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Contagion, Causality, and Circumspection in a Late-Mamluk Digest of Natural Philosophy

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Introduction

In this article I introduce the hitherto unstudied Shafiʿi mystic ʿAbd Allāh Ibn Ayyūb al-Qādirī, who was born in Damascus around 1380 and died in Cairo around 1464. The details of Ibn Ayyūb's biography and written works offer insight into the professional ideals and intellectual commitments of the Islamic learned elite, or ulama, in late Mamluk Egypt. Like many aspiring members of this elite, Ibn Ayyūb was born to a respectable scholarly family, impressed early peers and educators with his intelligence, and traveled to Cairo as a young adult to pursue a career in law. Biographical sources indicate that Ibn Ayyūb ultimately failed to launch this legal career and instead became an attendant at a mystics' lodge in Cairo. Nevertheless, these same sources record how highly Ibn Ayyūb's professional and pietistic reputation rated with the ulama of the city. Colleagues cited his acumen, scrupulousness, and engagement with their intellectual pursuits as especially worthy scholarly attributes. They also spoke approvingly of his charismatic powers, including an ability to enthrall colleagues with his presence, convert non-Muslims to Islam through simple conversation, and foresee events like the Timurid invasion of Syria. Despite the frustration of Ibn Ayyūb's legal aspirations, such favorable accounts of his erudition, scruples, and preternatural abilities provide important context for how the learned elite of the late-Mamluk era articulated the criteria for scholarly excellence. These criteria notably went beyond the achievement of institutional standing to encompass broadly valued interpersonal and less tangible attributes like disciplinary mastery, intellectual probity, and charisma.

While some of Ibn Ayyūb's writings have not survived, contemporary and later biographies credit him with extant treatises on medicine, etiquette, and natural philosophy. To my knowledge, these treatises remain in unstudied Arabic manuscript. They therefore merit attention for what they promise to reveal about the intellectual and ethical debates surrounding these discourses in the era, especially as these came to bear on notions of scholarly excellence. To this end, I will give an analysis of the opening folios of Ibn Ayyūb's most important treatise on natural philosophy, a digest titled "Sadd al-dhirāʾiʿ min al-qawl bitaʾthīr al-ṭibāʾiʿ," or "Blocking the Means of Harm Caused by Teaching the Causal Efficacy of Natures." The work survives in a single manuscript held by the

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Chester Beatty (CBL MS Ar 5162). Ibn Ayyūb frames this brief and often elliptical treatise as an objection to the public espousal of natural causal efficacy. This position argues that entities such as celestial bodies, miasmas, and humors are necessarily caused by their own elemental natures, and exert influence over other such entities through these natures without the need for divine mediation. From the interactions of these natures arise phenomena like contagious disease, the healing properties of medicine, and the reliability of astrological prognostication, which each appear to operate according to predictable patterns of cause and effect. This view hangs in tension with Ashʿarī teachings on divine agency, which hold that these apparent causal relationships are merely the result of God's habitual creative activity, and are subject to change according to his will. An Ashʿarī himself, Ibn Ayyūb reserves his harshest criticism in "Blocking the Means" for those who consider natural causal efficacy to be logically demonstrable. He urges readers to hew instead to the more defensible position that such natures only possess causal efficacy insofar as it is delegated to them by God. By his lights, the advantages of this position include both a lack of demonstrative pretension and better alignment with the shariʿah's outward teaching *(ẓāhir al-sharīʿah)* that God's habitual actions alone determine sequences of events that humans perceive as cause and effect. "Blocking the Means" is, as Ibn Ayyūb puts it, a didactic exercise *(tamrīn)* meant to acquaint students with this controversial subject and preempt any harm to the Islamic community caused by misunderstanding its logical bases. He references this intention in the title of the treatise by invoking *sadd al-dhirāʾiʿ,* a legal ruling by which a licit activity may be restricted if it reliably precipitates an illicit activity.[1]

I contend that this reference, along with Ibn Ayyūb's stated purpose to preserve merely the outward teaching of the shariʿah, suggests his ambivalence about categorically dismissing the position that natures may possess a greater degree of causal efficacy than can be logically demonstrated. For Ibn Ayyūb, it is out of an abundance of epistemological caution that the ulama should avoid publicly espousing natural causal efficacy, since it may threaten the religious integrity of the Islamic community by undermining belief in God's causal agency. Even so, he insists that physicians should remain free to act as though natural causal efficacy were real in order to practice their medicine most effectively in that community. Both this ambivalence and plea for epistemological circumspection are evident in Ibn Ayyūb's treatment of the phenomena explored in the

[1]Mawil Y. Izzi Dien, "Sadd Al-Ḏẖ arāʾiʿ," *Encyclopaedia of Islam,* 2nd ed., http://dx.doi.org/10.1163/1573-3912_islam_SIM_6414; Justin K. Stearns, *Infectious Ideas: Contagion in Premodern Islamic and Christian Thought in the Western Mediterranean* (Baltimore, 2011), esp. 110–15; Mohammad Hashim Kamali, *Principles of Islamic Jurisprudence* (Cambridge, 2003), 310–20, as cited by Stearns above, where the legal principle's varying applications and subtypes are defined.

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opening folios of "Blocking the Means"—contagion, the utility of medicine, and the accuracy of astrological prediction—whose apparently natural chains of cause and effect raise important questions about the determinative principles of reality.

Moreover, I argue that the distinction Ibn Ayyūb draws between preventing fallacious reasoning from corrupting scholarly discourse on the one hand and categorically rejecting the possibility of natural causal efficacy on the other reveals much about the worldview of his fellow ulama. By the late-Mamluk era, these urban professionals had come to understand themselves as an elect class of Muslims who alone could safely evaluate compelling philosophical propositions that seemed to challenge theological beliefs. Among the most noted examples of this prerogative at play in wider Islamic intellectual history is Abū Ḥāmid al-Ghazālī's (d. 1111) critique of Ibn Sīnā's (d. 1037) philosophical system. In his *Tahāfut al-falāsifah* and other treatises, al-Ghazālī questioned the ability of Avicennan Peripatetics to substantiate positions he found to be incompatible with Ashʿarī monotheism, and required all challenges to the outward teaching of the shariʿah to meet the highest standards of demonstration. The degree to which al-Ghazālī rejected natural causal efficacy on these grounds remains an area of some debate today.[2] Certainly, then, Ibn Ayyūb's own efforts to navigate this topic in the fifteenth century gives evidence that the ulama remained interested in the proposition through the later medieval period. Further still, I argue that Ibn Ayyūb wrote "Blocking the Means" not simply to appraise a compelling claim about the world he believed presented tension for his theological beliefs, but that he also did so to restate the standards of inquiry that defined the pursuits of the scholarly class to which he belonged, and to exhibit to his colleagues his own rigorous adherence to those standards. Against the backdrop of Ibn Ayyūb's reputation for charisma, sincerity, and scrupulousness, the following analysis of "Blocking the Means" offers insight into the character of natural philosophical debates in late Mamluk Cairo, as well as the care their participants took to project their ideals of scholarly excellence in an era of intense professional competition. This twofold interest presents a fruitful challenge to Ibn Ayyūb in the opening folios of "Blocking the Means," through which he labors to speak coherently and appropriately about etiology, therapeutics, and prognostics—fields of knowledge he believes the properly initiated scholar may use to access divine truths hidden in the natural order of the world.

[2]Luis Xavier López-Farjeat, "Causality in Islamic Philosophy," in *The Routledge Companion to Islamic Philosophy,* ed. Luis Xavier López-Farjeat and Richard C. Taylor (London, 2015), from 137; Frank Griffel, *The Formation of Post-Classical Philosophy in Islam* (New York, 2021), 228.

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Medicine and Natural Philosophy in the Mamluk Era

ʿAbd Allāh Ibn Ayyūb al-Qādirī came of age in an era of political tumult and intellectual florescence. By the time of his birth the Mamluk Sultanate had ruled Egypt and the Levant for the better part of two centuries. By the end of his young adulthood it would have successfully repelled Crusader, Mongol, and Timurid incursions into its territory and survived a succession of internal political revolts, food shortages, and epidemics. Amid these upheavals the Mamluks sought legitimation of their rule from the ulama, the class of learned elites who administered the legal, religious, and educational institutions which the sultanate had charitably endowed from the mid-thirteenth century onward. Ulama circulated throughout the urban centers of the sultanate to vie for appointment to these institutions, where prominent academic families carefully guarded access to the offices and practices of learning that underwrote their high sociocultural status. Friction between the ulama's desire to accede to positions at these institutions and their oft-stated commitment to the cultivation of knowledge for its own sake led to their developing an expansive literary idiom to discuss the means of advancing professionally without sacrificing their religious and intellectual integrity. The ulama developed this idiom most explicitly in treatises of professional etiquette, or *ādāb,* where they argued that a respectable scholarly career could only be achieved through years of study, lifelong deference to teachers, and a pious aversion to wealth and self-promotion. Within such texts of professional formation, and indeed across their broader ethical deliberations, the ulama advised one another to remain vigilant against the decline of their moral judgement by limiting contact with political elites and exercising extreme caution when handling knowledge gained from sources other than their trusted mentors. As offices like the jurisconsult, preacher, and instructor attained greater definition and stature under Mamluk patronage, the ulama increasingly cited scholarly attributes derived from these larger ethical considerations—like disciplinary mastery, intellectual probity, and ascetic living—as the most important markers of repute within their own circles. [3]

[3] Michael Chamberlain, *Knowledge and Social Practice in Medieval Damascus, 1190–1350* (Cambridge, 2002), 1–26; Erina Ota-Tsukada, "Formation of the Ideal Bureaucrat Image and Patronage in the Late Mamlūk Period: Zayn Al-Dīn Ibn Muzhir and ʿUlamāʾ," *Al-Madaniyya* 1 (2021): 41–61; Roy Mottahedeh. "The Transmission of Learning: The Role of the Islamic Northeast," in *Madrasa: la transmission du savoir dans le monde musulman,* ed. Nicole Grandin and Marc Gaborieau (Paris, 1997), 63–72; Amalia Levanoni, "A Supplementary Source for the Study of Mamluk Social History: The Taqārīẓ," *Arabica* 60, nos. 1–2 (2013): 146–77; Nahyan Fancy, *Science and Religion in Mamluk Egypt: Ibn al-Nafis, Pulmonary Transit, and Bodily Resurrection* (London, 2013), 16–35; Ira M. Lapidus, "Knowledge, Virtue, and Action: The Classical Muslim Conception of *Adab* and the Nature of Religious Fulfillment in Islam," in *Moral Conduct and Authority: The Place of Adab in South Asian Islam,* ed. Barbara Daly Metcalf (Berkeley, 1984), 38–61.

