since belief in revelation and, conversely, rejection of heresy was in their view the gravest of human duties, no pain should be spared in distinguishing divine signatures from forgeries. Fleetwood went so far as to make the miracle itself subsidiary to the signature, advising his readers that “you are under no obligation of Necessity, to believe all that a Man shall say, who works Miracles, without declaring he is sent of God, and telling you, that God has given him that miraculous Power, in order to obtain Credit with you” (*EM*, p. 117). Confident that God always provides “sufficient marks” for the “impartial Enquirers after Truth” to distinguish true from false miracles (*WJT*, 2:499), the theologians sought the signs that would validate the “Signs and Wonders.” The claim that miracles were irrefutable evidence thus led willy-nilly to the demand for still further evidence that the miracles in question were genuine.

The clinching evidence for the authenticity of an ambiguous miracle was doctrinal. As we have seen, both the objective criterion of supernatural causation and the subjective criterion of wonder dissolved under the scrutiny of seventeenth-century theologians: too little was known of nature to locate the boundary between natural and supernatural causes,

78. [Shaftesbury], *A Letter Concerning Enthusiasm, to My Lord ****** (London, 1708), pp. 68–69.

79. See also *WJT*, 2:498, and *OS*, pp. 138–39.

80. Sometimes, however, theologians entertained the possibility that God might allow false prophecies to be fulfilled to “try the People’s Faith and Constancy” (*EM*, p. 57).

an uncertainty exacerbated rather than mitigated by the discoveries of the new natural philosophy; too much was known of the uncritical human tendency to wonder at the wrong objects to lodge much confidence in admiration and astonishment. Their solution was to let doctrine certify the miracle, just as miracles certified the doctrine: "For it is my Opinion, that the Doctrine, in general at least, should always be first laid down, and then the Miracle be wrought to give the Messenger Authority and Credit to establish it in People's Minds; which would prevent all manner of Abuses of any Accidental Miracles" (*EM*, p. 63).⁸¹

The evidentialists were well aware of the potential circularity of this criterion, but insisted that the tautology was only apparent. Pascal summed up the problem in a laconic "Règle": "One must judge doctrine by miracles, and one must judge miracles by doctrine. All of this is true, but not contradictory. For it is necessary to distinguish the times [*distinguer les temps*]."⁸² The English evidentialists wriggled out of the difficulty by arguing that it was only the *kind* of doctrine which had to pass muster, not the specifics of its content. The doctrine must be inaccessible to human reason, for otherwise it need not be vouchsafed as revelation; moreover, it must not tend to promote idolatry and other impieties: "If the Doctrine attested by Miracles, be in it self *impious*, or manifestly *tending to promote Vice*; then without all question the Miracles, how great soever they may appear to Us, are neither worked by God himself, nor by his Commission" (*D*, p. 382). However, the elasticity of the term *impious*, which could be stretched to encompass all that contradicted a particular orthodoxy, blurred the boundary between kind and content of miracles that the evidentialists had hoped would protect them from tautology.

In cases of contested doctrine, the evidentiary import of the miracle, even one universally acknowledged to be genuine, was effectively neutralized by competing interpretations. When for example Pascal's niece was cured of a lachrymal fistula by contact with a thorn from the crown of Jesus on 24 March 1656, even the most bitter opponents of the Port-Royal Jansenists submitted to the official decision certifying the miracle as authentic. But whereas Pascal and his allies took the miracle as a divine vindication, their Jesuit critics argued that it was a divine warning to forsake their heresy.⁸³ The miracle remained a divine sign, but an inscrutable one.

The end result of the doctrinal criterion was to weaken dramatically the evidentiary force of miracles. Miracles alone, no matter how public and palpable to the senses, no longer sufficed to prove a doctrine or messenger heaven-sent. Further proof, in the form of harmony with preexist-

