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FROM SIN TO SCIENCE: ASTROLOGICAL EXPLANATIONS FOR THE BLACK DEATH, 1347–1350

Rebecca Johnson

GRADUATE WINNER OF THE JOSEPH MULLIN PRIZE IN HISTORY

BY the time the first wave of the Black Death engulfed Western Europe, the validity of “natural” astrology was firmly accepted by literate elites. Associated with the revival of Aristotelian learning begun in the twelfth century, the concept that “superior” bodies such as stars and planets exercised at least a general influence on earthly events enjoyed a wide currency among clergy as well as laymen. A significant number of scholars doubted—whether based on the heretical implications of the idea, or their own empirical observations—that the stars actually determined the fate of individuals. But even they had to concede, on the evidence of the seasons and tides, that broader forces might emanate from the heavens. This naturalistic discourse of the stars ran parallel to (and often intersected with) the discourse of Christian apocalyptic, in which celestial bodies generally functioned as omens rather than causes. The rising prominence of both discourses during the fourteenth century ensured that the stars would play a central role in contemporary efforts to make sense of the plague’s devastation.

These efforts varied from deterministic analyses focused on the mechanical influences of the celestial spheres, to primarily apocalyptic readings that employed astrological illusions to buttress their authority. They also included accounts that, though mentioning astrology only incidentally, reveal how deeply embedded the idea that the planets were in some way responsible for events on earth had become in the plague discourse shared by the learned.

Although the degree of formal astrology employed in each varies, these accounts contrasted strikingly with contemporary arguments that the plague represented divine retribution for mankind’s sins. In this sense, they can be seen to represent the growth of a world-view that, if not quite “scientific” in the modern use of the word, was nonetheless increasingly deterministic and objective. This perspective was not

necessarily irreconcilable with the idea of a vengeful God choosing to punish humanity for its trespasses at a particular moment in time. In the Aristotelian universe elaborated by scholastic thinkers, which received its definitive form in the *Summa Theologica* of Thomas Aquinas, God was characterized as the *primum movens*, or first cause, of all things. He might thus be understood as operating through proximate causes, using the planets as vehicles to communicate his wrath.

However, when these causes were described within a rational and largely constant system, it carried the implication of a more purely mechanistic universe. This focus on the causes themselves, as opposed to the will of their unseen mover, functioned to distance God from man and diminish the power of human appeals to him. Moreover, it carried its own argument for the pursuit of revelation by studying the arcana of nature. A God who worked through planetary intermediaries was a God less likely to speak directly to his creatures than to expect them to discern his intentions through the examination and interpretation of the physical universe.

Few survivors of the plague's horrors could have remained indifferent to debates over its ultimate cause. The frequent evocation of astrology in these debates helped to increase the circulation of astrological ideas in the later fourteenth century, and contributed to the wider vogue they enjoyed during the early modern period. It also led to the rise of a more objective and deterministic, rather than strictly theological, understanding of the physical universe. It is easy for twenty-first-century observers to dismiss late medieval astrology as a pseudo-science, imprisoned within the moldy edifice of an Aristotelian cosmology that the tools of later scientific method have long since dismantled. Nonetheless, attempts to explain the Black Death (and, by extension, other major events) in wholly or partially astrological terms represent a significant stage in the development of the scientific tradition in Europe. They reveal that some of the most highly educated minds in fourteenth-century Christendom responded to the devastating reality of the plague with explanations that were comparably more naturalistic and less theological in nature than those that might have been articulated even a century or two earlier. In doing so, they created a further emphasis on the logical examination of cause and effect in understanding God's universe, as well as the agency to be gained through the resulting knowledge.

The concept of a connection between those changes observed in the heavens and those experienced on earth was, of course, part of many traditions that predated the spread of Christianity. At a minimum, since the position of the stars varied regularly and predictably with the changing of the seasons, a correspondence of some sort between the two

phenomena was widely assumed.¹ A similar linkage could be discerned in the clear correlation between the tides and the phases of the moon. Ideas of a generalized *sympathia rerum* did not necessarily imply a relationship of cause and effect between two phenomena.² Two associated events might equally be interpreted as both arising from a third, still unknown cause. This logic could be invoked as a naturalistic justification for treating one occurrence as a “sign” or portent of another, in quasi-divinatory fashion, without causing it directly.