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The material conditions that bound the professional aspirations of the ulama together with the political interests of their Mamluk patrons received great attention in the second half of the twentieth century. Influential historians of this topic include Ira M. Lapidus, Carl F. Petry, Michael Chamberlain, and Jonathan P. Berkey, who focused less on the content of the ulama's intellectual activities in the era and more on their stratification as elites at prestigious institutions of learning. Historians have more recently begun to investigate the intellectual production of the late medieval ulama itself. This has especially concerned the relationship of the legal, ascetic, and traditionalist discourses that flourished under Mamluk patronage with developments in astronomy, anatomy, and medicine—fields long thought to have been subjected to the ulama's increasing dogmatism in the later medieval period.[4] Nahyan Fancy has persuasively shown that ulama of the Mamluk era in fact congregated at endowed institutions of learning in order to evaluate competing claims made by both the religious and rational sciences, debating the rigor but not the fundamental legitimacy of discourses like medicine and natural philosophy. Preeminent biographers of the era such as Shams al-Dīn al-Dhahabī (d. 1348), Ṣalāḥ al-Dīn al-Ṣafadī (d. 1363), and Tāj al-Dīn al-Subkī (d. 1370) not only refrained from censuring jurists, traditionalists, and theologians for their significant investment in these rational sciences, but, more remarkably, commended their efforts to systematize these discourses in the post-Avicennan era.[5]

It was in this vibrant intellectual milieu that Ibn Ayyūb was formed as a scholar, and in which his treatise on the relevance of natural philosophy, astrology, and disease transmission to the intellectual standards of the Mamluk-era ulama should be understood. By the time of his writing debates about whether diseases were truly communicable in themselves or else a phenomenon of divine activity in the world were longstanding in Islamic intellectual societies. The Hippocratic-Galenic medical system advanced by Islamic physicians since the early medieval era held that all things were comprised of the four elements and their corresponding qualities: fire/hot, earth/cold, air/dry, and water/wet.

[4] See the note above, as well as Ira M. Lapidus, *Muslim Cities in the Later Middle Ages* (Cambridge, 1984); Carl F. Petry, *The Civilian Elite of Cairo in the Later Middle Ages* (Princeton, 2014); Jonathan P. Berkey, *The Transmission of Knowledge in Medieval Cairo: A Social History of Islamic Education* (Princeton, 2014); idem, "'Silver Threads among the Coal': A Well-Educated Mamluk of the Ninth/Fifteenth Century," *Studia Islamica* 73 (1991): 109–25; Chamberlain, *Knowledge and Social Practice;* M .A. J. Beg, "Al-K̲ h̲ āṣṣa Wa 'l-ʿĀmma," *EI2*, http://dx.doi.org/10.1163/1573-3912_islam_SIM_4228. See also Oliver Leaman, "Continuity in Islamic Political Philosophy: The Role of Myth," *Bulletin of the British Society for Middle Eastern Studies* 14, no. 2 (1987): 147–55; Joan E. Gilbert, "Institutionalization of Muslim Scholarship and Professionalization of the ʿUlamāʾ in Medieval Damascus," *Studia Islamica* 52 (1980): 105–34.

[5] Fancy, *Science and Religion,* 16–27.

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These elements and qualities further inhered in the four humors—yellow bile, black bile, blood, and phlegm—which existed in varying proportions within human bodies. These proportions determined each individual's physical characteristics as well as their cognitive skills and personality traits. Physicians believed that keeping a body's proportion of humors in its idiosyncratic balance constituted its health; illnesses arose when this balance was upset by poor diet, emotional turbulence, miasma, and other external influences, or else by the putrefaction of one or more humors within the body. When such an illness inevitably struck, the physician's task was first to identify their patient's original balance of humors and then to prescribe diets, drugs, or other regimens to restore it to this state. [6]

A watershed moment in the trajectory of this medical system came in the eleventh century, when Ibn Sīnā decisively correlated its claims with Aristotelian and Neoplatonic cosmology. Like other Peripatetics before him, Ibn Sīnā argued that the cosmos was created by the emanation of a necessarily existing, uncaused God. The self-contemplation of this God produced subsidiary intellects that eventually brought physical reality into being through emanations of their own. In so doing, these intellects imparted the concentric spheres of the cosmos with stable elemental natures, or *ṭibāʾiʿ* (sing. *ṭabīʿah*), "a certain principle and cause on account of which the thing in which it is primarily is essentially, not accidentally, moved and at rest." [7] In other words, these natures were what essentially caused celestial bodies like the sun, moon, planets, and stars to move around the earth in unchanging rotations. These rotations exerted predictable influences over elemental substances on the earth; thence came the invariable qualities of the seasons and climes, as well as the humoral composition of humans, plants, and animals. The interaction of the humoral natures inhering in these beings accounted for the processes of growth and decay typical of their earthly existence, including falling sick and being healed. From the most extended point of view, the knowable and predictable interactions of all such natures formed the basis for patterns of cause and effect that rational beings like humans can observe in daily life—e.g., cloth reliably ignites when it comes into contact with fire because it is in the natures of cloth and fire to cause ignition when the two are brought together, just as certain humoral imbalanc-

[6] See the introductory summary in Ibn Riḍwān, *Medieval Islamic Medicine: Ibn Ridwan's Treatise "On the Prevention of Bodily Ills in Egypt,"* ed. Adil S. Gamal, trans. Michael W. Dols (Berkeley, 1984), 1–41.

[7] As cited in Jon McGinnis, "The Establishment of the Principles of Natural Philosophy," in *Routledge Companion to Islamic Philosophy,* ed. López-Farjeat and Taylor, 120; see also idem, "Natural Knowledge in the Arabic Middle Ages," in *Wrestling with Nature From Omens to Science,* ed. Peter Harrison et al. (Chicago, 2011), 59–82.

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es cause certain illnesses to develop and certain drugs cause their resolution. Crucially, proponents of Ibn Sīnā's system claimed that the apparent causal autonomy of natures across these events was consistent with Islamic monotheism. This was because such entities were the result of a necessary, uncaused God's first emanation, whose concomitants—like natures themselves—could not exist in his absence. Foundational Ashʿarī theologians like al-Bāqillānī (d. 1013) and al-Juwaynī (d. 1085) were nonetheless troubled by the population of the cosmos with subsidiary intellects that were seemingly unconstrained by God's creative agency. They favored theories of causality based on the efficacy of God's will alone, which they believed to determine the course of all events down to the individual atoms of the substances involved, without the mediation of natures. Further developing these theories, al-Ghazālī influentially argued that observed patterns of cause and effect were merely God's creative habit *(ʿādah)* and therefore could not be naturally or necessarily entailed. As the only true *fāʿil,* or Agent, determining the events of reality, God could freely alter his habit *(kharq al-ʿādah)* at any moment in order to prevent causes from having their conventional effects, such that cloth placed in fire might fail to ignite if he so willed, and diseases might fail to be healed by medicines that typically do so.[8]

It remains a matter of debate as to whether al-Ghazālī rejected the existence of natures outright, or simply sought to reduce them to secondary causes channeling God's will. In any event, ulama of the later medieval period remained interested in this debate as it related to the cure and transmission of disease—and especially whether medicines resolved illnesses independently of God's will by the interaction of their natures with morbid humors, and whether morbid humors could spread from person to person by the similar interaction of their natures with healthy bodies. This debate is thought to have received renewed attention in the Mamluk era, which witnessed several epidemics including the devastating bubonic plague of the fourteenth century. In the latter case, doubt about the validity of medicine and the natural principles underlying it pur-

[8] Steven C. Judd, "The Early Qadariyya," in *The Oxford Handbook of Islamic Theology,* ed. Sabine Schmidtke (Oxford, 2016), 44–54; Taneli Kukkonen, "Possible Worlds in the *Tahafut Al-Falasifa:* Al-Ghazali on Creation and Contingency," *Journal of the History of Philosophy* 38, no. 4 (2000): 479–502; Omar Edward Moad, "Al-Ghazali's Occasionalism and the Natures of Creatures," *International Journal for Philosophy of Religion* 58, no. 2 (2005): 95–101; Hans Daiber, "God versus Causality: Al-Ghazālī's Solution and Its Historical Background," in *Islam and Rationality,* vol. 1, ed. Georges Tamer (Leiden, 2015), 1–22; Jamil Ragep, "Freeing Astronomy from Philosophy: An Aspect of Islamic Influence on Science: Science in Theistic Contexts: Cognitive Dimensions," *Osiris* 16 (2001): 49–71.

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portedly grew in the wake of what many considered to be an incurable disease brought on by divine judgement. [9]

Historians working in the twentieth century generally contended that such doubt grew predominant among Hanbali ulama—who objected to natural philosophy on traditionalist grounds—and was increasingly shared by scholars outside of their legal school in the Mamluk era. Prophetic traditions cited in support of their position included Muḥammad's avowal that "there is no contagion *[ʿadwá],* no augury *[ṭīrah/ṭiyarah],* no bird portending death *[hāmah],* no serpentine jaundice *[ṣafar],*" and, when questioned about the observed spread of mange among camels, his challenge: "Who [but God] caused the first camel to grow sick?" [10] Ignác Goldziher influentially theorized that arguments against contagion based in these traditions became so compelling by the later medieval period as to have caused Muslims of all stripes to divest from medical and natural philosophical discourses in favor of the law and religious sciences. The influential plague treatise written in the last century of the Mamluk era by the Shafiʿi traditionalist Ibn Ḥajar al-ʿAsqalānī (d. 1449)—who rejected the disease's transmissibility even on the basis of God's *ʿādah,* and argued instead that God deputized the jinn to infect bodies with the illness—has been cited to substantiate this claim. Similarly, historians have pointed to the bloom of the Prophetic-medical genre as evidence that Hippocratic-Galenic medicine was largely subjugated to the ulama's religious commitments by the Mamluk era. More recent studies have called the scope of these conclusions into question, pointing to the considerable nuance that Hanbali jurists and ulama in general brought to debates about medicine and contagion. Ibn Ḥajar, for example, may have attributed the plague to the divinely-sanctioned actions of the jinn, but he also stated that humoral explanations for the epidemic had merit. This was so, he argued, because the explanatory power of medicine was confined to earthly phenomena like the diagnosis and treatment of disease. It was the wrong science to use for

[9] Lawrence I. Conrad, "A Ninth-Century Muslim Scholar's Discussion of Contagion," in *Contagion: Perspectives from Pre-Modern Societies,* ed. Dagmar Wujastyk and Lawrence I. Conrad (New York, 2000), 163–77; idem, "Epidemic Disease in Formal and Popular Thought in Early Islamic Society," in *Epidemics and Ideas: Essays on the Historical Perception of Pestilence,* ed. Terence Ranger and Paul Slack (New York, 1992), 77–99; Josef van Ess, *Der Fehltritt des Gelehrten: die "Pest von Emmaus" und ihre theologischen Nachspiele* (Heidelberg, 2001), esp. as cited by Stearns, *Infectious Ideas,* 15, 26. This purported effect of the plague was recently summarized by Nükhet Varlik (*Plague and Empire in the Early Modern Mediterranean World: The Ottoman Experience, 1347–1600* [Cambridge, 2015], 211, as follows: "The Black Death was like nothing else; its speed of propagation and the high mortality it caused were not comparable to anything known in the recent past. Plague was seen as a celestial disaster, a catastrophe, and a cataclysmic event. For most, it was a sign of the impending apocalypse, the end times themselves."