81. See *D*, p. 387; *WJT*, 2:498; and Casaubon, *Of Credulity and Incredulity in Things Divine and Spiritual*, p. 120.

82. Quoted in Shiokawa, *Pascal et les miracles*, p. 162.

83. See *ibid.*, pp. 128–29, 136–37.

ing doctrine, was required to establish divine credentials. If the doctrine was disputed, miracles could no longer settle the issue, for they then became signs without clear signification. A miracle unannounced by doctrine was no miracle at all, even if not under suspicion of fraud. Glanvill quoted with approval the Reverend Doctor R. Dean's opinion that the cures performed by Greatrakes, the "Irish Stroker," were " 'more than ordinary' " but " 'not miraculous' ": for not only did Greatrakes's patients occasionally suffer relapses, "He pretends not to give *Testimony* to any *Doctrine*" (*ST*, p. 53). Although Locke shook his head over the credulity of the ancients, who accepted their religion without any evidence—that is, without miracles—he was quick to rule out any mission inconsistent with "natural religion and the rules of morality," however wondrous its works.⁸⁴ In seventeenth-century evidentiary theology, miracles began as "the principal external Proof and Confirmation of the Divinity of a Doctrine"; they ended as themselves requiring "Proof and Confirmation" from doctrine.

Conclusion: Naturalization and the Reassertion of Authority

Even after miracles had lost their peculiar evidentiary power to compel belief unambiguously and automatically in early eighteenth-century theology, they did not immediately wither away. It took some forty years before the likes of Hume and Voltaire could discuss the problem of miracles as if it were one of the evidence *for* miracles, as opposed to the evidence *of* miracles.⁸⁵ However, evidentialist theologians did unintentionally prepare the way for this shift. First, by depriving miracles of evidentiary autonomy, they also deprived them of their ostensive function. If miracles require the evidence of doctrine, who needs the evidence of miracles? Among orthodox British theologians, not to speak of Deists like Toland and Anthony Collins, portents and miracles played an ever more modest role in Christian apologetics. Although none of them would have thought of denying their existence or importance in the early Church, late seventeenth-century theologians assumed an ever more condescending tone toward their predecessors for requiring such a vulgar sort of proof. Whereas Christ had been forced by his motley audience to address "the lower faculties of the Soul, phancy and imagination" with showy miracles, nowadays "all things are to be managed in a more sedate, cool, and silent manner," by invoking "steady and calm arguments" (*DCP*, p. 27–28). Just because miracles were "such sensible Demonstrations," they penetrated

84. Locke, *A Discourse of Miracles*, 9:261.

85. See Voltaire, "Miracles," *Dictionnaire philosophique*, in *Oeuvres complètes* (1764; Paris, 1783), 42:88–113, and David Hume, "On Miracles," *Essays Moral, Political and Literary* (1741–42; London, 1963).

even "the *weakest* Judgments and *strongest* Imaginations," but the enlightened had no need of them (*D*, p. 403).⁸⁶

This lofty manner points to the second unintentional contribution evidentialist theology made to the frontal attack on the very existence of miracles. By associating miracles with the bumptious and unlettered, they anticipated Hume's guilt-by-association argument that wonders proliferated most among the ignorant and barbarous. Thus Casaubon thought it necessary to apologize for St. Augustine's credulity in matters marvelous as unbecoming an educated man: "It may be, *St. Augustine* may be thought by some, to have been somewhat more credulous in this point of strange relations, then became so wise, so Learned, and judicious a man, as certainly he was: neither do I think my self bound to believe all things in this kind, which he may be thought by his words to have believed."⁸⁷ More dangerously, miracles had come to be linked with rabble-rousing enthusiasts, who sincerely or maliciously pretended to a divine mission in order to undermine the powers-that-be. This was one of Stillingfleet's most telling arguments for the cessation of miracles, for otherwise public order would be at the mercy of "an innumerable company of *croaking Enthusiasts* [who] would be continually pretending *commissions* from heaven" (*OS*, p. 109).

Although Catholic theologians in principle did not subscribe to the doctrine of the cessation of miracles, nor to the claim that miracles must be palpable to the senses, they were in practice as concerned about the destabilizing effects, theological and political, of alleged miracles as their Protestant colleagues. The Council of Trent stiffened the evidentiary requirements for miracles, and placed the responsibility for a thorough investigation in the hands of the local bishop, with the intent of reining in the deviations of popular religion.⁸⁸ Both the reasoning behind and the execution of the new regulations closely paralleled Protestant developments. Catholic reformers emphasized the need to distinguish between true religion and superstition, and since they further contended that superstitions were the work of the devil, the problem boiled down to distinguishing genuine miracles from demonic counterfeits. So rigorous were the diocesan investigations that the number of certified miracles in France declined precipitously in the second half of the seventeenth century.⁸⁹ Those that did pass through the fine sieve of official scrutiny were backed by so much legal and medical evidence that historian Jean de Viguerie has argued that they are among the best-documented historical

86. See also Casaubon, *Of Credulity and Incredulity in Things Divine and Spiritual*, p. 10.

87. *Ibid.*, p. 116.

