

Providence and the Affective Benefits of Natural Causality

Abstract

Stories of science as an engine of secularisation generally assume that scientific ideas and traditional religion are incompatible with each other, such that the advance of the former necessarily means the retreat of the latter. In certain versions of these stories, fear heightens the tension in the plot by accounting for why religion exists in the first place. This article looks at a range of early modern English thinkers, including Walter Charleton, John Spencer, and Joseph Glanvill, for whom the application of a key feature of science and its historical precursors—the explanation of phenomena through natural causality—is by contrast helpful, because it allows them to battle improper fears within Christianity. Their goal in pursuing naturalistic explanations is not the elimination of fear altogether, but rather the elimination of misplaced fears generated by a misunderstanding of how God works in the world. This promotion of some views of God’s activity in nature over others is a consequence of what they perceive to be the affective implications of different versions of the doctrine of providence. Even though these authors may not have imagined the expansion of natural causality’s explanatory scope to lead to secularisation, their ideas inadvertently helped to prepare the ground for at least one later instance of it: the secularisation of science itself.

Introduction

Stories of science as an engine of secularisation—that is, ones claiming that the advance of science means the retreat of religion—have been around in one form or another since the early modern period. These stories, Peter Harrison has suggested, generally have assumed that scientific ideas and traditional religion are incompatible with each other, such that the advance of the former necessarily means the retreat of the latter.¹ They have also regularly invoked the notion of an inevitable progression in society from a religious stage to a scientific stage, and have regarded the history of science as a story of human progress, that progress having occurred amidst the “regressive forces” of religion.²

¹ Peter Harrison, “Science and Secularization,” *Intellectual History Review* 27 (2017), 47-70, 47. See also John Hedley Brooke, “Science and Secularization,” in Peter Harrison (ed.), *The Cambridge Companion to Science and Religion* (Cambridge: Cambridge University Press, 2010), 103-23.

² Harrison, “Science,” 53.

In certain versions of these stories, a third factor—fear—heightens the tension in the plot by accounting for why religion exists in the first place.³ In his *Natural History of Religion*, for example, David Hume asserts that the “first ideas of religion” among our ancestors were the product of “a concern with regard to the events of life, and from the incessant hopes and fears which actuate the human mind.”⁴ Agitated by a variety of worries—“the anxious concern for happiness, the dread of future misery, the terror of death, the thirst of revenge, the appetite for food and other necessities”—our attention turns away from “the visible course of things,” and we become obsessed instead with those unpredictable events that befall us.⁵ Because the “secret and unknown causes” responsible for these seemingly arbitrary occurrences operate in ways that are “oft unexpected, and always unaccountable,” they become the “constant object of our hope and fear.” Our imagination consequently embarks on a flight of fancy, producing the idea of “powers on which we have so entire a dependence.”⁶ Thanks to our tendency to conceive of other beings as similar to ourselves, the “disordered scene” of human life prompts us to see in these powers the “first obscure traces of divinity.”⁷ In a similar vein, Bertrand Russell sees fear as “the basis of the whole thing [i.e., religion]—fear of the mysterious, fear of defeat, fear of death.” Because we don’t fully grasp what there is in the world, why things happen, or what the world is actually like, we create entities to help us cope with the vicissitudes of life: “It is partly the terror of the unknown and partly ... the wish to feel that you have a kind of elder brother who will stand by you in all your troubles and disputes,” that leads us to invent divine beings.⁸ Albert Einstein too suggests that it is fear that awakens “religious ideas”—like “hunger, ... wild animals ... illness and ... death”—among “primitive peoples.” This is because they do not properly understand the true “causal connections” among these ideas. To cope with that ignorance they create a “being, more or less like [themselves], on whose will and activities

³ In ancient times fear theories were proposed by Democritus and Sextus Empiricus, and were mentioned by Cleanthes, Epicurus, Lucretius, Cicero, and Lactantius. See Harrison, ‘*Religion*’ and the Religions in the English Enlightenment (Cambridge: Cambridge University Press, 1990), 15-16. On Hobbes see Alissa MacMillan, “Curiosity and fear transformed: From religious to religion in Thomas Hobbes’s *Leviathan*,” *International Journal of Philosophy and Theology* 80 (2019), 287-302. Ancient philosophers and poets, MacMillan argues, may have long preceded Hume in suggesting that fear and ignorance were the reasons why we create gods, but with figures like Hobbes and Hume we begin to have a clearer recognition that “a fear of God or a fear of invisible powers ... [that is,] the stuff of religion itself,” could be generated by our “psychology, passions, and upbringing.” MacMillan, “Curiosity and fear transformed,” 287-8.

⁴ David Hume, *Four dissertations. I. The natural history of religion. II. Of the passions. III. Of tragedy. IV. Of the standard of taste* (London: 1757), 12-13.

⁵ Hume, *Four dissertations*, 14.

⁶ Hume, *Four dissertations*, 16.

⁷ Hume, *Four dissertations*, 15.

⁸ Bertrand Russell, *Why I am not a Christian: And Other Essays on Religion and Related Subjects* (New York: Simon & Schuster, 1957), 22.

depend the experiences which [they] fear.”⁹ Hume, Russell, and Einstein may differ slightly in the reasons that fear causes religion to exist—for Hume and Einstein, the gods we invent are those that seem to be responsible for our maladies, whereas for Russell, the gods we manufacture help us to cope with the uncertainties of life—but for all three, fear is implicated directly.

Associating religion and fear in this way intensifies the secularising force of the causal understanding of nature of the kind that science and its historical precursor, natural philosophy, seek to provide.¹⁰ For Hume, the right causal understanding of occurrences subverts the religious construal or use of them and alleviates the “terror of the unknown” that arises from them. “Could men anatomise nature,” he claims, we would find that the causes that otherwise are unknown to us “are nothing but the particular fabric and structure of the minute parts of their own bodies and of external objects; and that, by a regular and constant machinery, all the events are produced, about which they are so much concerned.”¹¹ Russell similarly suggests that as part of the “fearless outlook” we should all seek, scientific knowledge will help us to better understand what happens in our lives and in the world in which we live:

In this world we can now begin a little to understand things, and a little to master them by help of science, which has forced its way step by step against the Christian religion, against the Churches, and against the opposition of all the old precepts. Science can help us to get over this craven fear in which mankind has lived for so many generations. Science can teach us, and I think our own hearts can teach us, no longer to look round for imaginary supports, no longer to invent allies in the sky, but rather to look to our own efforts here below to make this world a fit place to live in, instead of the sort of place that the churches in all these centuries have made it.¹²

⁹ Albert Einstein, “Religion and Science,” *New York Times* November 9 (1930), SM1.

¹⁰ Although historians have rightly noted the crucial ways in which modern science differs from its historical precursors like natural philosophy, the two share a desire to explain what happens in nature primarily in terms of natural causes. On the relations between the two, see “Getting the Game Right: Some Plain Words on the Identity and Invention of Natural Philosophy,” *Studies in History and Philosophy of Science* 19 (1988), 365-89; Margaret J. Osler, “Mixing Metaphors: Science and Religion or Natural Philosophy and Theology in Early Modern Europe,” *History of Science* 35 (1997), 91-113; Peter Dear, “Religion, Science and Natural Philosophy: Thoughts on Cunningham’s Thesis,” *Studies in History and Philosophy of Science* 32 (2001), 377-86.