However, the elaboration of cosmologies that stressed the superiority of the heavens over the earth led to the development of astrological systems that assumed more rigidly hierarchical relations of cause and effect. Aristotle’s *De caelo* offered an authoritative view of such relations, portraying a universe in which a series of perfect, incorruptible celestial spheres exercised dominion over the mutable world at their center.³ Ptolemy later built on this vision in his *Tetrabiblos* by introducing the celestial element of ether as the medium through which heavenly influences were transmitted to the lesser elements below.⁴ Proper understanding of the precise mechanism linking celestial and earthly events should then enable the prediction of when and where the latter would occur, as Ptolemy maintained in his *Almagest*.⁵ This Aristotelian cosmology, having undergone only minor modifications over the centuries, would become the major influence on the natural philosophy of medieval scholastics, providing the theoretical basis for belief in the efficacy of astrology following its rediscovery in the Christian West.

From antiquity onward, opinions differed as to both the power and the specificity of celestial influences. A rough divide can be discerned between those who were only willing to characterize the impact of celestial bodies as broad and collective, and those who perceived smaller, often occult effects on the destinies of individuals. Generally speaking, the former group accepted the validity of what S. J. Tester calls “natural astrology,” and Laura Ackerman Smoller refers to as “general predictions,” in forecasting major changes that affected society as a whole, including weather, epidemic disease, war, and momentous historical

¹ S. J. Tester, *A History of Western Astrology* (Wolfeboro, NH: Boydell Press, 1987), 14.

² *Sympathia rerum*: the sympathy of matter, e.g., the concept that physical objects might move in “sympathy” with one other. Eugenio Garin, *Astronomy in the Renaissance: The Zodiac of Life* (Boston: Routledge, 1982), 6.

³ Edward Grant, “Medieval and Renaissance Scholastic Conceptions of the Influence of the Celestial Region on the Terrestrial,” *Journal of Medieval and Renaissance Studies* 17 (1987): 6; also, Edward Grant, *Planets, Stars and Orbs: The Medieval Cosmos, 1200–1600* (New York: Cambridge University Press, 1994), 14–15.

⁴ Grant, “Scholastic Conceptions,” 2.

⁵ Tester, 57.

events.⁶ The latter, more restricted group also supported the authority of what is known as judicial astrology, whose medieval form included more individualized predictions, such as those based on natal horoscopes (nativities), or those generated in response to a particular question (interrogations) from one seeking advice.⁷ However, theories of judicial astrology drew their credibility in large part from the less contested authority of natural astrology. The two schools of thought remained associated, with the result that although the explanations advanced for the Black Death fell largely into the category of natural astrology, judicial astrology also experienced an upsurge in popularity in the centuries after the plague.

As might be expected, since the early days of Christianity, natural astrology, which concerned itself with the broader and more obvious correspondences between heaven and earth, was far more palatable to the Church than judicial astrology, which seemed a presumptuous attempt to reveal God's hidden designs. Early Church fathers such as Augustine and Origen preferred to emphasize human freedom, as well as the power of God's will, by treating celestial phenomena as signs, rather than causes, of terrestrial change.⁸ This outlook persisted well into the Middle Ages, but was challenged by the rediscovery of the Aristotelian corpus in the twelfth century via translations from Greek and Arabic sources.⁹ Ptolemy's *Tetrabiblos*, translated into Latin in 1130, would circulate widely over the next fifty years, along with the *Introductorium maius* of his commentator, Abu'Mashar, who replaced Ptolemy's vision of ether as the mode of celestial transmission with the more direct notion that the planets emitted rays that acted on terrestrial objects.¹⁰ Their ideas were spread through both the circulation of their own texts and through paraphrase in other works, such as John de Sacrobosco's *Tractatus de Sphaera*, which became the most popular university text for the teaching of astronomy.¹¹ The widening currency of astrological discourse meant that the stars and planets were more likely to be viewed

⁶ Tester, 178; Laura Ackerman Smoller, *History, Prophecy, and the Stars: The Christian Astrology of Pierre d'Ailly, 1350–1420* (Princeton: Princeton University Press, 1994), 17.

⁷ Smoller, *History, Prophecy, and the Stars*, 17.

⁸ See Tester, 110, for the position of Augustine. See also Tabitta Van Nouhuys, *The Age of Two-Faced Janus: The Comets of 1577 and 1618 and the Decline of the Aristotelian World View in the Netherlands* (Boston: Brill, 1998), 60–62, for comments on Origen, as well as Isidore of Seville.

⁹ Tester, 152; Smoller, *History, Prophecy, and the Stars*, 29.

¹⁰ For the dates of translations, see Tester, 153; for Abu'Mashar's contribution to Ptolemaic theory, Van Nouhuys, 64, and the entirety of Richard Lemay, "The True Place of Astrology in Medieval Science and Philosophy: Towards a Definition," in *Astrology, Science and Society*, ed. Patrick Curry (Wolfeboro, NH: Boydell Press, 1987), 57–73.