[10] See these traditions as cited by Stearns, *Infectious Ideas,* 16, n. 13 and 25, n. 85.

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discerning the ultimate cause of plague, however, which fell instead within the purview of theology. Similarly, Irmeli Perho documented how the earlier Hanbali jurisprudent Ibn al-Jawzī (d. 1201) argued that the contagion *(ʿadwá)* mentioned by the prophetic traditions above referred to an Arabian superstition unrelated to the humoral transmission of disease. For him, the latter was "an observable aetiological fact." Ibn Taymīyah (d. 1328), the later Hanbali polemicist long characterized as hostile to intellectual pursuits beyond the religious sciences, also acknowledged the existence of natures, stating in his *fatāwá* that medicine, natural philosophy, and astronomy were useful discourses inherited from non-Islamic societies and subsequently perfected by Muslims. His student Ibn Qayyim al-Jawzīyah (d. 1350) further argued that, notwithstanding the need to affirm God's causal independence in theological contexts, ulama must concede that certain diseases are apparently contagious and curable through medical treatment. To his mind, theologians who equated belief in contagion with disbelief in God's agency, as well as the natural philosophers and physicians who made no room for this agency in their own arguments, were equally at fault for misrepresenting the strength of their claims.[11]

[11] See the important summary in Guy Attewell, "Islamic Medicines: Perspectives on the Greek Legacy in the History of Islamic Medical Traditions in West Asia," in *Medicine Across Cultures: History and Practice of Medicine in Non-Western Cultures* (New York, 2003), 325–50, and, notably, Paulina B. Lewicka, "Diet as Culture: On the Medical Context of Food Consumption in the Medieval Middle East," *History Compass* 12, no. 7 (2014): 607–17, especially 612: "One of the most important features of the post-12th-century period was an increasing radicalization of Islam as well as its growing domination of the culture of Dār al-Islām. One of the results of this long-term and complicated process was that medicine, once free of theology and religion, gained a religious attribute and lost its universal character, while much of the knowledge relating to the Greek medico-philosophical doctrine fell into oblivion, either oversimplified and confused, or combined with the Muḥammadan dietary tradition as featured in the so-called medicine of the Prophet." Cf. Irmeli Perho, "Ibn Qayyim Al-Ǧawziyyah's Contribution to the Prophet's Medicine," *Oriente Moderno* 90, no. 1 (2010): 189–210, for its treatment of these Hanbali ulama as well as its own summary of historians who have refuted such claims, including those influentially offered in such classic works as Ignác Goldziher, *Stellung der Alten Islamischen Orthodoxie zu den Antiken Wissenschaften* (Berlin, 1916), Michael W. Dols, *The Black Death in the Middle East* (Princeton, 1977), and, to a substantially lesser extent, Dimitri Gutas, *Greek Thought, Arabic Culture* (London, 1998). For the same, see also Irmeli Perho, *The Prophet's Medicine: A Creation of the Muslim Traditionalist Scholars* (Helsinki, 1995), especially 65–83 and 91–99. Ibn Ḥajar's plague treatise has been recently translated into English by Joel Blecher and Mairaj Syed, who render the passage referenced above as follows: "The plague is a distinct type of pestilence because of its cause, the equivalent of which does not exist in any of the other pestilences. It is caused by 'the pricks of the jinn.' In my view, this fact does not conflict with the opinion of the physicians, discussed previously, that the plague results from poisonous matter or a stirring up of blood or the flowing of it to a body part, and so on. This is because there is nothing that prevents these from being ultimately generated by a hidden act of a jinn's piercing. This piercing can generate poison-

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Within the realm of late-medieval medicine itself, Fancy has shown that Ibn Abī Uṣaybiʿah's (d. 1270) biographical dictionary of physicians, the *ʿŪyun al-anbāʾ,* indicates consistent scholarly investment in medicine throughout the Mamluk period. Luminaries like Fakhr al-Dīn al-Rāzī (d. 1210), Ibn al-Nafīs (d. 1288), Quṭb al-Dīn al-Shīrāzī (d. 1311) and, much later, Ibn al-Mubārak al-Qazwīnī (d. 1521) amply discussed Avicennan potentiality, actuality, and motion as they came to bear on topics of medical interest like human physiology, the circulation of blood, and the faculties of the soul. Per Sonja Brentjes and Ahmed Ragab, Mamluk ulama engaged in these sophisticated debates as part of an ongoing effort to integrate the compelling disciplines of medicine, logic, and natural philosophy with traditionalist, theological, ethical, and legal discourses.[12] In much the same vein, Justin K. Stearns documented the diversity of opinions concerning contagion and causality well beyond the domains and centuries of the Mamluk Sultanate. Rather than single-mindedly reject contagion on theological grounds, ulama from the Levant to Andalusia harbored complex attitudes about the topic based in their varying intellectual commitments, sociocultural roles, and historical circumstances. They included jurists expressing legal and ritual obligations concerning the spread of disease in the absence of centralized state apparatuses, physicians applying ancient medical theories to their own clinical observations, theologians contesting natural philosophical terms with a view toward protecting the faith of ordinary believers, and moralists emphasizing faith in divine providence and the importance of caring for the sick during epidemics.[13]

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ous matter, or cause the blood to stir up or flow toward a body part. Physicians cannot object to this claim…because the pricks of the jinn cannot be grasped by reason or sensory experience; rather, we can only attain knowledge of it from the report of the Law Giver. Physicians may only speak of what results from that piercing to the degree permitted by the principles of their science." Ibn Ḥajar al-ʿAsqalānī, *Merits of the Plague,* ed. and trans. Joel Blecher and Mairaj Syed (London, 2023), 22–23. For more context, see the introduction, ix–xxxv.

[12] For the impact of Ibn Sīnā on later medieval medical thinkers in this respect, see Nahyan Fancy, "Post-Avicennan Physics in the Medical Commentaries of the Mamluk Period," *Intellectual History of the Islamicate World* 6, nos. 1–2 (2018): 55–81; at 65 Fancy states that the above-named individuals' "commentaries thus demonstrate that erudite universal scholars skilled in medicine and philosophy continued to exist throughout the Mamluk period." See also Fancy, *Science and Religion,* 16–21; at 19 Fancy cites Sonja Brentjes, "On the Location of the Ancient or 'Rational' Sciences in Muslim Educational Landscapes (AH 500–1100)," *Bulletin of the Royal Institute for Inter-Faith Studies* 4, no. 1 (2002): 47–71, but these conclusions were more recently and compellingly offered in idem, *Teaching and Learning the Sciences in Islamicate Societies (800–1700)* (Turnhout, 2018). On how medical and pietistic discourses became intertwined in the Mamluk era, see Ahmed Ragab, *Piety and Patienthood in Medieval Islam* (New York, 2018), esp. 171–212.

[13] Stearns, *Infectious Ideas,* esp. 13–36, 67–90, and 106–59; per 67–90, it should be noted that some early Mashriqi traditionalists, as well as fourteenth-century Maghrebi authors, were willing

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Interventions of the sort brought by Perho, Fancy, Brentjes, Ragab, and Stearns have been a welcome departure from scholarship that has often reduced the late medieval ulama's engagement with this topic to a "reconciliation," "middle position," "compromise," or, at best, "constructive engagement"[14] between religious disciplines and natural philosophy in an era viewed as inherently hostile to the latter. This now-discarded view has distracted from the ulama's consistent engagement with medical and natural philosophical debates related to contagion and causality in this highly synthetic, interdisciplinary era. This engagement, I argue, proceeded from the ulama's sincere belief in their responsibility to seek a means of reasoning coherently and conscientiously across discourses of consequence to the Islamic community. Despite their erstwhile characterization as staid legalists and theologians, ulama of the Mamluk era valued a highly eclectic intellectual diet and did not view disciplines like medicine and natural philosophy as alien, sealed spheres of knowledge with little to offer law or theology. These were understood to be valid branches of scholarly knowledge whose arguments required evaluation according to the standards governing all areas of the ulama's inquiry. While they were often rated as derivative fields whose truth claims fell short of those provided by logic and other rational sciences, medicine and natural philosophy generated vibrant debate among the ulama, who addressed the relevance of these discourses to their scholarly endeavors and identity throughout their careers.[15] This was equally true of ʿAbd Allāh Ibn Ayyūb al-Qādirī, to whose biography and written corpus we now turn.

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to accept the communicability of diseases like plague and leprosy. More on this below, but see also idem, "The Legal Status of Science in the Muslim World in the Early Modern Period: An Initial Consideration of Fatwās from Three Maghribī Sources," in *The Islamic Scholarly Tradition,* ed. Asad Q. Ahmed et al. (Leiden, 2011), 265–90. On legal considerations related to the communicability and mortality of leprosy in particular, see Michael W. Dols, "The Leper in Medieval Islamic Society," *Speculum* 58, no. 4 (1983): 891–916.

[14] Ragep, "Freeing Astronomy," 53–57, 64; Frank Griffel, "Al-Ghazālī at His Most Rationalist: The Universal Rule for Allegorically Interpreting Revelation *(al-Qānūn al-Kullī fī t-Taʾwīl),*" in *Islam and Rationality,* ed. Tamer, 89–120; Liana Saif, "The Arabic Theory of Astral Influences in Early Modern Medicine," *Renaissance Studies* 25, no. 5 (2011): 609–26. In Ibn Riḍwān, *Medieval Islamic Medicine,* 40, Michael Dols states plainly that "a fundamental conflict between science and theology" characterized medieval Islamic medicine, a sentiment shared by Franz Rosenthal. For the related claim that advancements in medicine ceased following the career of Ibn Sīnā, see Dimitri Gutas, "Medical Theory and Scientific Method in the Age of Avicenna," in *Before and after Avicenna: Proceedings of the First Conference of the Avicenna Study Group* (Leiden, 2003), 160–62.