¹¹ Hume, *Four dissertations*, 16-17.

¹² Russell, *Why I am not a Christian*, 23, 22.

The story is similar for Einstein. In his view, for “any one who is pervaded with the sense of causal law in all that happens, [and] who accepts in earnest the assumption of causality, the idea of a Being who interferes with the sequence of events in the world is absolutely impossible. ... the religion of fear ... can have [no] hold on him.”¹³ While they again differ in the details here, the overall picture for all three figures is clear. To help us explain and cope with the vagaries of life and the fears they generate in us, we create and worship divinities; identifying the natural causes underlying events in our lives reveals the actual causes responsible for them, thereby making them less mysterious to us and enabling us to respond to them without fear; without those fears driving us to search for explanations and for security, we will no longer need to create fanciful deities.

The science-and-secularisation stories just described are premised on the idea that the consequences for religion of seeking and providing explanations of occurrences in terms of natural causality are invariably negative. Adding fear theories of religion into the mix only magnifies science’s corrosive effects. This article surveys a range of early modern English thinkers for whom the application of natural causality is by contrast helpful to religion, because it allows them to battle improper fears within Christianity. Their goal in pursuing naturalistic explanations is not the elimination of fear altogether, but rather the elimination of misplaced fears generated by a misunderstanding of how God works in the world. Their promotion of some views of God’s activity in nature over others is a consequence of what they perceive to be the affective implications of different versions of the doctrine of providence, with different versions of the doctrine thought to entail different affective responses. Insisting on versions of providence in which occurrences are explained primarily through natural causality, and which correspondingly means that those occurrences are not causally or communicatively significant, will lead (so they hope) to expressions of piety in which fear manifests itself appropriately. Such versions of the doctrine are strongly preferred to the fear-ridden alternatives.

The authors analysed here insist on natural causality’s explanatory relevance because they are confident that it will allow them to preserve the faith as a whole while challenging particular forms of it. Yet even though they may not have imagined the expansion of natural causality’s explanatory scope to be a secularising force in the way that Hume, Russell, Einstein, and others did, their pursuit of it arguably contributed to at least one form of secularisation. Their

¹³ Einstein, “Religion and Science.”

expectation that the world is a regular and orderly place—an expectation shared by later, Victorian-era, theistic scientists—helped to normalise an understanding of the world as regular and explicable through natural causality that Victorian naturalists would capitalise on in order to free science from its Christian trappings. The early modern expansion of naturalistic explanation, that is, helped to lay the ground for the Victorian secularisation of science itself.

Affective salience of religious doctrine

The idea that different understandings of providence might correspond to different manifestations of fear represents a specific instance of the more general idea that religious doctrines can shape the affective experience of those who hold them. Although the intimacy of the connection between doctrine and affect is one of which Christian thinkers have for centuries been aware, it received sustained scholarly attention only relatively recently. Much of that attention can be traced to the publication of George Lindbeck's influential book *The Nature of Doctrine: Religion and Theology in a Postliberal Age* in the 1980s.¹⁴ Simeon Zahl summarises Lindbeck's account of the regulative aspects of doctrine—that is, its ability to shape the “entirety of life and thought”—in terms of three distinctive yet interrelated components: first, its ability to mould the “form, content, and style of Christian discourse”; second, its function in shaping the moral life, or as “informing and being informed by Christian ‘action’ broadly construed”; and third, as having “a deeply shaping impact on individual and communal *religious experience*.”¹⁵ Zeroing in on this third aspect, Zahl points to Lindbeck's claim that “[t]o ‘become religious’ is to learn not only how to act and think, but also how to *feel* ... in conformity with a religious tradition.”¹⁶

Zahl himself has sought to move beyond the broad generalisations Lindbeck and others have made to explain how this formational or pedagogical aspect of doctrine actually works in practice, “in particular concrete instances in human lives.”¹⁷ Of particular interest here are the

¹⁴ George Lindbeck, *The Nature of Doctrine: Religion and Theology in a Postliberal Age* (Louisville: Westminster John Knox Press, 1984).

¹⁵ Simeon Zahl, “On the Affective Salience of Doctrines,” *Modern Theology* 31 (2015), 428-444, 428 (emphasis in original).

¹⁶ Zahl, “Affective Salience,” 428.

¹⁷ Zahl cites the work of James K.A. Smith and Medi Ann Volpe, who have followed Lindbeck's lead and similarly explored aspects of doctrine's regulative function. Also relevant here (although not cited by Zahl) is the work of Charles Wood, for whom doctrines are capacities:

questions that Zahl sees the work of Lindbeck and his followers as raising but not answering: Which emotions and aspects of human experience are shaped by which doctrines? Are some doctrines more integral to, or better at, shaping emotions and desires than others? And can one speak in terms of the potential for better or worse affective impact—can we, that is, “talk about certain doctrines being problematic because they tend to have problematic affective effects, and can we describe other doctrines as being affectively ‘wise’ because of how they help foster and regulate more positive, theologically legitimated emotions?”

In support of his affirmative answer to this third question, Zahl notes how disagreements about specific doctrines in the history of theology are rarely disagreements of an exegetical, logical, or traditional kind alone. They instead frequently pertain to “a whole vision of what it is to be a Christian person in the world, and take for granted that one cannot make a wise decision about whether to support a doctrine without taking its full practical impact and affective shape into account.”¹⁸ To fail to take the affective implications of different construals of a doctrine into account, then, is to fail to recognise a crucial criterion of doctrinal discernment, one that has long standing and has been widely used within the Christian theological tradition. If doctrine can indeed influence affect in the ways that Lindbeck, Zahl, and others have suggested, then not only might different versions of a doctrine lead to different forms of life, but the resulting affective experience associated with each of those forms of life might give one reason to prefer one version of the doctrine to another.

Providence and fear in early modern England

[The] long-standing practice of organizing Christian teachings around key concepts [i.e. concepts such as the doctrine of providence, a doctrine being a “leading concept having an important function in Christian teaching and ... life] is an important clue to the function of those teachings. Concepts ... are essentially capacities. To have been taught a concept and to have mastered it is to be capable of doing something one could not do (or, perhaps, could not do as readily or easily) before. The wisdom that comes with the absorption of Christian teaching is in large part the possession and deployment of distinctive sets of concepts. Those concepts form the understanding of self, world, and God that permits the practice of Christian life. ... A Christian who lacks a significant Christian doctrine ... is therefore not simply *uninformed* about that point of Christian teaching. She or he is, in a way, *unformed* as a Christian.

Charles M. Wood, *The Question of Providence* (Louisville: Westminster John Knox Press, 2008), 6 (emphasis in original). Wood is here drawing on the work of one of Lindbeck’s contemporaries, William A. Christian: Christian, *Doctrines of Religious Communities: A Philosophical Approach* (New Haven: Yale University Press, 1987).