¹¹ Smoller, *History, Prophecy, and the Stars*, 45.

as active causes, rather than accompanying signs of earthly events. This was true even among churchmen and theologians, as ecclesiastical attempts to ban the study of Aristotelian works in the early thirteenth century—and their subsequent failure—demonstrate.¹² By 1250, such works had become an essential part of the curriculum in many major universities, including those of Paris and Bologna.¹³

At this time, the study of astrology seems to have been valued principally for its connection to medicine, premised on the Ptolemaic idea that the different planets governed different organs and induced changes in the balance of the four bodily humors.¹⁴ However, the dissemination of astrological ideas carried clear implications for the understanding of both the physical universe and the God who had set it in motion. In the thirteenth century, Albertus Magnus, Roger Bacon, and Thomas Aquinas all agreed in denying the stars and planets any direct power over the soul, *except* insofar as their physical effects excited the passions of men who allowed their passions to govern them.¹⁵ In doing so, they attempted to reconcile an Aristotelian acceptance of the natural world's impact on the human body with the idea of free will as instrumental to mankind's fall and salvation expressed by Christian theology. In its orthodox emphasis on free will, their accommodation was superficially similar to the position adopted by earlier Christian thinkers such as Augustine. However, it also represented a radical departure from the Augustinian tradition, in that the scholastics were now inclined to accept that heavenly bodies might actually cause earthly events, rather than merely accompany them as signs.

Even with its provisions preserving free will, the scholastic conception of a universe that operated with an increasingly mechanical regularity was fundamentally antithetical to the Church doctrine of God's absolute omnipotence, which necessitated God's ability to intervene in the physical world at any time.¹⁶ In 1277, the bishop of Paris released a statement condemning 219 articles of belief, in what amounted to the

¹² Van Nouhuys, 65.

¹³ Edward Grant, "The Condemnation of 1277, God's Absolute Power, and Physical Thought in the Late Middle Ages," in *Astrology, Science, and Society*, ed. Patrick Curry (Wolfeboro, NH: Boydell Press, 1987), 211.

¹⁴ Richard Lemay, in "The Teaching of Astronomy in Medieval Universities, Principally at Paris in the Fourteenth Century," *Manuscripta* 20 (1976), treats this connection as the primary reason for the widespread adoption of the subject in university curricula. Tester acknowledges that the idea of the celestial bodies exercising effects on human health predated the ancient Greeks, but also notes that Ptolemy systematically places this idea within an Aristotelian framework in the *Tetrabiblos*, which was, of course, the most authoritative justification of it available to medieval scholars (61–64).

¹⁵ Smoller, *History, Prophecy, and the Stars*, 30–31.

¹⁶ Van Nouhuys, 66.

most comprehensive attack to date on what Edward Grant has termed “the philosophical necessitarianism and determinism” that the church associated with Aristotelianism.¹⁷ The condemned beliefs included not only those rejected by the schoolmen, such as the proposition “that our will is subject to the power of heavenly bodies,” but many of the other assumptions about the physical universe embodied in natural astrology.¹⁸ Thus, the idea “that fate, which is a universal disposition, proceeds from the divine providence not immediately but by the mediation of the movement of the heavenly bodies” fell under censure.¹⁹ So did the more general concept that secondary causes might continue to operate without any further impetus once God set them in motion.²⁰ The condemnations of 1277 were an explicit recognition that a focus on physical causes, even if defined as secondary in theological terms, tended to eclipse God’s power—in the case of the stars and planets, quite literally.

As the vast number and variety of propositions anathematized suggests, the basic doctrines from which they were derived had become too deeply rooted among the educated (despite this group being composed largely of clerics) for the condemnation to have much force. Although historians agree that the condemnation led some scholars to be more cautious in terms of language when discussing astrological and physical causes, they also concur that there is no evidence that the belief in the validity of natural astrology was substantially affected, but affirm its continued near-universal acceptance among literate elites.²¹ Such an attitude was not considered superstition or heresy, but part of mainstream science, albeit one whose particulars were accessible only to an educated minority. The condemnations of 1277 are thus best seen as a reactionary attempt on the part of a conservative faction within the church to control the teachings of more progressive clerics. In the later thirteenth century, with astrological knowledge and Aristotelian theory still confined largely to the clergy, these reactionary segments of the ecclesiastical establishment could still imagine such restrictions might work. At this time, too, the medieval world still retained its familiar, time-honored order and conventions—conventions that would be severely disrupted by the massive mortality of the Black Death in 1347–1350.

¹⁷ Grant, “The Condemnation of 1277,” 212.