[15] Chamberlain, *Knowledge and Social Practice,* 86; Fancy, *Science and Religion,* esp. 1–13, where there is a helpful review of the literature advancing older characterizations of this era and a critique of the term "natural philosophy." See also 13–68 for Ibn al-Nafīs's life and an important argument for contextualist approaches to the history of Islamic medicine. See also Miquel Forcada, "Ibn Bājja and the Classification of the Sciences in Al-Andalus," *Arabic Sciences and Phi-*

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The Life and Reputation of ʿAbd Allāh Ibn Ayyūb al-Qādirī

ʿAbd Allāh Ibn Ayyūb al-Qādirī's life and scholarly activities are described by obituary notices in three important biographical dictionaries of the late-Mamluk period: Ibn Taghrībirdī's (d. 1470) emendation of his *Nujūm al-ẓāhirah,* Ibn ʿUmar al-Biqāʿī's (d. 1480) *ʿUnwān al-zamān,* and Shams al-Dīn al-Sakhāwī's (d. 1497) *Ḍawʾ al-lāmiʿ*.[16] These texts offer insight into the sociocultural formation of the ulama in this era, featuring descriptions of the intellectual endeavors and interpersonal skills they cultivated in order to enhance their standing among peers and patrons. Often written on behalf of deceased teachers by their students, these dictionaries are not repositories of pure fact about the lives of the ulama they eulogize. Rather, younger generations of scholars wrote these accounts of their forebears in service of creating what has been aptly called the ulama's "useful past"—that is, a past "intended to secure their futures" by advancing an ideal vision of scholarly society, through whose description junior ulama learned about the lifestyles and personal dispositions needed to advance through the ranks. In this respect, the genre had, by the Mamluk era, become a pivotal arena in which the ulama defended both their sociocultural status and their intellectual principles. They did so in large part by lionizing scholarly figures they believed to best represent the values of their class and excluding mention of those who did not. Ibn Ayyūb's enthusiastic inclusion in three of these sources is therefore a good indication that his life and writings were thought to embody the professional and pietistic values prized by his contemporaries.[17]

Likely due to its inclusion in an emendation to his larger work, Ibn Taghrībirdī's entry for Ibn Ayyūb is brief and contains no mention of his literary output. Born and raised in Damascus, Ibn Ayyūb, like many ambitious men of his generation, left for Cairo as a young adult. Ibn Taghrībirdī notes nothing of his activities

losophy 16, no. 2 (2006): 287–307, as well as the older contribution by Wolfheart Heinrichs, "The Classification of the Sciences and the Consolidation of Philology in Classical Islam," in *Centres of Learning,* ed. Jan Willem Drijvers and A. A. MacDonald (Leiden, 1995), 119–39; Brentjes, *Teaching and Learning,* esp. 77–146.

[16] It should be noted that references to Ibn Ayyūb are absent from other major biographical sources of the period consulted for this article, including al-Maqrīzī, *Kitāb al-sulūk li-maʿrifat duwal al-mulūk,* ed. Muḥammad Muṣṭafá Ziyādah (Cairo, 1939); Ibn Ḥajar al-ʿAsqalānī, *Inbāʾ al-ghumr bi-anbāʾ al-ʿumr,* ed. Ḥasan Ḥabashī (Cairo, 1998); Ibrāhīm ibn ʿUmar al-Biqāʿī, *Iẓhār al-ʿaṣr li-asrār ahl al-ʿaṣr,* ed. Muḥammad Sālim ibn Shadīd ʿAwfī (Giza, 1992); Jalāl al-Dīn al-Suyūṭī, *Ḥusn al-muḥāḍarah fī tārīkh Miṣr wa-al-Qāhirah,* ed. Muḥammad Abū al-Faḍl Ibrāhīm (Cairo, 1967); idem, *Naẓm al-ʿiqyān fī aʿyān al-aʿyān,* ed. Philip Hatty (Beirut, 2010).

[17] Chamberlain, *Knowledge and Social Practice,* 19; see also Fancy, *Science and Religion,* 18–21, and Doris Behrens-Abouseif "The Image of the Physician in Arab Biographies of the Post-Classical Age." *Der Islam* 66 (1989): 331–43.

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there apart from his employment as an attendant at the well-known mystics' lodge, Saʿīd al-Suʿadāʾ. Ibn Ayyūb is nevertheless described as possessing characteristics his colleagues highly esteemed, such as frugality, eloquence, amiability, piety, and good grooming. He died on the evening of 6 January 1464, and a service was held in the prayer hall of the Bāb al-Naṣr before his body was interred in an unnamed mystics' cemetery. "None had anything to fear from him, by word or deed," Ibn Taghrībirdī concludes in his entry. "May God forgive his sins."[18]

Al-Biqāʿī's obituary for Ibn Ayyūb is more substantial. It places his birthdate between 1374 and 1378 and gives his full patronymic as Abū Ḥasan ʿAbd Allāh ibn ʿAlī ibn Yūsuf ibn ʿAlī ibn Muḥammad al-Badr ibn ʿAlī ibn ʿUthmān; the *nasab* Ibn Ayyūb––son of Job—was first used by his grandfather Yūsuf in reference to the "many trials" he suffered in life. Ibn Ayyūb was better known by this name than his grandfather was, and also went by the *nisbah*s al-Makhzūmī and al-Dimashqī. Other titles al-Biqāʿī lists here indicate Ibn Ayyūb's scholarly notability, including the honorifics Jamāl al-Dīn and al-ʿĀlim al-Rabbānī, the latter of which may have been first associated with his father. "All agree upon his sainthood," al-Biqāʿī declares, noting with special approval that the revered Shafiʿi jurist-traditionalist ʿIzz al-Dīn al-Maqdisī (d. 1446), "whose habit was to disparage people more often than not, described him as being on the path of Muslim forebears in his knowledge, deeds, and speech, saying he had never seen his like before." Al-Maqdisī is al-Biqāʿī's main source of information for Ibn Ayyūb's life and personality. He describes the man as reverent, erudite, abstemious, and slow to anger; he recounts that Ibn Ayyūb maintained his composure even when his driver stole one thousand silver dirhams from him during the hajj. Ibn Ayyūb's peers also considered him mystically adept *(ṣāḥib al-kashf),* but, like many ulama active in fifteenth-century Cairo, he publicly disapproved of al-Ḥallāj (d. 922), Ibn al-Fāriḍ (d. 1234), and Ibn al-ʿArabī (d. 1240). When asked about the latter, Ibn Ayyūb exclaimed that he had managed to innovate "such a manner of unbelief as to tear asunder the consensus of all religious commu-

[18] Ibn Taghrībirdī, *Kitāb al-nujūm al-ẓāhirah,* ed. Jamāl al-Dīn Shayyāl (Cairo, 1972), 16:330. Originally a Fatimid palace, Saʿīd al-Suʿadāʾ became the city's primary state-sponsored *khānqāh* under Saladin, housing up to three hundred mystics and serving as an important pietistic center for Cairo. Ibn Ayyūb's *nisbah* "al-Qādirī" likely reflects his and/or his father's membership in the Qādirīyah order; it is not improbable that the order had a presence at Saʿīd Al-Suʿadāʾ; Aḥmad ibn ʿAlī al-Maqrīzī, *Kitāb al-mawāʿiẓ wa-al-iʿtibār bi-dhikr al-khiṭaṭ wa-al-āthār,* ed. Khalīl al-Manṣūr (Beirut, 1997), 4:282; Sylvie Denoix, "Saʿīd Al-Suʿadāʾ," *EI2,* http://dx.doi.org/10.1163/1573-3912_islam_SIM_6492; Nathan Hofer, *Popularisation of Sufism in Ayyubid and Mamluk Egypt, 1173–1325* (Edinburgh, 2015), 35ff.

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nities," apparently referencing the teaching of unitary existence *(waḥdat al-wujūd).*[19]

Al-Biqāʿī's entry further indicates Ibn Ayyūb's piety and charm. He was an especially charismatic man, "magnetically attracting hearts to himself, in that he could hold the gaze of anyone who caught sight of him, and anyone who sat by him would find themselves clinging to him." This charisma helped him convert seventeen Christians and one Jew to Islam through simple conversation. Ibn Ayyūb could also foretell events of great significance. He claimed to receive visions presaging the Timurid invasion of Syria while looking upon the Kaʿbah one pilgrimage, and discussed whether Damascenes should attempt to escape the onslaught with Ibrāhīm ibn Mufliḥ (d. 1479)—a debate reminiscent of those pertaining to flight from areas of epidemic disease. It is heavily implied that Ibn Ayyūb's vision played a role in Timur's death before his siege of Damascus succeeded.[20] More interestingly still, the ability to foresee events appears to have been a family trait. Before the onset of Ibn Ayyūb's father's fatal illness, he was praying in a cemetery with some associates. At the conclusion of prayer, Ibn Ayyūb's father gestured toward the earth and stated that he would shortly be buried there. Exactly seven days after this prediction, he grew weak in his legs and died in the presence of his family. The incumbent *qāḍī al-quḍāh* attended his funeral and reminded the many mourners there about what had transpired in the cemetery. The grief of the attendees was apparently so intense that they marched his body through the streets in complete silence; al-Biqāʿī reports that their breathing could scarcely be heard during the procession, let alone the sound of any irreverent voices.[21]

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[19] Al-Biqāʿī, *ʿInwān al-zamān bi-tarājim al-shuyūkh wa-al-aqrān,* ed. Ḥasan Ḥabashī (Cairo, 2001), 3:140–41; the critical apparatus indicates that a portion of al-Biqāʿī's entry for Ibn Ayyūb is drawn from an alternative manuscript source, with reference to information apparently gleaned from Ibn Taghrībirdī. For more information on the controversy regarding Ibn al-ʿArabī et al., see Walid Saleh, "Al-Biqāʿī," *EI3,* http://dx.doi.org/10.1163/1573-3912_ei3_COM_23717; for al-Maqdisī's biography, see al-Suyūṭī, *Naẓm,* 129. More on Ibn Ayyūb's honorifics below.

[20] Al-Biqāʿī, *ʿInwān,* 142–44. For a biography of Ibn Mufliḥ, see Muḥammad ibn ʿAbd al-Raḥmān al-Sakhāwī, *Al-Ḍawʾ al-lāmiʿ li-ahl al-qarn al-tāsiʿ* (Beirut, 1992), 1:152, as cited in n. 4 in al-Biqāʿī, *ʿInwān,* 144, where this anecdote is found. On the relevance of visions and strange tales to the study of biographical dictionaries, see Chamberlain, *Knowledge and Social Practice,* 22–23; Kristina Richardson, "Drug Overdose, Disability and Male Friendship in Fifteenth-Century Mamluk Cairo," *Postmedieval* 3, no. 2 (2012): 168–81.