¹⁸ Zahl, “Affective Salience,” 434.

This regulative aspect of doctrine provides a useful vantage point from which to grasp certain discussions of the doctrine of providence in early modern England, a doctrine which has long been recognised as performing a key regulative function in the Christian life. According to Charles Wood, the doctrine of providence historically can be understood as an attempt to answer the question, “How are we to understand theologically what goes on?”¹⁹ This broad doctrine, avers David Fergusson, encompasses “the order of nature, the direction of history, the ways in which the lives of persons are subject to divine guidance, the problems of evil and suffering, the language of politics, the constructions that we place upon our individual life stories, and the final outcomes of nature and history.”²⁰ Thus understood, the doctrine shapes how Christians understand what happens in the created order, and encourages them to see history and nature in terms of what Wood calls their “God-relatedness.”²¹

Alexandra Walsham’s detailed cultural history of providence in early modern England indicates the considerable extent to which ideas about providence then influenced how people at every stratum of society lived their lives.²² As a “cluster of presuppositions” which were accepted by nearly everyone, providence was a concept which “exercised practical, emotional, and imaginative influence” upon those who accepted it.²³ Theologians from the period regularly gestured toward the significant capacity-shaping abilities of the doctrine. John Flavel, for example, extolled the “life of pleasure” one can expect to lead “if thy heart be spiritual and well-stockt with experience ... [and] thou hast recorded the waies of Providence toward thee.”²⁴ In regard to the appropriateness of certain responses to the harms that others do to us, a “Submission to Providence,” wrote William Sherlock, will “greatly mitigate our Resentments, and calm our Passions, and keep them within the bounds of Reason and Religion.”²⁵ And in a stirring sermon devoted to the doctrine, the relevant passage from which is worth quoting in full, John Pelling listed a wide range of practical benefits one could expect to enjoy when one possesses a deep awareness of, and is properly shaped by, God’s providential oversight of the created order:

¹⁹ Wood, *Question*, 17.

²⁰ David Fergusson, *The Providence of God: A Polyphonic Approach* (Cambridge: Cambridge University Press, 2018), 1.

²¹ Wood, *Question*, 16.

²² Alexandra Walsham, *Providence in Early Modern England* (Oxford: Oxford University Press, 1999).

²³ Walsham, *Providence*, 2-3.

²⁴ John Flavel, *Divine Conduct: Or, the Myserie of Providence* (London: 1678), B2r-B2v.

²⁵ William Sherlock, *A Discourse Concerning the Divine Providence* (London: 1694), 364.

[I]t informes a mans understanding with the knowledge of God and himselfe; it conformes the will to religious resolutions, it reformes the courses of a mans life, to christian obedience, it armes a distressed and an injured man with patience, it humbles a man full of prosperitie, that he burst not with pride; it tempers a man given to his lascivious and luxurious appetite that hee shall abstaine: it cooles, nay it quenches a mans fierie and sudden furie, that he shall do no mischief: it pacifieth ones deepe conceived displeasure, and otherwise implacable offense taken, that a man neither workes nor meditates revenge; it makes men make a conscience of their doings, for their gaine, for their delight, for their preferment, for any way having their will, their purpose. It makes men remember whence they came, consider where they are, what they doe, and whither they shall; it keeps men the more innocent that they doe no harme; It makes men the more warie that they take no harme; it teacheth men how to live well, and how to die well, which is next to eternall felicitie; live he poore or rich, in high or low estate, die he in his flourishing or decrepit age, of what disease, by what meanes, at home or abroad, at sea or land, when, where, and howsoever.²⁶

Such are the benefits of this “profitable ... doctrine,” claims Pelling, provided it is “well learned and well used.”²⁷

Among those who explored the affective and other formative consequences of providence, fear was a topic of considerable interest. Some of the more frequently made connections between fear and providence are captured in the mid-seventeenth-century treatise *A Discourse Concerning the Beauty of Providence* by later Royal Society fellow John Wilkins.²⁸ The basic claim about providence with which Wilkins worked is the idea that God is the “great Governor of the world” who lovingly watches over and orders everything that takes place in history.²⁹ Employing a division that was common among theologians at the time, Wilkins saw God’s providential ordering as consisting of two components: a general or universal part, and a particular or special one. In Wilkins’ view, the universal aspect of providence “puts the general

²⁶ John Pelling, *A Sermon of the Providence of God* (London: 1607), 29-30.

²⁷ Pelling, *Sermon*, 29.

²⁸ John Wilkins, *A Discourse Concerning the Beauty of Providence* (London: 1649).

²⁹ Wilkins, *Discourse*, A8v.

kinds of things into a regular way of working,” while the particular aspect “takes care of Individuall persons and actions.” For others, the distinction between the two was one of how God’s action related to the causal activity of nature with respect to God. William Pemble is exemplary in this regard: “Providence is divided into Ordinary, when God governeth the world, and things of the world, according to the Order and Lawes which himselfe set in the Creation: and Extraordinary, when hee worketh either against, or beside that order so appointed; as in working miracles.”³⁰ However these two aspects of providence were understood, Wilkins is representative of many when he asserts that through them, God guides nature and history in ways so fitting and appropriate that providence’s “comelinesse” is obvious: “God hath made every thing beautifull in his time; that is, There is a wise order and contrivance in all the works of Providence; Every particular event is most seasonable in that time which God appoints.”³¹

Much as he hoped that his contemporaries would fully appreciate and bask in the certainty of an all-encompassing providence, Wilkins wanted his readers to recognise that many of those contemporaries did not feel that certainty in their bones. Despite how widespread providential thinking was in his era, Wilkins was uneasy about the multitudes whose hearts had yet to be “established in the knowledge and belief of this truth.”³² To make sense of this discrepancy, Wilkins distinguished between knowledge of the “Notion” of providence, and the “practicall application of it, to particular times and conditions.”³³ A basic knowledge of providence may be near-universal, thought Wilkins, but people were rarely adequately applying the doctrine in a practical manner to comprehend or make sense of their own lives. As a consequence, they failed to benefit from the “comfort and satisfaction” that could be “reaped” from the doctrine.³⁴ To use the language introduced earlier, Wilkins was concerned that some of his contemporaries lacked certain affective and other capacities for living because of their inadequate formation by the doctrine.

Because they fail to make the proper connections between what happens in their lives and the providential deity who ultimately guides all things, those who are ill-formed by the doctrine of providence tend to lead lives plagued by fear. The fear that Wilkins was most concerned about is that which arises when one forgets that secondary causes—by which Wilkins means all

³⁰ William Pemble, *A Treatise of the Providence of God* (London: 1635), 279.

³¹ Wilkins, *Discourse*, 51, 4.

³² Wilkins, *Discourse*, A5r.

³³ Wilkins, *Discourse*, A4r.