¹⁸ Étienne Tempier, “219 Condemned Articles [excerpt]” [1277], tr. S. J. Tester, quoted in Tester, 177.

¹⁹ *Ibid.*; Van Nouhuys, 66.

²⁰ Tester, 177; Van Nouhuys, 66.

²¹ See Smoller, *History, Prophecy, and the Stars*, 15; Grant, *Planets, Stars, and Orbs*, 570; and Tester, 178.

Growth in the status of both natural astrology and natural philosophy in general nonetheless continued over the decades leading up to the Black Death. It is a measure of this growth that when Philip VI of France asked the medical faculty at the university of Paris to explain the causes of the epidemic, he received a response that was couched almost exclusively in astrological rather than theological terms. The report, delivered in October 1348, is a remarkable document that stands out from most other contemporary accounts due to the predominantly secular nature of its language. However, it may also have influenced many of those other accounts, either directly or by encouraging them to invoke other sources of astrological authority.

The report was already endowed with considerable prestige as a royal commission from one of the greatest intellectual centers of the age. But its credibility was no doubt further enhanced by its tone of supreme confidence, based on the assurance of both the universe's rational order and the capability of human intelligence to understand it. Following an opening admission that "seeing things which cannot be explained . . . stirs the human mind to amazement," the faculty anchored its comments solidly in the realm of rational knowledge, noting that "after marvelling, the prudent soul next yields to its desire for understanding."²² This understanding was not, apparently, to be found in the context of any relationship with God; to explain the plague's occurrence, the faculty had consulted not priests or visionaries, but "many modern experts on astrology and medicine."²³ Therefore, the faculty located the "universal and distant cause" of the pestilence in the conjunction of Saturn, Mars, and Jupiter in Aquarius in March 1345, and the "particular and near cause" of it in the subsequent corruption of the air occasioned by the conjunction.²⁴

Given the lag in time between the conjunction and the outbreak of the epidemic, a group of observers more inclined to view the plague in terms of divine punishment might have retrospectively chosen to view the conjunction as a sign. The concept of a final, failed warning from God, who still hesitated before unleashing his vengeance on a sinful humanity, would have had resonated on an instinctual level with many of the penitential sermons then being delivered. The faculty, however, presented the conjunction not as a warning, but as the direct agent of the epidemic, whose occurrence they never explicitly related to any

²² "Report of the Paris Medical Faculty on the Causes of the Plague" [1348], in *The Black Death*, trans. and ed. Rosemary Horrox (Manchester: Manchester University Press, 1994), 158.

²³ *Ibid.*

²⁴ *Ibid.*, 159–161.

human transgression. Nowhere in the report did the faculty mention sin as a potential cause for the plague, even for the purpose of rejecting such an argument. In fact, the report affirms early on that “there is within the human mind an innate desire to seize on goodness and truth.”²⁵ The distinctly humanistic ring of this statement may be seen as an indirect refutation of the concept that humans are inherently sinful. It may also represent a stance against the idea of the plague as punishment that the faculty hesitated to make more explicit.

Historians such as Smoller have argued, with considerable justification, that images of corruption in nature often function tacitly in plague narratives as metaphors for human sinfulness.²⁶ However, in the case of the medical faculty’s report, it is worth noting that the “corruption” of the air theorized to cause the plague in individuals was seen as having been introduced entirely from without. The “alien vapors” which resulted from the conjunction gave rise to the corrupted part of the air which, “when breathed in, necessarily penetrates the heart and corrupts the substance of the spirit there . . . destroy[ing] the life force.”²⁷ In this formulation, contracting the plague was thus an entirely natural (and involuntary) event, brought on by an external cause, and unrelated to spiritual status.

In addition, the “universal cause” at the end of the faculty’s chain of causality was not God, but the planets, depicted with considerable anthropomorphism as seemingly autonomous agents. Mars in particular was cited as “a malevolent planet, breeding anger and wars,” whose “hostile aspect . . . caused an evil disposition . . . in the air.”²⁸ The attribution of such qualities to the planets was no innovation, as it represented a firmly established part of astrological tradition, and admittedly derived as much from animistic as from mechanistic concepts of the universe. But the narrative effect of treating the planets as the primary actors in the celestial first act of the plague was to relegate God to a shadowy presence offstage. Simon de Covino would achieve this effect even more baldly in his allegorical plague poem of 1350, “The Judgment of Sol in the House of Saturn,” which presented the planets as personified classical deities, while mentioning the Christian God only in

²⁵ *Ibid.*, 158.