88. See Delumeau, *Un Chemin d'histoire: Chrétienté et christianisation* (Paris, 1981), p. 194.

89. See Jean de Viguerie, "Le Miracle dans la France du XVII^e siècle," *XVII^e siècle* 35 (July–Sept. 1983): 313–31.

facts of the early modern period.⁹⁰ However, as for Protestants, doctrine steered Catholic deliberations over evidence, no matter how solid and copious the latter. Hume noted that the healing miracles performed in the Parisian parish of Saint-Médard in 1731 were immeasurably better confirmed than those of Christ and his disciples,⁹¹ but after a meticulous investigation the Archbishop Vintimille condemned the Saint-Médard cures for fostering Jansensism and “subvert[ing] the natural, established order of the Church.”⁹² De facto if not de jure, the Catholic church also subscribed to the doctrine of the cessation of miracles, and for much the same reasons that John Calvin had, namely, that miracles “could disturb and arouse doubts in a mind that would otherwise be tranquil [*en repos*].”⁹³

The reaffirmation of political and religious authority reflected in the official dismissal of unsettling portents and miracles on both sides of the Channel had its theological analogue in the centralization of divine power, especially in Protestant writings. Both the natural and, particularly, the preternatural domains lost territory as a result. Robert Boyle attacked natural philosophers who granted nature an unseemly amount of autonomy by endowing it with plastic powers and capricious deviations; nature was simply brute, passive matter set in motion and sustained by God.⁹⁴ Neither mechanistic nor Newtonian natural philosophy necessarily promoted nature’s independence and the inviolability of natural law. As Clarke put it in his Boyle lectures of 1705, “what Men commonly call the *Course of Nature*, or the *Power of Nature*” is simply the “*Will of God*” which “is as easie to be *altered* at any time, as to be *preserved*” (*D*, p. 377).

The preternatural had depended crucially on insubordination to divine decree, both nature’s and the devil’s, and therefore virtually disappeared as a result of God’s new, tightened regime. Although few went so far as to deny the devil’s existence, he was, like nature, put on a very short leash. Clarke thought God could at least partially restrain evil spirits (see *D*, p. 391), and Fleetwood essentially demoted the devil to God’s lieutenant, “for his Power or Impotence, it depends entirely on God, how far he will restrain or limit him” (*EM*, p. 50). By granting God a monopoly on agency in the universe, late seventeenth-century Protestant theologians, at least English ones, radically simplified ontology as well. Spinoza’s pantheistic critique of miracles was a scandal because it merged God with nature, but the simplifying ontological tendencies of the *Tractatus theologico-politicus* (1670), as well as the contempt for the low understanding of the “masses,” were echoed in numerous, more orthodox works.

90. *Ibid.*, p. 316.

91. See Hume, “On Miracles.”

92. B. Robert Kreiser, *Miracles, Convulsions, and Ecclesiastical Politics in Early Eighteenth-Century Paris* (Princeton, N. J., 1978), p. 370.

93. Calvin, “Epistre.”

94. Robert Boyle, “A Free Inquiry into the Vulgarly Received Notion of Nature,” in *Works of the Honourable Robert Boyle*, ed. Thomas Birch, 5 vols. (1685; London, 1744), 4:398.

There were early eighteenth-century voices, most famously Leibniz's, that called for a more aloof relationship between God and his creation, insisting on the integrity of the "laws of nature, and the beautiful pre-established order."⁹⁵ Were it not for Newton's equally famous objection to Leibniz, it would be tempting to ascribe this vision of a determined, immutable nature wholly to the successes of late seventeenth-century natural philosophy, most notably to those of Newton himself. However, the impulse for naturalization had other sources besides natural philosophy, or even metaphysics.⁹⁶ The motives behind excluding miracles in principle, as Leibniz and many eighteenth-century philosophes did, and excluding them in practice, as many devout Protestant and Catholic theologians did, sometimes converged in a form of naturalization. Pierre Bayle, ridiculing portentous interpretations of the comet of 1682, argued that the ordinary laws of nature were sufficient to show the will and benevolence of God, whereas natural phenomena cried up as portents merely misled the people into superstition and idolatry.⁹⁷ In addition to the usual naturalizing maxims that, in Thomas Burnet's words, to shift explanations from God's ordinary to his extraordinary providence was "but, as the Proverb says, to rob *Peter* to pay *Paul*,"⁹⁸ Bayle contended that a naturalized religion was also a sounder religion.