³⁴ Wilkins, *Discourse*, A4r.

created things, which together comprise the created order—are in fact utterly dependent upon and rooted in God the first cause, who guides and governs them. Those who forget that God is providentially in charge, who are oblivious to “the Lord their maker, who stretched forth the heavens, & layed the foundations of the earth,” mistakenly “terminate their thoughts upon [those] secondary instruments.” Because of their failure to look beyond created entities, claims Wilkins, they fear “men that shall dye” rather than the Lord who holds all human beings in existence at all times.³⁵ Failing to comprehend how providence shapes everything that happens, they become anxious and can do little more than “feare continually” because of the “fury” of the created causes that assail them.³⁶

Wilkins sought to help his contemporaries overcome this kind of fear by advocating a stronger awareness that God is in fact actively governing everything. Notably, he did so by adopting an experiential or pastoral form of argument of the kind that Zahl has identified. Echoing Flavel, Pelling, and many others, Wilkins claimed that the constant awareness of God’s providential guidance of all things is “[v]ery seasonable to quiet and support the heart in these times of publick confusion.”³⁷ Once one has recognised God’s role in things, one really need not worry about what is happening around one or to one, for one can rest assured that God is ultimately in charge: “Though the potion be bitter, and displeasing, yet so long as it comes from a loving and carefull Father, we have no reason to fear any hurt by it.”³⁸ A deeply internalised commitment to, and formation by, the fact of God’s government matters greatly, he claims, for it means that we no longer need to “fear the most tempestuous mutations” of history. It will instead help us to “compose all these fears and distempers” from which we suffer.³⁹

Overcoming fear through naturalistic explanation

Wilkins’ treatment of fear reinforces the point made earlier, which is that a proper grasp of providence could have far-reaching affective consequences. Yet as the preceding description of his treatise makes clear, Wilkins had as his target the fears that arose among those who have forgotten that what happens to them is providentially decreed. Other intellectuals at the time, by contrast, were worried about those in society who seem to have fully submitted to and been

³⁵ Wilkins, *Discourse*, A10v.

³⁶ Wilkins, *Discourse*, A10v.

³⁷ Wilkins, *Discourse*, A2r.

³⁸ Wilkins, *Discourse*, A10r.

³⁹ Wilkins, *Discourse*, A10v, A10r.

shaped by the doctrine, but who did so to a questionable understanding of it. The view of providence to which they were opposed is colourfully evoked by John Spencer, who asserted that “England is grown Africa, and presents us every year ... with a new Scene of Monstrous and strange sights.”⁴⁰ Thomas Sprat makes a similar observation about the era: “This wild amuzing mens minds, with ... conceits of Providences, has been one of the most considerable causes of those spiritual distractions, of which our Country has long bin the Theater. This is a vanity, to which the English seem to have bin always subject above others.”⁴¹ What they and others had in mind is a view of providence characterised by an overactive (in their view) sense of God’s guidance, and a correspondingly overblown account of nature’s communicative significance. For those who subscribed to this “hotter sort of providentialism,” says Walsham,

God was no idle, inactive spectator upon the mechanical workings of the created world, but an assiduous, energetic deity who constantly intervened in human affairs. His finger could be discerned behind every inexplicable occurrence; He regularly stepped in to discipline sinners and bestow blessings upon the righteous and good. History was the canvas on which the Lord etched His purposes and intentions; nature [was] a textbook and a laboratory in which He taught, demonstrated, and tested His providence.⁴²

Those who yielded to such views, critics asserted, subjected themselves to unnecessary and detrimental fears of a sort quite different from those that occupied Wilkins.

While these latter forms of overactive providentialism were common in post-Reformation England, writers from the period recognised that historically speaking they were not new. In his mid-century treatise *The Darknes of Atheism*, for example, the English physician and later Royal Society member Walter Charleton finds just such an overactive sense of providence depicted in the first-century poem *On the Nature of Things* by Roman philosopher and poet Lucretius.⁴³ Charleton, who in his own work hoped to demonstrate how Epicurean atomism

⁴⁰ John Spencer, *A Discourse Concerning Prodigies* (London: 1663), B1v.

⁴¹ Thomas Sprat, *A History of the Royal-Society of London for the Improving of Natural Knowledge* (London: 1667), 362.

⁴² Walsham, *Providence*, 2. See also William E. Burns, *An Age of Wonders: Prodigies, Politics and Providence in England 1657-1727* (Manchester: University of Manchester Press, 2002).

⁴³ Walter Charleton, *The Darknes of Atheism Dispelled by the Light of Nature: A Physico-Theologicall Treatise* (London: 1652).

could be made consistent with Christian views of providence,⁴⁴ excerpted a relevant passage from Lucretius' poem in his treatise:

Those bug-bear Meteors, which the tim'rous eyes
Of pavid Mortals wonder at i'th skies;
And those unfrequent Prodigies, that appear,
On earth (while their weak souls are fool'd by Fear)
Are the sole charms, that emasculate,
And cheat mens minds to a beleif of Fate,
And some vindictive Numen.⁴⁵

On Charleton's reading, Lucretius is here suggesting that among those prone to weaknesses of one kind or another, infrequent and unusual events in nature like meteors or earthquakes could easily be construed as direct signs from a vindictive and terrifying God. Such phenomena, known at the time as prodigies, strike fear in ill-formed human hearts.

Spencer's *Discourse Concerning Prodigies* examines these occurrences, and the various emotions associated with them, at length.⁴⁶ At the heart of Spencer's opposition to prodigies is his judgement that forms of Christianity in which erroneous views of occurrences in nature loom large, and in which God is therefore seen as vengeful above all else, are superstitious and deeply problematic versions of the faith. The prodigy belief that deforms proper piety, he says, preys upon and perpetuates the anxieties that human beings experience, and keeps one "under a constant Paedagogy to many base and servile fears."⁴⁷ Once a connection between unusual occurrences and fear has taken hold, everything in one's life is interpreted through fear's lens.

⁴⁴ On the "baptism" of Epicureanism by French philosopher Pierre Gassendi see Margaret J. Osler, "Fortune, fate, and divination: Gassendi's voluntarist theology and the baptism of Epicureanism," in Margaret J. Osler, *Atoms, Pneuma, and Tranquility: Epicurean and Stoic Themes in European Thought* (Cambridge: Cambridge University Press, 1991), 155-74. On Charleton and atomism see Robert H. Kargon, *Atomism in England from Hariot to Newton* (Oxford: Oxford University Press, 1966).

⁴⁵ Charleton, *Darknes*, 153.

⁴⁶ See William E. Burns, "'Our Lot Is Fallen into an Age of Wonders': John Spencer and the Controversy over Prodigies in the Early Restoration," *Albion* 27 (1995), 237-52; Peter N. Jordan, "John Spencer and the Limits of Natural Causation in Early Modern England," in Gillian F. Straine (ed.), *Are There Limits to Science?* (Cambridge: Cambridge Scholars Press, 2017), 121-30.

⁴⁷ Spencer, *Discourse*, A3r.

