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Taşköprīzāde on the (Occult) Science of Plague Prevention and Cure

Matthew Melvin-Koushki*

Abstract: The genre of the plague treatise, still little studied, testifies to the cultural transformations that swept western Eurasia after the Black Death apocalypse of the mid-fourteenth century, with recurrent outbreaks for centuries thereafter. Ottoman contributions to this genre are exemplary: they allow us to track the emergence of an imperial-scientific early modernity. This article presents the most comprehensive and innovative Islamicate plague treatise extant, Taşköprīzāde Aḥmed's (d. 1561) *Treatise on Healing Epidemic Diseases*. Therein the celebrated Ottoman polymath makes a strong case, advanced by arguments both religious and rational, for *occult science* as the most empirical method for preventing and curing the plague. To this end, he devotes the theoretical first half of the treatise to a critique of fatalist scholars and sufis, who prefer *tawakkul* to *tasabbub*, or blind faith to "scientific method"; the practical second half is devoted to what he considers to be the most medically effective scientific discipline of his era, lettrism (*ʿilm al-ḥurūf*)—*a* Neopythagorean science encapsulating the new "cosmological imaginary" of Western early modernity generally, wherein the world was seen by many thinkers and doers as a mathematical and hence magically tractable text. Our distaste for occult science notwithstanding, Taşköprīzāde must here be named another early modern empiricist.

Keywords: Taşköprīzāde, Plague, Ottoman Plague Treatises, Empiricism, Occultism, Lettrism, Science and Religion, History of Medicine, Early Modernity.

* Associate Professor of Islamic History, University of South Carolina. mmelvink@sc.edu.

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http://orcid.org/0000-0002-2432-3264

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The Black Death pandemic (1346-53) spread swiftly across Afro-Eurasia and caused unprecedented levels of mortality everywhere it touched. An infectious disease caused by the bacterium *Yersinia pestis*, plague continued in repeated outbursts over several centuries, bringing in its wake profound political, economic, social and cultural transformations in societies affected by it. Subject to constant recurrences of plague, Ottoman society was not exempt from this transformative experience; it is rather emblematic of the same. From its initial appearance in Ottoman-controlled areas in 1347 to its last recorded manifestation in modern Turkey in 1947, the region suffered the longest recorded continuous recurrences of plague in world history—a full six centuries.[1] Periodic eruptions of plague indiscriminately killed countless numbers of people from all walks of life, and at times even endangered the Ottoman dynasty itself, the *raison d'être* of the Ottoman state.[2] The multifaceted demographic, economic and social effects of persistent plagues on Ottoman society are only now being explored by modern historians.[3]

Faced with this lethal problem, the Ottomans developed a wide array of theories, disciplines and practices for prevention and treatment: Ottoman intellectuals and physicians produced medical, legal and theological treatises on plague; the central administration developed regulations to ensure public health; and healers, sufis and other actors peddled therapies both conventional and unconventional. Members of Ottoman society thus clearly utilized a wide range of preventative and curative methods simultaneously as a matter of course. These included prophylactic and therapeutic techniques now usually scorned as mere unmodern superstition—for all that many remain very much in use.

Within this wide array of disciplines and practices that were marshaled against plague, the place of the occult sciences (*al-ʿulūm al-gharība* or *al-khafiyya*)[4]—heavily

1 On the first few centuries of the Ottoman plague experience see Varlık, *Plague and Empire*. This prologue summarizes her findings; my thanks to Dr. Varlık for inspiring the present study.

2 Orhan (d. 1362), son of Osman, the eponymous founder of the Ottoman dynasty, likely died of plague, as did a number of later Ottoman sultans and members of the dynastic family (İnalcık, *Kuruluş*, 71).