²⁶ Laura Ackerman Smoller, “Of Earthquakes, Hail, Frogs, and Geography: Plague and the Investigation of the Apocalypse in the Later Middle Ages,” in *Last Things: Death and the Apocalypse in the Middle Ages*, ed. Caroline Walker Bynum and Paul Freeman (Philadelphia: University of Pennsylvania Press, 2000), 162–163.

²⁷ “Report of the Paris Medical Faculty,” 161.

²⁸ *Ibid.*, 160.

passing in an explanatory prologue.²⁹ If the faculty had presented God as the prime mover of events, they might have legitimately argued that God relied on the planets as agents of corruption, either because he himself was too pure to generate corruption, or because he did so by choice (although this would still have undermined his omnipotence by relying on the action of intermediaries in exactly the fashion condemned in 1277). However, God's role in moving the planets into conjunction (or even passively electing *not* to prevent them from doing so) was nowhere mentioned in the report.

In fact, any reference to God as cause, whether first or otherwise, was completely absent from the body of the report's three-chapter explanation. Only in the final paragraph of the last chapter did the deity appear, in a statement that read almost like an afterthought—or perhaps a protective disclaimer: “We must not overlook the fact that any pestilence proceeds from the divine will, and our advice can therefore only be to return humbly to God.”³⁰ The faculty then proceeded to qualify even the dubious sincerity of this sentiment by associating the recommended submission to God not with theology, but with medicine. “Although God alone cures the sick,” the chapter concluded, “he does so through the medicine which in his generosity he provided.”³¹ This paragraph was the sole place in the explanation proper where God is even mentioned, although the general introduction to the report acknowledged “God's help” with its compilation in a similarly cursory manner.³²

Thus, in the faculty's report, God's most important practical role appeared to be that of an adjunct who could be relied upon to help humans sort out the order of natural causes. Yet even there, God's power did not seem to be absolute, as the supposed recipients of his aid claimed no certain revelation from it. The medical faculty's report was dominated by the theory that the plague resulted directly from the corruption of the air by the planetary conjunction, a theory supported by repeated appeals to the authority of Aristotle, Albertus Magnus, Ptolemy, Hippocrates, and other influential human sources. However, it also conceded that other hypotheses as to the plague's particular cause might in fact prove valid, admitting that the conjunction could have generated winds that stirred up “bad, rotten, and poisonous vapors” from swamps and corpses, or caused earthquakes that allowed such vapors to escape from the center

²⁹ Simon de Covino, “The Judgment of Sol in the House of Saturn [Prologue]” [1350], in Horrox, *The Black Death*, 165.

³⁰ “Report of the Paris Medical Faculty,” 163.

³¹ *Ibid.*

³² *Ibid.*, 158.

of the earth.³³ Finally, the report laid itself explicitly open to correction, at least in terms of natural philosophy, with an introductory declaration that “if we cannot explain everything as we would wish . . . it is open to any diligent reader to make good the deficiency.”³⁴

If centuries of readers have since detected many deficiencies in the explanation advanced by the medical faculty, the ultimate discrediting of astrological theory does not lessen the relevance of the basic principles expressed in their report. Its overwhelming focus on a determinism rooted in natural causes, as well as its confidence in the ability of human intelligence to observe and interpret those causes, both reflected and contributed to the expansion of the Aristotelian discourse of natural philosophy, of which astrology formed such a substantial part. Even in cases where the conjunction of the planets was rejected altogether as cause, such as in the contemporary German treatise that attributed the poisonous vapors to an earthquake in Carinthia, such determinism continued to obtain, along with the desire to present evidence “securely grounded in natural science.”³⁵

A treatise prepared in 1349 by a doctor at Montpellier, an important center of medical learning, provided another direct demonstration of this process. The Montpellier physician followed the report of the Paris medical faculty, with which he would have been familiar, in concluding that the conjunction was the “distant” cause of the plague.³⁶ However, he then proposed his own novel theory as to its immediate cause, namely that the dominance of Saturn in the conjunction had caused cold weather. This cooler weather had in turn slowed the growth of food plants, which then had to be eaten before they were ripe, causing sickness.³⁷ Such an explanation might have had theoretical origins in the long association of plants, particularly medicinal ones, with the heavenly bodies.³⁸ But it could also have been drawn from the memory of the illnesses and infirmities triggered by malnutrition during the Great Famine twenty years earlier.³⁹ The treatise thus relied at least in part on direct experience, as well as insisting on the natural causes of the epidemic in language more emphatic than that employed by the Paris

³³ *Ibid.*, 161.

³⁴ *Ibid.*, 159.

³⁵ “Is it from Divine Wrath that the Mortality of these Years Proceeds? [excerpt],” in Horrox, *The Black Death*, 177–178.