In their efforts to discourage these debased forms of the faith and replace them with what Spencer calls more “amiable” forms of religion—ones intended “not to increase the fears of men, but truly to cure and remove them”⁴⁸—numerous intellectuals backed an approach very similar to that taken by Lucretius centuries before: overcome fear by recognising that many of the unusual phenomena in nature that were thought to be miraculous signs can in fact be explained through natural causality, and convey no message from God at all. If we continue reading the passage from Lucretius’ poem that Charleton excerpted in his treatise, there we find Lucretius advancing the idea that a hyperactive sense of divine providence, and the fear that it both preys upon and encourages, results from a lack of understanding of how nature actually operates:

For, because
Men understand not Natures cryptick Laws,
Nor her occult Efficiency; they fly,
(To salve their Ign’rance) to Divinity:
And idly rest in this; what ere befall,
Twas caus’d by Providence, that disposeth all.⁴⁹

Without a proper understanding of the true extent to which natural causality is responsible for what takes place in the world, the argument goes, people all too quickly run to other explanations and interpretations to comprehend the causes and the meanings of things that happen to them and around them. Expecting the worst, fear quickly follows.

Lucretius himself seeks to counter this tendency to flee to divinity and to take solace in providence by imagining the gods as having no interest in the world whatsoever; do that, he thinks, and one need not have any fears of divine wrath or retribution. In early modern England, by contrast, such a view of providence was almost unthinkable (despite the fact that much of the literature about providence from the period aimed at those so-called “atheists” who supposedly denied the doctrine altogether).⁵⁰ The task for intellectuals at the time was therefore

⁴⁸ Spencer, *Discourse*, A3r.

⁴⁹ Charleton, *Darknes*, 153.

⁵⁰ For more on the problem of atheism in early modern England see G.E. Aylmer, “Unbelief in Seventeenth-Century England,” in Donald Pennington and Keith Thomas (eds.), *Puritans and Revolutionaries: Essays in Seventeenth-Century History Presented to Christopher Hill* (Oxford: Clarendon Press, 1978), 22-46; Hunter, “The Problem of ‘Atheism’ in Early Modern England,” *Transactions of the Royal Historical Society* 35 (1985), 135-57; Hunter, “Science and Heterodoxy: An Early Modern Problem Reconsidered,” in David C. Lindberg and

to come up with a form of the doctrine that maintained what they recognised to be its main features and claims, and which inculcated among those who were formed by it the affective responses thought to be most germane to Christianity truly understood, while at the same time doing greater justice to how nature really functioned in both its more common periods and in its less habitual, more unusual, moments. Many thought the best way to do this was to encourage the study of natural philosophy, and correspondingly to promote naturalistic forms of explanation where relevant *within* their understanding of providence.

Charleton's treatise against atheism represents one attempt to articulate precisely such an approach to things. Charleton sounds distinctly Epicurean when describing the power of natural causality to mould the emotions: "Physiology, or the speculation of Natural Causes has the power to raise the mind of man to a generous height, from whence it may securely ... behold the most prodigious meteors; and look in the threatening face of Lightning without growing pale, while those that stand below become convulst with needless horror, and are ready to be shook to dust with superstitious fear."⁵¹ At the same time, he will not countenance banishing God from nature altogether. Such an implicit atheism would (among other things) eliminate entirely appropriate emotional responses to phenomena in the created order, such as awe: "Though it demonstrate our skill in Physicks, to stand unmoved, when the ground trembles: yet will it detect our ignorance in the Metaphysicks, not to fall prostrate in an humble reverence to that awfull majesty, that stretched out the North over the empty place, and hanged the earth upon nothing."⁵² What Charleton is looking for, then, is not a passionless reaction to the world, but rather a response befitting both the physical and metaphysical realities of the situation.

His account of providence purports to offer just that.⁵³ It provides what he thinks is an adequate account of God's sovereign control over the created order, and at the same time gives natural causality its due rather than assuming that everything is the product of God's direct activity:

Robert S. Westman (eds.), *Reappraisals of the Scientific Revolution* (Cambridge: Cambridge University Press, 1990), 437-60; Hunter, "'Aikenhead the Atheist': The Context and Consequences of Articulate Irreligion in the Late Seventeenth Century," in Michael C. Hunter and David Wootton (eds.), *Atheism from the Reformation to the Enlightenment* (Oxford: Oxford University Press, 1992), 221-54; David Berman, *A History of Atheism in Britain: From Hobbes to Russell* (London: Routledge, 1990). Fears of atheism and atheists spawned a whole new genre of anti-atheist literature: see Kenneth Sheppard, *Anti-Atheism in Early Modern England 1580-1750: The Atheist Answered and His Error Confuted* (Leiden: Brill, 2015).

⁵¹ Charleton, *Darknes*, 153.

⁵² Charleton, *Darknes*, 154.

⁵³ Charleton's views about God's relationship to the world, the metaphysics of causation, and providence were of course not the only ones on offer at the time. Arguments among Cartesians, the Cambridge Platonists, Newtonians and others revealed significant differences of opinion on these and a host of related issues. For useful insights into

when we ascribe the Monarchy of the World to one supreme Cause, we do not derogate a jot from the Power of second Causes; but rather confirme and subscribe the Charter of their deputations: since we thereby inferre an assurance, that those Causes are really such as he was pleased to constitute them, that their activities are but emanations of his omnipotence; and their effects the appointments of his Wisdome. And upon this meditation is it, that when we observe unfrequent wildfires in the Clouds, shaggy Meteors in the aer, Trepidations in the earth, and other the like admirable effects resulting from the concourse and conspiracy of potent Natural agents; we doe not instantly quench our wonder and check our curiosity, by ascribing the production of them to God, so as if he were the sole and immediate Author of them, and that no other Natural Cause intervened betwixt his Volition and their Contingency: but by supposing him to be the First and General Cause aswell of that particular one, as of all others in the World; and that besides the First there is required a Second Particular one, whose indagation [i.e., investigation] will fully compensate the sweat and oyle of our study, and which we must not deny, though we cannot discover, but acknowledge it to be ae Natural one, however to obscure for the invention of our perspicacity.⁵⁴

Here the recognition of the natural causes responsible for much of what happens does two things. First, it reflects what Charleton thinks are the actual causes of what goes on in the world. And, second, it frees one from anxieties induced by the idea that God is immediately generating every adverse event in one's life, and that future calamities or judgements are being disclosed through those events. Charleton is convinced that his view of providence, by giving natural causes their due, enables one both to recognise God's sovereign control over the created order, and to confidently withstand unexpected occurrences in life because they are in fact much less frequently communicatively significant than one may previously have thought. As a result, one no longer needs to succumb to many of one's fears.

some of these debates see John Henry, "Henry More versus Robert Boyle: The Spirit of Nature and the Nature of Providence," in Sarah Hutton (ed.), *Henry More (1614-1687) Tercentenary Studies* (Dordrecht: Kluwer, 1990), 55-76; Peter Harrison, "Laws of Nature in Seventeenth-Century England," in Eric Watkins (ed.), *The Divine Order, the Human Order, and the Order of Nature: Historical Perspectives* (Oxford: Oxford University Press, 2013), 127-48; Steven Shapin and Simon Schaffer, *Leviathan and the Air Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 2018 [1985]).

⁵⁴ Charleton, *Darknes*, 155.