3 Representing the state of the field is Varlık, *Plague and Empire*, entirely superseding Panzac, *La peste*.

4 I.e., astrology, alchemy and a variety of magical and divinatory disciplines, routinely identified as a coherent subset of the natural and mathematical—and increasingly also the religious—sciences in the Islamicate encyclopedic tradition. See e.g. Melvin-Koushki, "Powers of One"; Gardiner, "Books on Occult Sciences."

used to precisely this end—has been left almost entirely unexplored. To date, modern scholarship has treated only a handful of relevant examples of prayers and talismanic magic squares, assuming them to be of little scientific worth; how occult-scientific knowledge informed Ottoman notions of disease, body and health has not yet been addressed.[5] To understand how individuals understood and experienced plague epidemics, it is therefore essential to examine these notions as understood and lived by our historical actors, for whom occult science was often simply good natural and mathematical science, predicated on and conducive of both physical and spiritual health.

A new genre was born in response to this crisis: the plague treatise. Therein early modern Ottoman authors conceived of health as not simply the absence of illness, or limited to the human body alone, but rather as a condition defined by the environmental, behavioral and metaphysical contexts that encompassed and regulated it. In other words, being healthy meant not merely having a healthy body as an individual; one could only achieve a state of health while living in a place blessed by "clean air and water" (a Hippocratic-Galenic dictum) and inhabited by people who maintained a "clean soul." And because clean souls can only be maintained in clean bodies, one must live in "pure" cities, that is, ethically and legally clean and subject to right governance. Morality and government, on the one hand, and the healthy living a given place can offer, on the other, were two sides of the same spiritual-physical coin: good health encourages moral behavior; the same behavior ensures the flourishing of public health. Whether a place could be considered healthy or not was therefore defined by the spiritual state of its inhabitants—a definition that presumes the existence of a special bond between a city and its citizens.

It is this definition of health and healthy living that informed the policies that would determine early modern Ottoman public health. The empire's public health policy thus advocated the removal of perceived contaminants, such as slaughterhouses, waste and corpses, thereby purging the affected city of plague-inducing miasma. But more importantly, it sought to purge the same communities of perceived "moral and spiritual contaminants," including such unwanted urban elements as prostitutes, beggars, bachelors, illegal immigrants, criminals and so on, who could be legally banished and exiled to ensure a healthy spiritual and physical

5 For references see below.

environment. The seminal Ottoman plague treatise discussed and excerpted in translation below, epitomizing this major cultural turn, must be understood according to this broader, occult, quintessentially early modern definition of health.

Taşköprīzāde and His Occultist Plague Treatise

The great Ottoman polymath Taşköprīzāde Aḥmed (d. 1561), imperial judge in Bursa and Istanbul, is now cited almost exclusively as a biographer; his *Red Anemones: On the Scholars of the Ottoman State* (*al-Shaqāʾiq al-nuʿmāniyya fī ʿulamāʾ al-dawla al-ʿUthmāniyya*), one of the most comprehensive biographical dictionaries of the sixteenth century, has long been plumbed by orientalist scholarship as a source on the fifteenth- and sixteenth-century Ottoman elite.[6] But as a prolific author and encyclopedist he is equally important for early modern history of science, philosophy and theology. In particular, Taşköprīzāde's *Key to Felicity and Lamp to Mastery* (*Miftāḥ al-saʿāda wa-miṣbāḥ al-siyāda*) is the most comprehensive Arabic encyclopedia of the rational and traditional sciences of the sixteenth century, unprecedented in its coverage of over 300 disciplines; it served as touchstone for all subsequent Ottoman encyclopedias, including the celebrated *Removing Doubts as to the Names of Books and Disciplines* (*Kashf al-ẓunūn ʿan asāmī l-kutub wa-l-funūn*) of Kātib Çelebi (d. 1657).[7] His tutelage under the astronomer Mīrim Çelebi (d. 1525)—relative by blood and marriage to the preeminent astronomers of the early modern Persianate world, Qāḍīzāda al-Rūmī (d. 1432) and ʿAlī Qūshchī (d. 1474)—is here on full display. Equally on display is his commitment to the occult sciences, the very backbone of natural and mathematical philosophy for many scholars of the post-Mongol era, in the Persianate and Latinate realms alike.