In view of the often subversive uses to which portents and miracles were often put, it is not surprising to find more candid arguments that a naturalized religion was a safer, more pleasant one as well. Spencer complained that a religion rife with portents was incompatible with "the peace and tranquility of common life," for "*how can a man, as he is counselled, eat his bread with joy, and drink his wine with a chearful heart (Eccles. 9.7); if every strange accident must perswade him that there is some sword of vengeance hanging over his head*" (DCP, fig. A4v). Stillingfleet ruled out the possibility of new revelations, supported by new miracles, on grounds of inconvenience: "For if *God* may still make new *articles of faith*, or constitute new *duties* by fresh *miracles*, I must go and enquire what *miracles* are wrought in every *place*, to see that I miss nothing that may be *necessary* for me, in order to my happiness in another world" (OS, pp. 147–48). A hankering for peace and quiet was by no means the only reason for promoting the naturalization of marvels and miracles, but it was a powerful one. A great deal of the rhapsodizing over law-abiding, commonplace nature that filled

95. *The Leibniz-Clarke Correspondence*, ed. H. G. Alexander (1717; Manchester, 1970), p. 12.

96. The metaphysical grounds were most powerfully argued in Benedict Spinoza, *A Theological-Political Treatise* [*Tractatus theologico-politicus*], in *The Chief Works of Benedict de Spinoza*, trans. R. H. M. Elwes, 2 vols. (New York, 1951), 1:84.

97. See Pierre Bayle, *Pensées diverses, écrites à un docteur de Sorbonne, à l'occasion de la comète qui parut au mois de décembre 1680* (Rotterdam, 1683), pp. 256–57, 700–708.

98. Thomas Burnet, *The Sacred Theory of the Earth* (1691; London, 1965), p. 221.

the writings of the natural theologians appealed to the desire for a calm religious life, free from nasty surprises and inspired upstarts.

Scientific facts also became more regular and more commonplace, although the transition from bizarre singularities to mundane universals was a gradual and uneven one.⁹⁹ However, even after scientific facts had been domesticated, the distinction between facts and evidence remained part of the conceptual framework of natural science, often contested (starting with Descartes and continuing to the present day) but never completely extirpated. Long after scientific facts ceased to be the anomalies and exceptions Bacon used to destroy Aristotelian axioms and natural kinds, they retained their reputation for orneriness. The portentous-sign-turned-scientific-fact left deeply etched traces in our way of thinking about evidence. In contrast, the contributions of the evidentiary miracle were not so long lived. Before worries first over demonic counterfeits and later over human enthusiasm reduced miracles to rubber-stamping extant doctrine, miracles seemed the purest form of evidence: their meaning was patent to all who had eyes to see, and they compelled belief as irresistibly as a mathematical demonstration—indeed, more so, since they required neither the training nor the concentration of a mathematician. Miracles were God's privy seal and letters patent, certifying a doctrine as divine and thereby convincing onlookers of its truth. Ideally, miracles were transparent, requiring no interpretation, and were as satisfying to the senses and to the imagination as to reason.

This dream of pure evidence evaporated with the division of evidence into the internal evidence of things and the external evidence of testimony, which division structured the debate over the evidence *for* miracles.¹⁰⁰ The pure evidence of miracles, at least as conceived in the mid-seventeenth century, straddled the line between internal and external evidence: as sensible events miracles belonged to the realm of things, but as supernatural events they also bore witness. They were the last form of evidence compatible with intention, in this case divine intention, and it is ironic that suspicions of human intention—that is, the intent to feign miracles in order to usurp political and religious authority—ultimately deprived them of evidentiary value.

99. On this transition, see Daston, "The Cold Light of Facts and the Facts of Cold Light: Luminescence and the Transformation of the Scientific Fact 1600–1750," paper presented to the workshop on "The Technologies of Objectivity," University of California, Los Angeles, February 1990.

100. On the early eighteenth-century debate in general, see Burns, *The Great Debate on Miracles*. On the role played by the distinction between internal and external evidence, see Daston, *Classical Probability in the Enlightenment*, pp. 323–30.