Others saw the relationship between providence, natural causality, and affect similarly to Charleton. For Spencer, human beings are largely ignorant of the real causes of prodigious occurrences, and with this ignorance comes the fear that either God or the devil is responsible for them: “Persons in the dark are full of monstrous conceits, every shadow is a devil, and every bush a thief to them: And the more men are in the dark as to the knowledge of causes, still the more jealous and fearfull of Events.”⁵⁵ Lack of awareness of the real causes of things leads us to be fearful of rare occurrences in nature. The study of natural philosophy, the goal of which is “acquainting us with ... second causes,” inoculates us against such concerns. By bringing us “close up to the things we start at,” and by giving us a “distinct and through view of what frightened us before,” it “shames the follies and weakness of our former fears.”⁵⁶ This focus on natural causality does not imply that God is absent from nature; Spencer also admired Epicurus’ attempt to solve “all the Phenomena of Nature” without “calling in any assistance from the power and providence of any Agent superiour to Naturall,” but like Charleton he criticised Epicurus for his willingness to “thrust ... God and Religion quite out of the world.”⁵⁷ Just as we must not imagine God to be residing in another realm and wholly unconcerned with the human world, so we must not focus so intently on secondary causes (as those whom Wilkins worried about did) as to “loose our Religion in Philosophy ... till we quite forget the First [cause], and become profane.”⁵⁸ What is needed, rather, is the right understanding of nature, of God, and of their relations—that is, the right understanding of providence—so that the baseless fears to which many have become subject can be eliminated, and replaced by the “true fears” that form part of a proper Christian faith.⁵⁹

Clergyman and defender of the Royal Society Joseph Glanvill concurred. For Glanvill, prodigy belief is superstitious, as it bestows “Religious valuation on things” which do not deserve it, and encourages “fearing those, in which there is no hurt.”⁶⁰ Prodigy belief thereby makes Christianity look like a “sneaking, weak, [and] peevish” thing, for it “emasculates mens

⁵⁵ Spencer, *Discourse*, 20.

⁵⁶ Spencer, *Discourse*, 76.

⁵⁷ Spencer, *Discourse*, A3r.

⁵⁸ Spencer, *Discourse*, 43.

⁵⁹ Spencer, *Discourse*, 61.

⁶⁰ Joseph Glanvill, *Philosophia Pia; Or, a Discourse of the Religious Temper* (London: 1671), 42. Cambridge Platonist Henry More suggests that in the midst of “some heavy adversity, mighty Tempest on the Sea or dreadfull Thunder on the land,” it is our “natural conscience” that leads us to think that these are directed towards us or have us as their target, even “though these be but from Naturall Causes.” Henry More, *An Antidote against Atheism* (London: 1653), 30.

understandings ... & keeps them under the servility of childish fears.” Natural philosophy—which for Glanvill means the “real, experimental Philosophy”—is the appropriate antidote, because it gives a person precisely what they need to deal with the afflictions of superstition.⁶¹ In place of “idle dotages, and effeminate Fears,” he says, it generates a “strong and manly temperament,” one that characterises for him the right kind of piety.⁶²

According to people like Charleton, Spencer, and Glanvill, a doctrine of providence that can appropriately accommodate natural causality allows one to cultivate the most fitting affective response to what goes on in the world, while at the same time preserving God’s sovereign government of the creation. To generate that ideal response, each figure emphasises recognition of the natural causes involved in many of the most unusual and unexpected phenomena in nature, and thus of the ability of natural causality to explain those occurrences. While this Epicurean-inspired policing of the emotions through the promotion of naturalistic reasoning may have dealt adequately with fear, it is worth noting that it simultaneously led to a shift in the balance between God’s general providential provision for the world and God’s special providential action compared to how that balance had often been perceived at the time, especially by those more zealous providentialists.

This change was explicitly noted by Thomas Sprat, the well-known author of the first history of the Royal Society. Like many before him, Sprat thought that natural philosophy could shape the emotions associated with unusual phenomena in nature in beneficial ways: “For this we are beholden to Experiments; ... though they have not yet completed the discovery of the true world, yet they have already vanquish’d those wild inhabitants of the false worlds, that us’d to astonish the minds of men. A Blessing for which we ought to be thankful, if we remember, that it is one of the greatest Curses that God pronounces on the wicked, That they shall fear where no fear is.”⁶³ Natural philosophy discovers the true created causes of unusual phenomena like prodigies, and thereby calms our irrational fears. At the same time, Sprat recognises that this focus on natural philosophy inevitably leads one to the conviction that the created order is less frequently subject to divine intervention or modification beyond its habitual course, and thus is more susceptible to naturalistic explanation than it was previously thought to be. This is reflected in his description of the rebalancing between general and special providence that will

⁶¹ Glanvill, *Philosophia Pia*, 43.

⁶² Glanvill, *Philosophia Pia*, 46.

⁶³ Sprat, *History*, 340-341.

occur once one has naturalised many of those phenomena previously thought to be instances of God's miraculous special providence: "[I]f they lessen one heap yet they still increase the other."⁶⁴ Yet for Sprat, increasing the extent to which general providence can account for what happens isn't a problem. Ultimately it "diminish[es] nothing of his [God's] right," for in Sprat's view, "If they take from the Prodigies, they add to the ordinary Works of the same Author."⁶⁵ By this logic, then, an increasing emphasis on general providence over special ultimately is nothing to worry about. For no matter how things are distributed between the two categories of providence, everything that goes on in the world is still ultimately subject to God's providential oversight.

Conclusion

In their *Wonders and the Order of Nature*, Lorraine Daston and Katharine Park stress what were perceived to be the subversive political implications of popular fears and wonders in early modern Europe. Insofar as prodigies represent messages from God which "overrode all temporal and ecclesiastical obligations," they could, Daston and Park argue, easily "inflamm[e]d and terrified crowds to insurrection and heresy." The naturalisation of prodigies in early modernity, they therefore suggest, constituted a "strategic" project, one undertaken not as "autonomous medical or natural philosophical inquiry," but rather to address the "urgent political dangers" that they represented.⁶⁶

Whether the political ramifications of prodigies were the ultimate driving concern behind every instance of their naturalisation in early modernity is not our principal concern here. Whatever the distal motivations (assuming such existed) behind it may have been, the proximal goal of naturalisation among those whom we have surveyed here—intellectuals who staunchly opposed what they regarded as the fanciful interpretation of unusual occurrences in nature—was to encourage what they believed to be more fitting displays of Christian piety, ones marked

⁶⁴ Sprat, *History*, 361.

⁶⁵ Sprat, *History*, 361-362. Thomas Burnet says of the opposite move (i.e., to assume that natural phenomena are in fact miraculous): "we must not cut the chains of it [natural providence] too short, by having recourse, without necessity, either to the First Cause, in explaining the Origins of things: or to Miracles, in explaining particular effects. This, I say, breaks the chains of Natural Providence, when it is done without necessity, that is, when things are otherwise intelligible from Second Causes. Neither is any thing gain'd by it to God Almighty; for 'tis but, as the Proverb says, to rob Peter to pay Paul, to take so much from his ordinary Providence, and place it to his extraordinary." Thomas Burnet, *The Theory of the Earth* (London, 1697), 215.