³⁶ “Treatise on the Epidemic from a Doctor at Montpellier [excerpt]” [1349], in Horrox, *The Black Death*, 182–183.

³⁷ *Ibid.*, 183.

³⁸ Tester, 24.

³⁹ William C. Jordan, *The Great Famine: Northern Europe in the Early Fourteenth Century* (Princeton: Princeton University Press, 1996), 115–118.

medical faculty: “The origins of this epidemic . . . are natural and not miraculous; for something is only ‘miraculous’ when it does not have a natural reason or cause.”⁴⁰ Implied was that God acted as a direct agent only in occurrences that defied the human ability to explain them in natural terms, such as miracles. But as this definition suggests, God’s stock of miracles, along with his sphere of influence, was bound to dwindle as more and more “natural reasons” came to light.

The reports of both the Paris medical faculty and the doctor at Montpellier accorded weight to both the celestial cause of the conjunction and more immediate earthly causes of air or weather. However, accounts that emphasized the effects of the heavenly bodies did not necessarily incorporate God any more fully into their explanation. Although such accounts concentrated their analyses on a realm believed to be closer to God in terms of both location and essence, in some sense compressing the chain of causality, the division between God and the mechanical operations of his creation remained substantial.⁴¹ The treatise of Geoffrey de Meaux was perhaps the most clear-cut example of this approach. In contrast with many practicing medical authorities who offered their verdict on the plague, de Meaux was a former court astrologer, and, therefore, kept his gaze trained almost single-mindedly on the heavens. De Meaux dispensed with God in a short preamble, during which he acknowledged God’s importance as prime mover, and admitted, “it can be said that everything which befalls us happens at the will of God.”⁴² He then invoked Aristotle, Ptolemy, and Plato in support of his statement that after God created the heavens, he “endowed them with the power to rule all earthly matter.”⁴³

In de Meaux’s subsequent discussion, God’s importance as first cause receded into insignificance. De Meaux was, in fact, primarily concerned with judicial rather than natural astrology, an orientation that might also have reflected his experience advising nobles rather than practicing medicine. Without omitting reference to the conjunction of 1345, de Meaux treated individual nativities (natal horoscopes), rather than exposure to corruption, as the decisive influence on the contraction of plague:

⁴⁰ “Treatise on the Epidemic,” 182.

⁴¹ Grant, in *Planets, Stars, and Orbs*, details the Aristotelian beliefs, which had been firmly established by the 1350s, that the heavenly spheres (like God) were perfect and immutable in their motions (192) and could not be related to the qualities of the corruptible sublunar sphere because they did not partake in them (195). He also discusses the concept that God occupied the outermost (empyrean) heaven (372).

⁴² Geoffrey de Meaux, “The Astrological Causes of the Plague,” in Horrox, *The Black Death*, 168.

⁴³ *Ibid.*

Should someone's nativity be the opposite of the configuration bringing mortality, the mortality would not touch them; but should his nativity be broadly similar to the configuration, it would be clear that he lacks the contrary forces by which he could resist it.⁴⁴

The ramifications of this argument were not only to severely circumscribe the "will of God" whose effects had been conceded earlier, but to limit the scope of man's free will. De Meaux did not hesitate to pursue this logic to its conclusion. It was only when "a person's nativity does not fully correspond to the configuration and yet is not totally contrary to it either" that their own choices, such as adopting a certain diet, could affect the outcome.⁴⁵ Of course, the question of why God would allow an eternal pattern of nature to automatically doom or spare people created a massive theological paradox. There is no way of knowing the precise content of de Meaux's religious beliefs, but here the naturalistic determinism of the texts previously discussed shaded into outright fatalism, at least where certain members of the human race are concerned.

The fatalistic overtones of astrology, combined with the very ancient treatment of stars as portents, made it highly compatible with the discourse of apocalyptic prophecy. Many texts produced in response to the plague of 1347–1350, including those whose authors were not experts in medicine or astrology, alluded to events that had strong symbolic associations in apocalyptic tradition. The proliferation of such associations was a predictable consequence of the trauma of the plague, when, as Agnolo di Tura bleakly reported, "[s]o many . . . died that everyone believe[d] it the end of the world."⁴⁶ The plagues and mass mortality of the Book of Revelations, the premier source of Christian apocalyptic imagery, unfolded in a landscape dominated by celestial signs: a sun gone black, a moon the color of blood, and skies filled with smoke and fire as well as thunder and lightning.⁴⁷ As Smoller has noted, such imagery was substantially replicated, alongside further apocalyptic signifiers such as earthquakes and reptiles, in accounts of the Black Death such as the chronicle of the Austrian monastery of Neuberg and the letter of Louis Heyligen.⁴⁸ The strength of apocalyptic tradition meant that even when potential portents appeared alone and unaccompanied by other symbols, as in the case of the unusual star Jean de

⁴⁴ *Ibid.*, 171.