[21] Al-Biqāʿī, *ʿInwān,* 145–46. Due to some ellipses in the text, the story of Ibn Ayyūb's father presaging his own death could be read as relating to Ibn Ayyūb himself. There does seem to be some confusion between the two men in al-Biqāʿī's account, as in the lineage given by al–Sakhāwī in the note immediately below. However, al-Biqāʿī specifies that the *qāḍī al-quḍāh* mentioned here is ʿAlāʾ al-Dīn ibn Abī al-Baqāʾ, a Damascene Shafiʿi born in 1356 and appointed to this office in

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Al-Biqāʿī's entry for Ibn Ayyūb focuses on his positive pietistic and intellectual characteristics as well as his family pedigree, but contains no information about his literary output. For this we must turn to the yet more detailed entry in al-Sakhāwī's *Ḍawʾ*. Al-Sakhāwī was a personal friend to Ibn Ayyūb, and provides his complete family lineage. He also more firmly places Ibn Ayyūb's birth in Damascus in 1380. Upon concluding his elementary studies there, he traveled to Cairo to mingle with bureaucrats like the army chief *(nāẓir al-jaysh)* Zayn al-Dīn ʿAbd al-Bāsiṭ (d. 1450). Soon thereafter he entered the service of Saʿīd al-Suʿadāʾ. Al-Sakhāwī thought very highly of his friend, and mentions that he enjoyed the admiration of their colleagues in Cairo as well. These included the noted jurist, theologian, and natural philosopher Ibn al-Humām (d. 1457). According to Ibn al-Humām, Ibn Ayyūb was "well-dressed and finely spoken," as well as "brilliantly venerable, unaffected, intensely imaginative, and self-possessed," embodying a "jovial presence of uncommonly sharp and charming wit." He held lectures and taught prophetic tradition at Saʿīd al-Suʿadāʾ, having learned *Ṣaḥīḥ al-Bukhārī* from the era's much sought-after traditionalist Ibn Ṣiddīq al-Ṣūfī (d. 1404). Ibn Ayyūb taught part of the *Ṣaḥīḥ* to al-Sakhāwī, who states that the two corresponded about the text: "I studied some of the *Ṣaḥīḥ* with him, and he asked me about some of its traditions. So I wrote him a reply that very much met his approval. He went far out of his way to show his gratitude, for that was his assiduous nature, without a hint of affectation." Ibn Ayyūb died in 1463 at the approximate age of eighty-four. So abrupt was his illness that al-Sakhāwī only learned about it two days prior to his passing. A large congregation prayed over his body before it was buried at the cemetery of Saʿīd al-Suʿadāʾ. "People spoke of him in the best, most laudatory of terms," al-Sakhāwī states. "What a truly excellent man he was, God bless him!"[22]

1395—evidence, along with an early date of death, that this story pertains to his father. On Ibn Abī al-Baqāʾ, see Ibn Ḥajar, *Inbāʾ,* 1:486.

[22] Al-Sakhāwī, *Ḍawʾ,* 5:36–37, where Ibn Ayyūb's full name is given as "'ʿAbd Allāh ibn ʿAlī ibn Yūsuf ibn ʿAlī ibn Muḥammad ibn al-Badr ibn ʿAlī ibn ʿUthmān al-Jamāl ibn al-Imām al-Rabbānī—upon whose sainthood all agree—al-Nūr Abī al-Ḥasan," which seemingly attributes these honorifics as well as sainthood to his father, in contrast with al-Biqāʿī above. Al-Sakhāwī notes that early in his career Ibn Ayyūb preferred the *nisbah* al-Dimashqī, and only added al-Shāfiʿī, al-Qādirī, and al-Qāhirī to his name after his relocation to Egypt. Zayn al-Dīn ʿAbd al-Bāsiṭ ibn Khalīl was an influential bureaucrat of Damascene origin who moved to Cairo in 1412 with the then-amir al-Muʾayyad Abū al-Naṣr Shaykh (r. 1412–21), becoming a fixture at court; see al-Suyūṭī, *Naẓm,* 122; al-Sakhāwī, *Ḍawʾ,* 4:24–27; Ibn Taghrībirdī, *Kitāb al-nujūm,* 15:202, 16:15; Daisuke Igarashi, "Charity and Endowments of the Civilian Elite: The Case of Zayn al-Dīn ʿAbd al-Bāsiṭ," in *Studies on the History and Culture of the Mamluk Sultanate (1250–1517),* ed. Stephan Conermann and Tōru Miura (Göttingen, 2021), 57–84. Ibn al-Humām was also the shaykh of the Shaykhūnīyah Khānqāh in Cairo; see al-Sakhāwī, *Ḍawʾ,* 8:127–32; al-Suyūṭī, *Ḥusn al-muḥāḍarah,* 1:270. The name of Ibn Ayyūb's teacher is given only as Ibn Ṣiddīq here, but is most likely

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As for Ibn Ayyūb's literary works, al-Sakhāwī reports that he once began to write a "good tract" on the introduction to ʿAbd al-Ghaffār al-Qazwīnī's (d. 1268) *Ḥāwī al-ṣaghīr,* a work on practical Shafiʿi law. This was likely an effort to attract scholarly patronage and acclaim. However, once ʿAlāʾ al-Dīn al-Bukhārī (d. 1437), the redoubtable student of al-Taftazānī (d. 1390), looked over the project, he instructed Ibn Ayyūb to abandon it. Al-Sakhāwī says nothing more of Ibn Ayyūb's legal activities, though he does state that he and his father (or merely the latter) went beyond spoken censure of Ibn al-Fāriḍ and Ibn al-ʿArabī to author treatises against their teachings. These do not survive, but al-Sakhāwī credits Ibn Ayyūb with a medical treatise that does, entitled *Dawāʾ al-nafs min al-naks,* or "Medicating Oneself against Relapse." He claims to have examined this work personally, and mentions that upon its completion in 1432 Ibn al-Humām and Ibn Yūnis al-Mawṣilī wrote encomia *(taqārīẓ)* for it. This was a common means of promoting a colleague's work in the era, and another indication of Ibn Ayyūb's popularity with his peers.[23]

Al-Sakhāwī provides no further information about this text, but its inclusion in Kâtip Çelebi's *Kitāb kashf al-ẓunūn* and Ismāʿīl Bāshā al-Baghdādī Bābānī's *Īḍāḥ al-maknūn* and *Hadīyat al-ʿārifīn* evinces its long circulation. One such surviving codex is held by the Chester Beatty, and contains both a copy of "Medicating Oneself" as well as the only known recension of "Blocking the Means."[24] Coming first in the codex, "Blocking the Means" is written in a clear scholarly hand and comprises 68 folios. Its undated title page ascribes it to Ibn Ayyūb by the honorific al-Faqīr ilá Allāh Taʿālá al-Shaykh, followed by the more familiar ʿAbd Allāh

Ibrāhīm ibn Muḥammad ibn Ṣiddīq al-Muʾadhdhin al-Dimashqī. In his obituary for this man, al-Sakhāwī states that he was simply known as Ibn Ṣiddīq; see al-Sakhāwī, *Ḍawʾ,* 1:147–48.

[23] Al-Sakhāwī, *Ḍawʾ,* 5:36–37. Not much is known about al-Mawṣilī; see his entry in ibid., 2:190. See also Levanoni, "Supplementary Source," and, again, Fancy, *Science and Religion,* 21–27, for similarities between Ibn Ayyūb's self-promotion and Ibn al-Nafīs's much more successful trajectory.

[24] "Medicating Oneself" is one among the texts attributed to Ibn Ayyūb in Kâtip Çelebi, *Kitāb kashf al-ẓunūn ʿan asāmī al-kutub wa-al-funūn,* ed. Muḥammad Sharaf al-Dīn Yāltaqāyā (Istanbul, 1941), 761, 1094; it initially appears under the name "Kamāl al-Dīn Ibn Ayyūb," though the correction "Jamāl al-Dīn" is supplied thereafter. The text is also listed in Ismāʿīl Bāshā al-Baghdādī Bābānī, *Īḍāḥ al-maknūn fī al-dhayl ʿalá kashf al-ẓunūn ʿan asāmī al-kutub wa-al-funūn,* ed. Muḥammad Sharaf al-Dīn Yāltaqāyā (Istanbul, 1945), 2:72; and in idem, *Hadīyat al-ʿārifīn: asmāʾ al-muʾallifīn wa-āthār al-muṣannifīn,* ed. Kilisli Rifat Bilge and Ibnülemin Mahmut Kemal Inal (Istanbul, 1951), 1:469. Among works on medicine, bloodletting, and ethics, this text was likely Ibn Ayyūb's most popular, surviving in at least three manuscript copies. These three are held by Paris's Bibliothèque nationale, Dublin's Chester Beatty, and Patna's Khuda Bakhsh Oriental Library—each confirmed by this author and subject to his future study, along with the others. See also Carl Brockelmann, *Geschichte der arabischen Litteratur* (Leipzig, 1901–2), S2:1027.

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ibn ʿAlī ibn Ayyūb al-Shāfiʿī al-Qādirī al-Makhzūmī al-Dimashqī.[25] The text itself exhibits the technically dense, epitomizing, and allusive hallmarks of the late-medieval scholarly idiom. Described by Ibn Ayyūb as an exercise in important topics related to natural philosophy, "Blocking the Means" is not a sustained or original treatment of the arguments for or against natural causal efficacy. An analysis of its opening sections will rather show that Ibn Ayyūb's aims for the text are didactic and homiletic, designed to project his fastidiousness and disciplinary mastery by offering an even-handed account of the discourse's demonstrative limits.