⁶⁶ Lorraine Daston and Katharine Park, *Wonders and the Order of Nature, 1150-1750* (New York: Zone Books, 1998), 336.

by what they saw to be the right affective response rather than the wrong one.⁶⁷ The logic of their approach, as we have seen, is clear: naturalising unusual phenomena in nature helps to dissolve fears of divine wrath by revising one's view of providence. By adopting a naturalism-informed providence, or providential naturalism, that reflects the actual causal activity involved in rare phenomena in nature (so their reasoning went), one will reduce the likelihood that one will misunderstand occurrences in nature—many of which should (according to the naturalising paradigm) be explained through natural rather than miraculous means—and suffer from unwarranted and undesirable fears.

This use of natural causality to deal with undesirable affective responses to phenomena in nature is one of many ways in which early modern authors made use of science and its historical precursors for religious ends. Historians have identified a number of such uses. Stephen Gaukroger, for example, has argued that Christians were largely responsible for legitimating and consolidating the historical precursors of science in early modernity; what made natural philosophy attractive to so many in the seventeenth and eighteenth centuries, he argues, “were the prospects it offered for the renewal of natural theology.”⁶⁸ Scientific insights, according to this view, were seen as providing the best evidence of design and purpose in the created order.⁶⁹ Peter Harrison and others have also observed how early modern natural philosophers saw the pursuit of scientific activities as itself a religious vocation; according to Robert Boyle, for example, natural philosophy was “philosophical worship of God.”⁷⁰ Natural philosophy, Harrison has elsewhere suggested, allowed one to develop virtues and attain happiness, ends traditionally associated more closely with religion.⁷¹ And by establishing themselves as the people most familiar with nature's operations, natural philosophers became authorities on

⁶⁷ A second strategy that early modern scholars adopted, Daston and Park argue, was to “decouple” fear and wonder, the goal of which was to emphasise the “delights of natural wonders” rather than “awe-inspiring divine interventions.” As a result of this decoupling, “wonder excited the soul to the contemplation and admiration of God's works rather than to terror at his wrath,” and one's state of mind was thereby “conducive to a religion based on faith and love.” Daston and Park, *Wonders*, 336.

⁶⁸ Stephen Gaukroger, “Science, Religion and Modernity,” *Critical Quarterly* 47 (2005), 1-31; Peter Harrison, “Religion, the Royal Society, and the Rise of Science,” *Theology and Science* 6 (2008), 255-71.

⁶⁹ Peter Harrison, “Natural Theology, Deism, and Early Modern Science,” in Arri Eisen and Gary Laderman (eds.), *Science, Religion, and Society: An Encyclopedia of History, Culture, and Controversy* (New York: M.E. Sharpe, 2007), 426-40, 428.

⁷⁰ Quoted in Harrison, “Religion, the Royal Society,” 263. See also Harold Fisch, “The Scientist as Priest: A Note on Robert Boyle's Natural Theology,” *Isis* 44 (1953), 252-65.

⁷¹ Harrison, “Religion, the Royal Society,” 264; see also Peter Harrison, *The Territories of Science and Religion* (Chicago: University of Chicago Press, 2015). On the idea that mathematical and natural-philosophical practices might help one to live a good life, an idea found in the writings of numerous early modern authors, see Matthew L. Jones, *The Good Life in the Scientific Revolution: Descartes, Pascal, Leibniz, and the Cultivation of Virtue* (Chicago: University of Chicago, 2006).

distinguishing between true and false miracles.⁷² For a variety of reasons, then, many early modern figures promoted the use of science's historical precursors because they were convinced that rather than leading to the demise of religion, it would be of assistance to it.

Despite this confidence that Christianity would benefit from science, Harrison has recently argued that it was out of the "congenial interactions" between Christianity and science at the time, rather than because of a "growing separation and opposition" (as so many popular stories of secularisation through science suppose), that secularisation "initially arose."⁷³ In view of this, it is worth asking whether the ideas propagated by the intellectuals we have been looking at here may have (inadvertently or otherwise) contributed to the process of secularisation. That this may be the case is suggested by the historical picture painted by Roy Porter, who has proposed that a key dimension in the emergence of modernity was the rise of naturalism and science in place of providential ways of thinking. For Porter, what was happening in the seventeenth and eighteenth centuries was the gradual displacement of providence: "biblicism and providentialism were being challenged by naturalism," he claims, and there was a "programmatic shift from Christian Providentialism to more secular, scientific world views."⁷⁴ In light of Harrison's claims, in what ways (if any) might Porter's views of the relations between providence, naturalism, and science be right, and how might the figures we have been looking at be implicated?

As we have seen, the naturalisation of phenomena in nature was intended by its English advocates to allow those who adopted that approach to remain committed to providence, and not to overturn or replace it. As Michael Heyd has observed (following Sprat's line of thinking), by reducing the frequency of the "supernatural intervention of God" these natural philosophers and others were decidedly not "denigrating divine providence."⁷⁵ And if later trends are anything to go by, their efforts in this regard seem not to have imperilled the prevalence of belief in providence among Christians who came after them. Belief in providence, J.C.D. Clark has noted, remained widespread into the eighteenth and nineteenth centuries.⁷⁶ Providence has

⁷² Harrison, "Miracles, Early Modern Science, and Rational Religion," *Church History* 75 (2006), 493-510, 504.

⁷³ Harrison, "Science," 56ff.

⁷⁴ Roy Porter, *Enlightenment: Britain and the Creation of the Modern World* (London: Penguin, 2000), 13, 229.

⁷⁵ Heyd's reasoning here follows directly from Sprat: among early modern intellectuals, "regular providence, no less than extraordinary miracles, was a manifestation of God's will." Michael Heyd, 'Be Sober and Reasonable': *The Critique of Enthusiasm in the Seventeenth and Early Eighteenth Centuries* (Leiden: Brill, 1995), 158.

⁷⁶ Clark's evidence indicates that providential discourse, far from being replaced by naturalistic accounts of how the world works, instead survived as "the prevalent idiom in which the course of events were encountered and

endured as a core commitment among Christians of diverse kinds throughout modernity. Among many Christians, then, naturalism does not appear to have straightforwardly undermined a commitment to providence.

That this should be so should not come as a surprise, given that Christians themselves invented methodological naturalism (so Ronald Numbers has argued),⁷⁷ and given that natural causality has long been a key ingredient Christian conversations about the best way to providentially understand the world and our place within it.⁷⁸ Historically Christians may not have agreed about the extent to which it can explain phenomena in nature, but their disagreements about the proper extent of natural causality within providence nevertheless have often presumed a commitment to both. There is considerable breadth in the range of views that Christians have proposed about how nature operates in this regard—from seeing miraculous exceptions to nature’s habitual operation everywhere, to seldom, if ever, seeing any such exceptions anywhere—and that breadth suggests varying levels of comfort with naturalistic explanations of what occurs in nature. But this variation means that stories about the place of natural causality within Christianity are more likely to be ones about the ebb and flow of interest in, and deployment of, naturalistic forms of explanation—that is, stories of local efflorescences of interest in and attention to natural causality—rather than ones of unidirectional change over time in one direction (either contraction or expansion) or the other.

reflected upon in England” well into the eighteenth and nineteenth centuries. J.C.D. Clark, “Providence, Predestination and Progress: Or, Did the Enlightenment Fail?” *Albion* 35 (2003), 559-89, 561.