⁴⁵ *Ibid.*

⁴⁶ Agnolo di Tura, "Chronicle of Siena [excerpt]," tr. Aubrey Threlkeld, in *The Black Plague: A Brief History with Documents*, ed. John Aberth (New York: Palgrave Macmillan, 2005), 80.

⁴⁷ Rev. 6:12, 8:4–10 (King James Version).

⁴⁸ Smoller, "Of Earthquakes, Hail, Frogs, and Geography," 157–158.

Venette reported sighting over Paris in August 1348, they carried distinctly apocalyptic connotations.⁴⁹

However, many of the narratives that incorporated apocalyptic overtones also showed an inclination to explain the plague at least partially in terms of natural science, specifically with regard to astronomical phenomena. This tendency testifies to both the considerable credibility which such explanations had gained in the years leading up to 1347, and to the plague's important role in contributing to their further dissemination by associating the astrological arts with the much more widespread apocalyptic discourse. Thus, the ephemeral, pulsating star described by de Venette might initially be read as a pure sign—something that merely accompanied the phenomena of the plague on earth without exerting any direct causative effect. However, de Venette also recorded that the star sent out many “separate beams of light” reminiscent of Abu’Mashar’s planetary rays, including rays oriented suggestively towards the east—the direction from which the plague would come.⁵⁰ De Venette also theorized about the star’s physical nature in language that implies that it might have arisen from the same natural phenomena as the plague, rather than having caused it. Significantly, he concluded that human expertise might settle the question: “Whether it was a comet or something else—perhaps something condensed from some sort of exhalations which then returned to vapor—I leave to the judgment of astronomers.”⁵¹ Similarly, the chronicler of Neuberg credited “the malignant influence of the planets and the corruption of the air” as a potential cause of earthly sickness, and also noted that the pestilence always peaked around the time of the new moon.⁵²

Smoller has maintained that many chroniclers chose to identify astrological phenomena associated with the plague as both signs *and* causes, employing deliberate ambiguity to hedge their bets in the wake of the long shadow cast by the condemnation of 1277.⁵³ However, the passages cited above displayed a clear focus on celestial bodies as agents of the pestilence, rather than insisting on their role as intermediaries of a distant God. They also sought to bolster their authority with repeated references to circulating scientific explanations, rather than prophecy or scripture.

Moreover, in their shared tendency towards determinism, astrological and apocalyptic explanations for the plague were far more closely

⁴⁹ Jean de Venette, “*Chronicle* [excerpt],” in Horrox, *The Black Death*, 55.

⁵⁰ *Ibid.*

⁵¹ *Ibid.*

⁵² “*Chronicle of the Monastery of Neuberg* [excerpt],” in Horrox, *The Black Death*, 59–60.

⁵³ Smoller, “Of Earthquakes, Hail, Frogs, and Geography,” 184.

allied than those that attributed the epidemic to sin. While the Last Judgment featured prominently in Christian visions of the world's end, sinfulness did not necessarily function to bring on the apocalypse directly. It was also quite possible to view the apocalypse as a strictly preordained event, whose coming had been fixed since the beginning of time, and would not be altered by human action. The two attitudes often appeared in the same text, such as in the chronicle of Gilles li Muisis. Li Muisis not only explicitly connected the plague with the sins of mankind, but also discussed prior predictions of dire events that would follow the conjunction of 1345, indirectly suggesting that the onset of the pestilence had been determined in advance by the workings of divine will.⁵⁴ More fatalistic strains of thought tended to minimize the role of human sin in triggering the plague, while simultaneously encouraging the study of the heavens. Whether the stars were interpreted as signs or causes, plague discourse provided a nexus in which their apocalyptic associations combined with Aristotelian notions of their constancy and power over the elements—a potent fusion that led to an increasing scrutiny of the stars in search of things to come.