Contagion and Causality in "Blocking the Means"

In the incipit of "Blocking the Means," Ibn Ayyūb invokes God by using divine titles that assert the contingency of natures and defend his creative role in the cosmos. In rhyming couplets Ibn Ayyūb describes God as "the First *[awwal]* before natures came into being, and the Last after their passing away; He who is Apparent *[ẓāhir]* in the wise harmony of purpose imparted to their framing, and He who is Hidden *[bāṭin]* in the similitude of their proximate causes *[tashbīh al-asbāb]*—for in the darkness the Arranger of the stars *[rākiz lil-nujūm]* does not look to their light for guidance." The Prophet is described in turn as "the one dispatched with tidings about God's intervention in the habitual course of events *[kharq al-ʿawāʾid],* the one who disclosed reasons *[ʿilal]* for doubt and disconcertment about them, the master of sages and messengers."[26] The Prophet is thus cast as the originator of appropriate natural philosophical discourse, as well as the first critic of its epistemological liberties. Ibn Ayyūb explains his own intentions in composing "Blocking the Means" in similar terms: "This treatise comprises the removal of suspicion and doubt about, and an explanation of, direct causes *[ʿillah]* for the effects of natures. I have entitled it "Blocking the

[25] CBL MS Ar 5162, fol. 1r. Though the ink has flaked off and a positive identification is difficult, this manuscript appears to have belonged to a certain "al-Faqīr ilá Allāh Ṣāliḥ ibn [Muḥammad] al-Fullānī." This is almost certainly the traditionalist Ibn Muḥammad al-Fullānī who died in 1803, per Khayr al-Dīn al-Ziriklī, *Al-Aʿlām: qāmūs tarājim li-ashhar al-rijāl wa-al-nisāʾ min al-ʿarab wa-al-mustaʿribīn wa-al-mustashriqīn* (Beirut, 1980), 3:195. Here al-Ziriklī provides an image of another manuscript bearing al-Fullānī's name, written in a hand matching the one found on the title page of "Blocking the Means."

[26] CBL MS Ar 5162, fol. 1v. Ibn Ayyūb's use of *awwal* harkens to al-Ghazālī's description of God in the Aristotelian sense of *prime mover.* The alternative though unusual reading of *rākiz* as *rākin* would carry the similar meaning of an inaccessible yet essential causal agent. Moreover, Ibn Ayyūb's use of the term *ʿilal* is a likely play on its meaning "natural causes," while *ḥukamāʾ* for "sages" connotes both philosophers and physicians; Lenn E. Goodman, "Did Al-Ghazâlî Deny Causality?" *Studia Islamica* 47 (1978): 94.

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Means of Harm Caused by Teaching the Causal Efficacy of Natures" and devised it as an exercise for the student of this discipline—although investigating the true details of the matter is disallowed *[ʿalá anna al-wuqūf ʿalá al-ḥaqāʾiq mumtaniʿ]* except through reference to God's intervention in the habitual course of events. On this score, I shall mention the means by which this phenomenon was made clear to me after having become acquainted with it, repudiating those of its aspects that contravene the outward teaching of the shariʿah."[27] This wording invites consideration. Ibn Ayyūb phrases his intentions as instructive: the text is an exercise for students in matters related to natural causal efficacy, but the subject must be carefully broached because teaching this topic without affirming God's agency over patterns of cause and effect is *mumtaniʿ*, or disallowed. The term refers to an inappropriate or interdicted course of action. Its usage here is reminiscent of commentaries on a passage from Ibn Sīnā's widely-circulated *Risālah al-aḍḥawīyah* on the need to espouse only outward interpretations of scripture in public settings. Ulama must do so in order to prevent believers who are unable to reason properly from slipping into unbelief. Using God's unicity *(tawḥīd)* as an example, Ibn Sīnā explains that outward legal and religious teachings *(sharʿ wa-millah)* about this doctrine were revealed to the prophets through allegory *(tashbīh)* "for use in public address to the masses at large. It is for this reason obviously disallowed *[mumtaniʿ]* to expound to them the true details *[taḥqīq]* upon which sound belief in God's unicity depends," such as his lacking quantity and extension in space. Doing so risks causing common believers to misconstrue him as non-existent. Ibn Sīnā's argument was highly generative, attracting the attention of al-Ghazālī, Ibn Rushd (d. 1198), Fakhr al-Dīn al-Rāzī, and Ibn Taymīyah. Their objections and adjustments to his argument aside, the question as to whether the ulama should publicly espouse philosophical concepts of potential harm to the Islamic community remained an active conversation well into and beyond the Mamluk era. As the self-proclaimed heirs to the prophets––and, increasingly, as a class of political functionaries and sociocultural elites—the ulama repeatedly discussed their responsibility to ensure the religious cohesion of the Islamic community with solemnity. This purpose is evident in Ibn Ayyūb's careful presentation of his treatise's content at its outset, which he fears may lead the uninitiated to confuse the apparent causal efficacy of natures for evidence against the existence of God.[28]

[27] CBL MS Ar 5162, fol. 1r.

[28] The passage from Ibn Sīnā is notably quoted in Ibn Taymīyah, *Kitāb darʾ taʿāruḍ al-ʿaql wa-al-naql,* ed. Muḥammad Rashād Salīm (Riyadh, 1991), 5:11; cf. Yahya J. Michot, "A Mamlūk Theologian's Commentary on Avicenna's 'Risāla Aḍḥawiyya': Being a Translation of a Part of the 'Darʾ Al-Taʿāruḍ' of Ibn Taymiyya, With Introduction, Annotation, and Appendices: Part I," *Journal of Islamic Studies* 14, no. 2 (2003), beginning at 173; idem, "Philosophical Exegesis in Context:

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Following this incipit, Ibn Ayyūb states that he has divided "Blocking the Means" into fourteen subsections on important aspects of natural philosophy.[29] The first of these is "on contagion *[ʿadwá],* its proximate causes *[asbābihā],* its division into the two species *[nawʿayn]* of harmful and salutary, the feeble reasoning of natural philosophers *[ḍaʿf ʿulamāʾ al-ṭabīʿah],* which of their teachings may be duly relied upon, and the features constituting the human body." Ibn Ayyūb's stance on contagion in this subsection amounts to localized miasma theory, where humoral vapors arising from sickened bodies spread disease. It does not immediately engage with the causal implications of this position. Ibn Ayyūb explains that this harmful species of contagion occurs "in some diseases and not in others, because in some diseases there is material on the exterior of the body, or whose area of effect is on the exterior, which dissolves as a vapor and is transferred when it is inhaled by another person. If this occurs over a long period of time, or if there is some amenable substance in the body of the other person, their humors will corrupt."[30] Such transmission occurs only in diseases affecting parts of the body between which there is a certain affinity facilitating the admission and integration of vapor. This includes transmission between extremities, porous organs, areas of discharge and vulnerability, and in all instances where the vapor in question is hot, pungent, and viscid in humoral composition.[31] Ibn Ayyūb lists the diseases that are transmitted under these conditions as conjunctivitis *(ramad),* tuberculosis *(sill),* epidemic illness *(wabāʾ),* gangrenous leprosy *(judhām),* prurigo *(jarab),* smallpox *(judarī),* measles

Some Views by Ibn Taymiyya," *Muslim World* 109, no. 4 (2019): 582–94; Carl Sharif El-Tobgui, *Ibn Taymiyya on Reason and Revelation: A Study of* Darʾ Taʿāruḍ al-ʿaql Wa-al-Naql (Leiden: Brill, 2020), 121–31, esp. 126, n. 195; cf. Ragab, *Piety and Patienthood,* 207. On the lukewarm reception of this text by Maimonides (d. 1204), see Griffel, *The Formation of Post-Classical Philosophy,* 223–24. See also Robert Wisnovsky, *Avicenna's Metaphysics in Context* (Ithaca, 2018), 213–16, 219, and 242 for the concept of *mumtaniʿ* in logic; Shalahudin Kafrawi and Sunan Gunung Djati, "The Notion of Necessary Being in Fakhr Al-Dīn al-Rāzī's Philosophical Theology," *Islam and Christian-Muslim Relations* 15, no. 1 (2004): 125–33; Jonathan P. Berkey, "'There Are ʿUlamāʾ, and Then There Are ʿUlamāʾ': Minor Religious Institutions and Minor Religious Functionaries in Medieval Cairo," in *Histories of the Middle East: Studies in Middle Eastern Society, Economy and Law,* ed. Roxani Eleni Margarit et al. (Leiden, 2010), 9–22.

[29] Titles for sections on subjects other than contagion are given at CBL MS Ar 5162, fols. 1v–2v, and will be subject to future study by this author. They include medical topics such as illnesses caused by food, drink, seasons, climate, wind, and the movement of stars; tremors and leprosy; sexual arousal, satisfaction, potency, and impotency; perspiration, changes to the voice, wine drinking, the graying of hair, sneezing, intense emotions, the effect of climes on bodily characteristics, walking for exercise, massage, eunuchs, and miscellany.

[30] Ibid., fols. 2v–3r.

[31] Ibid., fol. 3r; cf. Peter E. Pormann, *The Oriental Tradition of Paul of Aegina's Pragmateia* (Leiden, 2004), 283.

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(ḥuṣaybah), and generalized leprosy *(baraṣ).* He provides more specific details about how some of these illnesses are individually communicated, mentioning in the process additional contagious diseases not listed here. For example, the transmission of leprosy is rare when all or most of the aforementioned conditions are unmet, which makes it like dropsy *(istisqāʾ)* and madness *(junūn).* Conjunctivitis is the most readily infectious because the eyes are porous and superficially located on the body, allowing hot, pungent, and viscid discharge to transmit easily. This humoral profile likewise characterizes the breath of those with tuberculosis, which leaves consumptive airways with a warm and suppurative composition. This breath forms a vapor that easily permeates the extremities, pores, and vulnerable areas of nearby bodies. Epidemic illnesses are similarly transmitted via the putridity of a sick person's breath, which is inhaled and incorporated by others. Summarizing these processes through a reference to Avicennan physics, Ibn Ayyūb observes that the sick can infect the healthy through simple proximity because illness is a correlate of a diseased body's motion *(ḥarakah),* which is what produces infectious discharges. This is unlike the body in a state of health, which is a correlate of its repose *(sukūn).* In this state, discharges are not produced. In other words, health is not communicable to the sick like disease is communicable to the healthy—which is why housing convalescent patients with healthy people is never a sound therapy.[32]

Concluding this initial discussion, Ibn Ayyūb addresses the reader in an extended passage on the epistemological limitations of such medical reasoning. Most importantly, he wishes to avoid giving his audience the impression that he is arguing for the causal efficacy of natures by simply observing that the diseases above are communicable:

> You should know that the physician's argument for direct causes *[ʿillah]* is as deficient as that of the grammarian, because the weak correspondence between the cause and its effect in their claims is obvious both rationally and religiously *[ẓāhir ʿaqlan wa-sharʿan].* For miasma may encompass a great many people, but only a few of them die. And the Prophet did say, "There exists neither augury nor contagion," and, "Who [but God] infected the first [camel]?" The most extreme view to argue is that the agent *[fāʿil]* is the natures themselves, and then shift [this agency] from natures to celestial bodies. While indeed the qualities of hot and cold are effected and occasioned by the sun and moon *[munfaʿilah ʿan al-*

[32] CBL MS Ar 5162, fols. 3r–4r; see Fancy, *Post-Avicennan Physics,* 58; per n. 16, *ḥarakah* "is used to signify any kind of change in quantity, quality, place, or position (i.e., the Aristotelian *kinēsis*)." This usage is widespread in medieval medical and natural philosophical literature.