⁷⁷ Ronald L. Numbers, “Science without God: Natural Laws and Christian Beliefs,” in David C. Lindberg and Ronald L. Numbers (eds.), *When Science and Christianity Meet* (Chicago: University of Chicago Press, 2008), 265-286, 284.

⁷⁸ For some of this history, see William J. Courtenay, “The Critique of Natural Causality in the Mutakallimun and Nominalism,” *Harvard Theological Review* 66 (1973), 77-94; Richard C. Dales, “A Twelfth-Century Concept of the Natural Order,” *Viator* 9 (1978), 179-192; William J. Courtenay, “Nature and the Natural in Twelfth-Century Thought,” in *Covenant and Causality in Medieval Thought: Studies in Philosophy, Theology and Economic Practice* (London: Variorum, 1984), III 1-26; Lorraine Daston, “Marvelous Facts and Miraculous Evidence in Early Modern Europe,” *Critical Inquiry* 18 (1991), 93-124; Edward Grant, “Jean Buridan and Nicole Oresme on Natural Knowledge,” *Vivarium* 31 (1993), 84-105; Laura Smoller, “Defining the Boundaries of the Natural in Fifteenth-Century Brittany: The Inquest into the Miracles of Saint Vincent Ferrar (d. 1419),” *Viator* 28 (1997), 333-360; Robert Bartlett, *The Natural and the Supernatural in the Middle Ages* (Cambridge: Cambridge University Press, 2008); Peter Harrison and Jon H. Roberts (eds.), *Science without God? Rethinking the History of Scientific Naturalism* (Oxford: Oxford University Press, 2019). For recent discussion among Christian theologians see Andrew B. Torrance, “Should a Christian Adopt Methodological Naturalism?” *Zygon: Journal of Religion and Science* 52 (2017), 691-725; John Perry and Sarah Lane Ritchie, “Magnets, Magic, and Other Anomalies: In Defense of Methodological Naturalism,” *Zygon: Journal of Religion and Science* 53 (2018), 1064-1093; Torrance, “The Possibility of a Theology-Engaged Science: A Response to Perry and Lane Ritchie,” *Zygon: Journal of Religion and Science* 53 (2018), 1094-1105.

If Porter's story of the displacement of providence does not represent a universal story of providence's relations with naturalistic explanation in modernity, it does nevertheless still capture some aspects of the changing relations between the two. One way in which it does so—one to which the English authors we have been looking at here can plausibly be connected—relates to the secularisation of science itself that occurred in nineteenth-century England, a development that, as Matthew Stanley has shown, was made possible by Victorian-era theological commitments among scientists of a Christian persuasion. Theistic scientists like John Herschel, James Clerk Maxwell, and others believed that nature ran according to laws that, thanks to God's "constant and ubiquitous action," were completely consistent and stable temporally and spatially.⁷⁹ Baden Powell captured the spirit of these figures when he wrote that "law and order, physical causation and uniformity of action, are the elevated manifestations of Divinity, creation and providence."⁸⁰ So complete was their commitment to the uniformity of the laws of nature that they believed miracles were merely natural phenomena the laws governing which had not yet been fully understood, and that genuine exceptions to nature's uniformity counted against the divine origin of all things.⁸¹ For figures like these, the expectation that everything can be explained by natural causality and nature's uniformity are two sides of the same coin. In their view of providence, there are no supernatural exceptions to nature's causal relations, and thus nothing that natural causality cannot account for.⁸²

From the perspective of Porter's proposed historical picture, what matters about these Victorian scientists is the fact that their idea of nature's unvarying laws—an idea that they believed "only made sense in a theistic world"⁸³—became, at the hands of Thomas Henry Huxley, John Tyndall, and others, grounds for separating science from the theistic framework from which it had emerged. As Stanley has shown, Huxley, Tyndall and their fellow Victorian scientific naturalists agreed with the theistic scientists about the inviolability of the laws of nature, but

⁷⁹ Matthew Stanley, "The Uniformity of Natural Laws in Victorian Britain: Naturalism, Theism, and Scientific Practice," *Zygon: Journal of Religion and Science* 46 (2011), 536-560, 543; Stanley, *Huxley's Church and Maxwell's Demon: From Theistic Science to Naturalistic Science* (Chicago: University of Chicago Press, 2014).

⁸⁰ Stanley, "Uniformity," 549.

⁸¹ According to Baden Powell, "To speak of apparent anomalies and interruptions as *special* indications of the Deity, is altogether a mistake. In truth, so far as the *anomalous* character of any phenomenon can affect the inference of presiding Intelligence at all, it would rather tend to *diminish* and detract from that evidence." Quoted in Stanley, "Uniformity," 549.

⁸² As Stanley has put it, "Uniformity is said to allow for no hidden corners in nature. The world is a unitary whole, with only one set of laws that are never suspended or restricted. There are no gaps for God to hide in, nothing is shielded from explanation in terms of natural laws, and there are no eras of history concealed from investigation." Stanley, "Uniformity," 538.

⁸³ Stanley, "Uniformity," 547.

the former deployed nature's uniformity to "banish God" from the realm of science altogether, rather than to uphold God's involvement. Not only could laws that were previously understood as being simultaneously laws of God and laws of nature become laws of nature without remainder, but the study of those laws in fact demanded a secular framing rather than a theistic one: for figures like Tyndall and Huxley, Stanley writes, the "uniformity of natural laws left no room for religion in science."⁸⁴ The theistic scientists' assumption about immutable laws of nature on which science relied thereby became a basis for science's secularisation.

Although they pursued the naturalisation of phenomena in nature only selectively, the English intellectuals whom we have looked at in this article did hope to change their contemporaries' perceptions about the extent of the orderliness of nature by convincing them that the total number of phenomena that could be explained naturalistically was greater than they had previously thought. Insofar as later figures, such as the Victorian theistic scientists, believed that natural causality was responsible for every phenomenon in nature, this early modern expansion of natural causality's scope helped to prepare the ground for the later secularisation of science.⁸⁵ Regardless of whether this constitutes the "programmatic shift" that he speaks of, Porter is right to note the rise of "more secular, scientific world views" in modernity. Through their efforts to deploy naturalism-informed accounts of providence to combat misplaced fear, the authors we have looked at here inadvertently helped to pave the way to the emergence of those views.

⁸⁴ Stanley, "Uniformity," 541.

⁸⁵ The English deists (among others) also contributed to normalising expectations of nature's regularity, and to enlarging the explanatory scope of natural causality. As Lucci and Wigelsworth have noted, "even the most 'pious' among them ... indubitably denied supernatural events." Diego Lucci and Jeffrey R. Wigelsworth, "'God does not act arbitrarily, or interpose unnecessarily': Providential Deism and the Denial of Miracles in Wollaston, Tindal, Chubb, and Morgan," *Intellectual History Review* 25 (2015), 167-89, 168.