The appearance of astrological references in texts dominated by the imagery of the Christian apocalypse was part of the wider pattern of their use in narratives produced by non-specialists. Though scattered, such allusions were perhaps even more significant than whole works that give astrological explanations for the plague. They reflected a growing awareness of the authority of astrology and natural philosophy even in circles whose members were necessarily well acquainted with such matters. When the monastic chronicler of St. Albans stated that pestilence arose “by the dominion of Saturn,” then immediately corrected himself, “or rather at the will of God,” this process momentarily revealed itself.⁵⁵ Boccaccio likewise indicated a familiarity with astrological explanations for the plague's origin in his introduction to the *Decameron*, although he ultimately left the question open: “Some say that it descended upon the human race through the influence of the heavenly bodies, others that it was a punishment signifying God's righteous anger at our iniquitous way of life.”⁵⁶ However, the subsequent agreement among chroniclers that the plague had failed to bring about any improvements in human behavior—indeed, Jean de Venette affirmed that after the pestilence, “evil spread like wildfire”—implicitly undermined

⁵⁴ Gilles li Muisis, “Chronicle [excerpt],” in Horrox, *The Black Death*, 48–49.

⁵⁵ “Chronicle of the Monastery of St. Albans [excerpt],” in Horrox, *The Black Death*, 252.

⁵⁶ Giovanni Boccaccio, “*The Decameron* [Introduction],” tr. G. H. McWilliam, in Horrox, *The Black Death*, 26.

Boccaccio's second suggestion.⁵⁷ This in turn helped pave the way for the radical supposition that God might be less involved in earthly affairs than previously thought, and that human agency might lie more in the observation of the natural world than in behavior dictated by man's relationship with God.

The first outbreak of the Black Death in Europe represented a pivotal moment in the transmission of a deterministic outlook found among the science of a small but influential minority to a wider and more varied public. The appearance of astrological explanations throughout plague discourse significantly increased the former's exposure. As the prominence of plague discourse reinforced and spread the acceptance of both natural and judicial astrology, it also led to an increase in the patronage available to support them. The fact that astrologers were routinely found in both lay and ecclesiastical courts by the end of the fourteenth century, as Tester notes, can be attributed in part to the surge of interest in astrology caused by the plague.⁵⁸ The French king Charles V's endowment in the 1360s of a new college of astrology and medicine in Paris should also be seen as part of this trend, particularly given that the college's foundation took place in the years immediately following the plague's second large-scale outbreak in 1361–1362.⁵⁹ Charles also commissioned the translation of Ptolemy's *Tetrabiblos* into the French vernacular. Such translations helped begin a long-term upsurge in both the consumption and popularization of astrology, which increased to such an extent that following the invention of the printing press in the fifteenth century, certain early publishing houses were able to specialize in astrological material quite profitably.⁶⁰

Smoller notes that predictions of the world's end based explicitly on astrological knowledge became increasingly common in the fifteenth and sixteenth centuries, and credits the convergence of apocalyptic and astrological ideas in responses to the first occurrence of the Black Death with helping to bring about this change.⁶¹ Such stellar determinism was consistent with the idea of a less interventionist God—even, at the extreme, a God whose designs might have been unfolding without change since the beginning of time. The scholastic philosopher Jean Buridan, who lived through the plague of 1347–1350, approached this concept in suggesting that the celestial orbs moved as a result of impetuses God had impressed on them at the creation, rather than through

⁵⁷ Jean de Venette, "Chronicle," 57.

⁵⁸ Tester, 196.

⁵⁹ Lemay, "The Teaching of Astronomy," 200, 202.

⁶⁰ Lemay, "The True Place of Astrology," 73.

⁶¹ Smoller, "Of Earthquakes, Hail, Frogs, and Geography," 166.

the continuous deployment of intermediaries.⁶² The image of a creator who had set the world in motion and then stepped back from it, perhaps forever, represented a decisive step in the transition from an animistic to a mechanistic universe. Although it would be premature to speak of a “disenchantment of the world” in the astrological explanations offered for the plague, since these explanations still incorporated a considerable amount of animism, they also served to amplify an existing deterministic discourse focused on nature rather than God as the immediate cause.

And yet, perhaps even as a result of the Church’s continued insistence on free will, the spread of this discourse did not give rise to a fatalistic passivity. Rather than adopting a Stoic philosophy of *amor fati*, the elites (and, ultimately, the commoners) of Europe became committed to the observation of nature, in the forms of both natural and judicial astrology, as a means of increasing their control over their own destiny.⁶³ Astrological interpretations of the plague of 1347–1350 thus functioned to enhance the perceived power and utility of human knowledge, as part of the general increase in the authority attributed to science that was already underway in the later Middle Ages.

Rebecca Johnson is currently in her final semester as a Master’s student in History at San Francisco State University. She graduated from Amherst College in 2003 with a double major in English and French. Starting this fall, she will be joining the History PhD program at Princeton University, where she plans to focus on the cultural and religious history of the late medieval and early modern Mediterranean.

⁶² Grant, *Planets, Stars, and Orbs*, 567.

⁶³ *Amor fati*: the fatalist “love of one’s fate,” or at least acceptance of it.