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> *shams wa-al-qamr wa-bi-sababihimā],* the adherents of revealed religions have agreed that attributing causal efficacy to such proximate causes constitutes disbelief in God, inevitably overstating the identification of these causes with what is truly causing a thing to occur. For the same reason, astrological predictions cannot be said to operate via demonstrative certainty *[burhānīyah qaṭʿīyah],* but rather rely upon intuition and conjecture *[ḥads wa-takhmīn],* since there is no rational way of establishing the indicative *[madlūl],* causal *[maʿlūl],* or conditional *[mashrūṭ]* relationship between the relative movement of a star toward a domain of the sky and the existence of good fortune for some on earth and not others, or vice versa. So hold instead to citing God's habit in the face of their allegations.[33]

Ibn Ayyūb's style here is elliptical, moving from point to point without offering full explanations for them. Citing two prophetic traditions typically used to critique contagion, he stops short of presenting a formal theological or religious argument against the concept. He simply claims that such an argument is a matter of consensus among believers, and should be as evident to the reader as its rational counterpart. As for the latter, Ibn Ayyūb states that individuals may be unaccountably spared from epidemics supposedly caused by rampant miasma—an objection famously raised by his contemporary Ibn Ḥajar. Ibn Ayyūb also begins the passage itself by comparing the demonstrative status of physicians' etiological arguments with those made by grammarians. The reader is expected to surmise his meaning: asserting the efficacy of contagion is akin to overstating the strength of induction in grammar, whereby a language's rules are abstracted from observed usages peculiar to certain times, places, and peoples, and hence lack a universal basis in reason. Etiological claims, Ibn Ayyūb seems to argue here, similarly rely on empirical observations that are dependent on circumstance rather than demonstrative proof. Such circumspection is equally reflected in Ibn Ayyūb's comments on astrology and medicine's lack of indicative, causal, or conditional support—key elements of legal, dialectic, and inferential reasoning extensively debated by al-Juwaynī, al-Ghazālī, al-Rāzī, al-Nafasī (d. 1288), al-Samarqandī (d. 1322), and Ibn Taymīyah in the years preceding his writing.[34]

[33] CBL MS Ar 5162, fols. 4r–4v. It is possible that by *ḥads* Ibn Ayyūb means the Avicennan concept of intuition as such. This refers to the ability to discover the middle term of a syllogism without using formal logic; see Peter Adamson and Michael-Sebastian Noble, "Intuition in the Avicennan Tradition," *British Journal for the History of Philosophy* (2022): 1–18.

[34] See Jon McGinnis, "Scientific Methodologies in Medieval Islam," *Journal of the History of Philosophy* 41, no. 3 (2003), and note 39 below, as well as Thérèse-Anne Druart, "Logic and Language,"

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Moving from this brief allusion to inductive and inferential reasoning, Ibn Ayyūb dedicates greater attention to the poor epistemological profile shared by medicine and astrology. His disparaging comments were often voiced by Peripatetics who wished to affirm the weak predictive power of medicine as well as elevate what they believed to be the more precise and prestigious science of astronomy over the popular, often courtly pursuit of astrology. The unfavorable comparison between the two became all the more relevant in the Mamluk era, where inquiry across such disciplines reached a zenith, astronomers enjoyed employment at prestigious institutions of learning, and inspectors subjected marketplace astrologers to ever more withering oversight. This context clearly informs Ibn Ayyūb's denigration of astrology as a non-demonstrative science operating only on the logic of intuition and conjecture, above. Referring to physicians and astrologers as a single group—while seemingly making room for medicine's greater probative strength—Ibn Ayyūb goes on to state:

> Most of their predictions based in "customary events" *[aḥkāmihim al-ʿādīyah]* lack correlation with phenomena in the real world. This is because "customary events" pertain to things like burning amidst fire, satiation amidst eating, quenching thirst amidst drinking, and healing amidst medical treatment—i.e., events which sensible people deem reliable due to how frequently they are reproduced under these conditions in customary observation *[li-kathrat takrārihi al-mashrūṭah fī al-aḥkām al-ʿādīyah].* Yet the lifespans of astronomers like Ptolemy et al. are shorter than the recurrence of the celestial spheres' revolutions; this is especially relevant to information they convey about great planetary conjunctions in the remote past. If their claims were true, people of the same ascendant star would be much like each other, just as clothing tossed into fire reliably burns. But this is not the case about such people: among them are the miserable and the happy, the long-lived and the short-lived. It is as the Almighty said: "They are fed by the same water, though we sweeten the taste of some

in *Routledge Companion to Islamic Philosophy,* ed. López-Farjeat and Taylor, 69–81; Kees Versteegh, "The Term ʿilla and the Notion of Causality in Arabic Linguistics," in *Orientalistische Studien zu Sprache und Literatur: Festgabe zum 65 Geburtstag von Werner Diem,* ed. Werner Diem and Ulrich Marzolph (Wiesbaden, 2011), 87–97; Abdurrahman Ali Mihirig, "Analogical Arguments in the *Kalām* Tradition: Abū l-Maʿālī al-Juwaynī and Beyond," *Methodos: Savoirs et Textes* 22 (2022), https://doi.org/10.4000/methodos.9004; Walter Edward Young, "Concomitance to Causation: Arguing Dawarān in the Proto-Ādāb al-Baḥth," in *Philosophy and Jurisprudence in the Islamic World,* ed. Peter Adamson (Berlin, 2019), 205–82; Wael B. Hallaq, trans., *Ibn Taymiyya Against the Greek Logicians* (Oxford, 1993); Stearns, *Infectious Ideas,* esp. 72 and from 85.

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> and not the others [*Raʿd* 4]." The converse of this is when a great many people perish in a single shipwreck despite their different horoscopes. For the stars are ordered, ruled, dominated, and constrained, having restricted patterns of ascent and descent from which they cannot deviate...So the truth of the matter depends on the freely willing and destining Agent.[35]

Alongside a single Quranic excerpt Ibn Ayyūb draws on longstanding empirical criticisms of astrology to dismiss the status of its claims. These include the shipwreck challenge to the accuracy of horoscopes, which was offered as early as antiquity, and a litany of "customary events" drawn from a famous passage of al-Ghazālī's *Tahāfut*. Moreover, both al-Ghazālī and Ibn Rushd argued that the lifespans of astronomers were far too short to provide compelling empirical evidence for their predictions. More interestingly still, Ibn Ayyūb's demurring position on the relationship of commonly reproducible events like burning amidst fire with the reliability of celestial prognostication resembles discussions of this subject by contemporaries further afield in the Islamic west. These include Ibn Khaldūn (d. 1406), who discouraged speculation about long chains of celestial causes which he believed to be beyond human comprehension, and Ibn Yūsuf al-Sanūsī (d. 1490), who criticized medical reasoning as inductive yet allowed for the apparent congruence of its habitual causes and effects. Be this as it may, Ibn Ayyūb says nothing more of medicine and astrology in this subsection. But he does provide a caveat before proceeding. He states that the comments he has just offered against natural causal efficacy do not pertain to any non-technical expressions *(alfāẓ muṭlaqah)* his readers might find in subsequent passages of "Blocking the Means." These especially include metaphorical predications *(majāz isnādī),* which Ibn Ayyūb admits might signify his belief in natural causal efficacy. He reassures readers that while the wording of such artful statements as "spring causes buds to bloom" may suggest a direct causal relationship between, in this instance, the season and the flowering of plants, they "do not speak to doctrinal belief *[iʿtiqād],* and thus I am innocent." This caveat is notably voiced in advance of the prognostic and etiological content provided in subsequent sections of "Blocking the Means," where toleration of causative language is necessary to avoid burdening the text with similar qualifications.[36]

[35] CBL MS Ar 5162, fols. 4v–5r.

[36] Ibid., and Yahya J. Michot, "Ibn Taymiyya on Astrology: Annotated Translation of Three Fatwas," *Journal of Islamic Studies* 11, no. 2 (2000): 147–208; Griffel, *The Formation of Post-Classical Philosophy,* esp. 258; Roger Beck, *A Brief History of Ancient Astrology* (Oxford, 2007), esp. 101–18; McGinnis, "Scientific Methodologies," 307–27. On these aspects of Ibn Khaldūn and al-Sanūsī's thought, see Stearns, *Infectious Ideas,* 121–30. For these linguistic terms, see Avigail Noy, "The Legacy of ʿAbd Al-Qāhir al-Jurjānī in the Arabic East before al-Qazwīnī's Talkhīṣ al-Miftāḥ,"

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Ibn Ayyūb follows this discussion of medicine and astrology, as well as his linguistic caveat, with a more forceful, conspicuously Ashʿarī objection to natural causal efficacy:

> All of the foregoing proceeds from arguing that natures are causally efficacious *[faʿīlah],* in the sense of their being an effect *[mafʿūlah]* synonymous with every existing thing in the elemental world—i.e., entities in the sublunar sphere which are naturally constituted *[maṭbūʿ]* of the qualities hot, cold, moist, and dry. This is not so; in the discourse of the ancients, natures were put forth as recipients *[munfaʿil]* of the divine power *[quwwah illāhīyah]* through which every entity in the world both high and low was sustained: the celestial spheres, angels, stars, inanimate objects, plants, non-speaking animals, and humans. Irrespective of the varying conditions for the welfare of each entity, natures were how that power actualized their proper constitutions as predisposed in potentiality. The ancients were heedless of the rotten core to such superficial wisdom: "If your Lord had willed, he could have made humankind into a single nation [*Hūd* 118]." Their explanatory pretensions fall short of elevating the occasions for a cause to the status of what actually causes them, and their teachings on potentiality are unsound. For "God is determinative over every thing [*Baqarah* 106]," and the Exalted reminded us that it is he who decides when to intervene in the customary course of events, saying, "If God had willed it, he could have rightly guided them. So be not among the ignorant [*Anʿām* 35]."[37]

Ibn Ayyūb's impatience for the overlapping lexicons of natural philosophy and astrology is strongly evident here. His language again takes on an elliptical and didactic quality, quickly summarizing natural philosophical claims, defining their terms, and supplying Quranic citations to dispute them. His comments include a brief reference to the Peripatetic concept *quwan,* or essential powers latent in substances from which their effects flow—powers which are, in this sense, synonymous with natures. Their description here as a "divine power" further calls to mind Ibn Rushd's distinctive use of this term in accounting for how God and celestial intellects exert influence over entities in the sublunar sphere, itself a calque of Alexander of Aphrodisias's (fl. 200) original phrase for

Journal of Abbasid Studies 5, nos. 1–2 (2018): 11–57, and, for greater context, idem, "The Emergence of ʿIlm Al-Bayān: Classical Arabic Literary Theory in the Arabic East in the 7th/13th Century" (Ph.D. diss., Harvard University, 2016), 220.

[37] CBL MS Ar 5162, fols. 5r–5v.

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the same concept. Ibn Ayyūb's citation of *Hūd* in relation to it suggests an objection to reducing divine acts of creation to a dormant power that inheres in all beings, however diverse, serving only to actualize their predisposed constitutions when needed. His dismissive invocation of terms like *faʿīlah, mafʿūlah,* and *munfaʿil* is likewise evocative of statements made by the earlier figures al-Rāzī, Ibn Ghalyān al-Balkhī (d. ca. 1194), and Sayf al-Dīn al-Āmidī (d. 1233) about the perceived invasion of scholarly discourse by the hollow, performative use of this vocabulary in the later medieval era. Ibn Ayyūb therefore seems fairly well-acquainted with the commentary traditions surrounding these longstanding natural philosophical debates. It should be noted that while his objections are somewhat polemically presented here, they center less on the validity of natural philosophy as an intellectual pursuit and more on how easily its arguments can tend toward logically indefensible claims that clash with God's causal agency.[38]

At the outset of "Blocking the Means," Ibn Ayyūb described this section as treating the two species of contagion, "the feeble reasoning of natural philosophers," and "which of their teachings can be duly relied upon." It is only in providing commentary on the latter that Ibn Ayyūb explicitly mentions the figure looming large over his treatise: al-Ghazālī. Calling him by his customary honorific *Ḥujjat al-Islām,* Ibn Ayyūb states that al-Ghazālī was asked about the foregoing criticism of natural philosophical discourse and agreed with it. Nevertheless, there are circumstances which al-Ghazālī believed made it reasonable to act as though natural causal efficacy were real: "There is no harm in the physician's correlative claims where trivial matters are concerned *[fīmā lā khaṭar fīhi].* Whatever a jurist might say, no rational proof can be furnished to prevent you from seeking the benefit alleged about a medicine's intrinsic properties—for it is irrational to delay *[tark]* seeking oxymel's suppression of yellow bile until such a proof is furnished." It is difficult to resist reading Ibn Ayyūb's disparaging use of the term *tark* here as a criticism of *tark al-tadāwī,* the controversial pietistic practice of foregoing medical treatment when sick in order to exercise *tawakkul,* or total reliance on God. In further evidence of medicine's provisional legitimacy despite the objections of pious ulama, Ibn Ayyūb observes that physicians throughout history have applied their medical treatments to patients and

[38] Frank Griffel, *Al-Ghazali's Philosophical Theology* (Oxford, 2009), esp. from 208; idem, *The Formation of Post-Classical Philosophy,* 286; Ayman Shihadeh, "From Al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology," *Arabic Sciences and Philosophy* 15, no. 1 (2005): 141–79; Gad Freudenthal, "The Astrologization of the Aristotelian Cosmos: Celestial Influences on the Sublunar World in Aristotle, Alexander of Aphrodisias, and Averroes," in *New Perspectives on Aristotle's De Caelo,* ed. Alan C. Bowen and Christian Wildberg (Leiden, 2010), 239–81; Bethany Somma, "The Causal Efficacy of Nature in the Neoplatonica Arabica," in *Reading Proclus and the Book of Causes,* vol. 3, *On Causes and the Noetic Triad* (Leiden, 2022), 281–302; cf. Ibn Taymīyah and Ibn al-Qayyim's use of the term *qūwah* in Perho, *Prophet's Medicine,* 70–74.

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have witnessed neither ill effects nor punishment from God as they did so. The reader is again left to infer the whole of Ibn Ayyūb's meaning: that God would have surely brought about negative consequences for practitioners of medicine if their pursuits were forbidden on the basis of advancing belief in natural causal efficacy.[39]

The remainder of this section on contagion supports this interpretation, and demonstrates the distinction Ibn Ayyūb draws between criticizing the explanatory pretensions of natural philosophy and discarding the discourse altogether. "Humans are of the earth," Ibn Ayyūb begins in increasingly poetic language, and the earth's "master increases its yield when he undertakes to cultivate it, to temper its waters, and reduce its surplus yield." This stewardship is accomplished by studying natural philosophical discourses inclusive of medicine, by which the ulama come to know the substances that comprise human beings, animals, plants, and medicines, as well as appreciate the larger physical reality in which these diverse entities are created and sustained. In Ibn Ayyūb's estimation, this undertaking is tantamount to the pursuit of human perfection, both of the body and its intellecting soul:

> As for the body, its perfection is attaining the health that comprises its most favorable states. As for the soul, its perfection is consummating its theoretical and practical powers, which illness and pain impede. Thus he who uses this knowledge to build upon the human essence is able to perceive what ails each body part and what treatment must be applied to resolve these illnesses, as well as the wonders and marvels that await in understanding and

[39] CBL MS Ar 5162, fols. 5v–6r. See again McGinnis, "Scientific Methodologies," esp. from 317, which probes Ibn Sīnā's argument that repeatedly observing certain causes' bearing certain effects *(tajribah)* may provide conditionally *(bi-sharṭ)* necessary knowledge that a causal relationship exists between them. McGinnis contends that in so arguing Ibn Sīnā went beyond his philosophical predecessors, who, like Ibn Ayyūb himself, deemed such knowledge to be too unreliable for application outside of epistemically trivial matters like medical treatment. Though in this instance Ibn Sīnā illustrated his position with reference to scammony's observed effect on bilious humors, oxymel's similar suppression of yellow bile is invoked by al-Sanūsī in his discussion of causal relationships in medicine; see Stearns, *Infectious Ideas,* 126–27. On *tark al-tadāwī,* see Perho, *Prophet's Medicine,* 66–67; it should be noted that the copyist for CBL MS Ar 5162 marginally corrected the omission of the word *tark,* implying the existence of another, unknown manuscript. Ibn Ayyūb also relates the following proverbs in support of medicine's legitimacy here: "I have only seen good come of this the many times I have tried it," and "If the wretched knew that God does not punish the first commission of a sin, they would refrain from sinning." There may be additional juridical implications to these statements; see, for example, ʿAlī ibn Aḥmad Ibn Ḥazm, *Al-Muḥallá bi-al-āthār fī sharḥ al-mujallá bi-al-ikhtiṣār,* ed. ʿAbd al-Ghaffār Sulaymān al-Bandārī (Beirut, 2003), 12:64, topic 2186, no. 2.

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> utilizing those parts. This enterprise is further clarified by his coming to understand the underlying realities of existing things in their transitory and abiding aspects, including those things in the heavens, the earth, and what lies between. This is because the human essence is a vessel for the world's abstract truths, a sculpting clay for its forms, a tablet for its markings, and a gathering place for its realities. It is indeed as though humankind brings together both lifeless and growing things, both prey and predator, both demon and angel—because it is a microcosm of the world.

This is far from a condemnation of natural philosophical inquiry. In addition to promoting a comprehensive understanding of the material cosmos of which humanity is both part and personification, Ibn Ayyūb goes on to state that studying the fields constitutive of natural philosophy guides believers to truths that are otherwise only found in scripture. The prime example of this phenomenon is the natural philosopher's eventual ability "to unveil the secret of death's necessity"; i.e., "the second genesis" of bodily resurrection. Arguing at length that this hidden reality places human beings at the pinnacle of God's creation, Ibn Ayyūb leaves it characteristically unsaid that the resurrection was chief among the religious teachings denied by Avicennan Peripatetics—a fact which al-Ghazālī famously claimed placed them beyond the pale of Islam. Despite its allusive delivery here, this statement is perhaps Ibn Ayyūb's most direct affirmation of natural philosophy's importance to the ulama's intellectual and pietistic mission. Although perilous for its ability to lead Muslims into false belief about God's causal agency, when properly explained by a trusted, circumspect teacher the tenets of natural philosophy may just as easily guide them to evidence for doctrinal beliefs concealed in the structure of reality itself. Then, in a sudden, prosaic contrast to this poetic summation, Ibn Ayyūb concludes the section by enumerating the salutary species of contagion mentioned in its foreword: urination, yawning, and the involuntary contraction of muscles. These reflexes of the body expel excess moisture, we are told, and can be triggered when it receives sensory input reminiscent of this excretion, such as the sight, sound, or scent of flowing water and blazing fire.[40]

CONCLUSION

Evident in this passage, but also shot through the opening folios of "Blocking the Means," is Ibn Ayyūb's ambivalence as to the final status of natural

[40] CBL MS Ar 5162, fols. 6r–7r. The Quranic citations given in support of these statements here are *Sajdah* 7 and *Tīn* 4–5, 9.

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philosophical claims. This ambivalence is reflected in the legal principle he invokes in the title of his treatise: *sadd al-dhirāʾiʿ,* whereby a licit activity may be interdicted if it often results in illicit activity. Itself subject to disagreement among legal thinkers, this principle appeared across medieval plague treatises and traditionalist discourses as a strategy to maintain the integrity of the Islamic community when exigent factors like outbreaks of epidemic illness and the disruptions accompanying them made determining ethical courses of action difficult. Perhaps just as exigently and no less abstractly for Ibn Ayyūb, permitting novices to engage in natural philosophical inquiry without first teaching them its logical limitations posed an unacceptable risk to scholarly discourse in the later medieval era. Yet at multiple points in "Blocking the Means" our author suggests that tolerating some degree of causal language in natural philosophy promises benefits for the properly initiated scholar. Not least among these are the cure of disease, the perfection of the human body and soul, and the ability to access divine truths in sources other than revealed scripture. The circumspection with which Ibn Ayyūb makes the case for these benefits stands not in contrast with but in complement to his comments on the speciousness of natural causal efficacy—speaking less to the staid theological or legal reasoning of the Mamluk ulama, and more to the logical rigor that they prized. Alongside Ibn Ayyūb's reputation for probity, sincerity, and charisma, "Blocking the Means" gives evidence that ulama of this era approached their scholarly endeavors with the intellectual and interpersonal ideals that underwrote their professional identities firmly in mind. Future study of its subsequent sections on natural philosophical topics of interest to this learned elite will provide further, richer context for understanding those ideals at work in the sociocultural milieux of the Mamluk era.

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