Like his fellow Safavid encyclopedists, in the *Key to Felicity* Taşköprīzāde classes a wide range of occult sciences as applied natural, mathematical and/or religious sciences. Among the natural sciences he includes seven: physiognomy, oneiromancy, astrology, magic, talismanry, illusionism, alchemy. He then treats of eleven subdisciplines of physiognomy (moleomancy, chiromancy and pedomancy, scapulomancy, tracking, parentage physiognomy, topomancy, waterwitching, metalwitching, rain prediction, prognostication, spasmatomancy), five

6 For his biography and its sources see Franz Babinger and Christine Woodhead, "Ṭashköprüzāde," *EI*[2].

7 On this seminal encyclopedia see Gökbilgin, "Taşköprü-zâde ve İlmî Görüşleri"; Çevikel, "Taşköprîzâde (İsâmeddîn) Ahmed."

subdisciplines of astrology (elections, geomancy, bibliomancy, lots, ornithomancy and augury) and fourteen subdisciplines of magic (soothsaying, terrestrial magic, active properties, incantations, spirit magic, jinn magic, planetary invocations, magical diagrams, concealment, Sasanian wealth magic, jewel magic, illusionism, deception magic, medical magic). He also explicitly links medicine to alchemy, and both gemmology and agriculture to natural magic. Among the mathematical sciences, our Ottoman scholar details the subdisciplines of astronomy, which include that science detailing the strange and marvelous phenomena of foreign parts, many of which are explicitly occult, and the science of planetary conjunctions and their astrological effects, as well as the eminently occult science of apocalypse. As for the subdisciplines of arithmetic, he includes the science of magic squares, with heavy emphasis on their talismanic applications, and links it to lettrism (*ʿilm al-ḥurūf wa-l-taksīr*). To show his great regard for the latter science, here comprising the subdisciplines Quran magic, letter magic, divine-names magic and letter divination, he assigns lettrism rather to the *quranic* sciences (an unusual move)—and uses it, unprecedentedly, to structure his encyclopedia as a whole.[8]

This is not to say that our Ottoman encyclopedist was uncritically accepting of all of the sciences he treats, occult or otherwise. He does note, of course, the illegality of the practice of *siḥr* (here meaning "sorcery"), as all good jurists must—while authorizing and even requiring knowledge of its theory as a communal obligation. And in the same breath he praises the closely associated art of talismanry (*ʿilm al-ṭilasmāt*) as being of great practical benefit, if difficult.[9]

8 Taşköprīzāde, *Miftāḥ al-saʿāda*, 1:303-6, 308-22, 327-46, 362-64, 373-74, 2:525-29, 547-50; Melvin-Koushki, "Powers of One," 173-76; idem, "Of Islamic Grammatology," 89-91. Mention should also be made of Taşköprīzāde's much shorter encyclopedia, *Glorious Felicity: On Mastering the Afterlife* (*al-Saʿāda al-fākhira fī siyādat al-ākhira*), treating only some 150 sciences to the *Miftāḥ*'s more than 300. Of the fewer occult sciences it does treat, however, these entries closely parallel their equivalents in the *Miftāḥ*, suggesting that Taşköprīzāde's views on the occult sciences remained fairly consistent over his career, while becoming more nuanced. A case in point is his entry on geomancy in both works: in the *Saʿāda*, presumably written earlier, it is short and critical (99); the same in the *Miftāḥ* expands on his critique for clarification, further assuring us that saints can expect to achieve robust results with the art (1:336).

9 *Miftāḥ al-saʿāda*, 1:314-16. Notably, he lists the *Goal of the Sage* (*Ghāyat al-ḥakīm*, Lat. *Picatrix*) of Maslama al-Qurṭubī (d. 964) (here misidentified as Maslama al-Majrīṭī (d. 1007), a common mistake from Ibn Khaldūn onward) as a key, Hellenistic manual of both sciences. That such a strategy seems to have been common to early modern Persianate societies more generally is suggested by the fact that the same simultaneous prohibition of *siḥr* but validation of talismanry—especially of the lettrist variety—is advanced even by the infamously strict and orthodoxizing Safavid *shaykh al-islām* Muḥammad Bāqir Majlisī Jr. (d. 1699) in his Persian treatise on *ḥudūd* punishments and murder law, *R. Ḥudūd u qiṣāṣ u diyāt*, where he further argues that pagan sorcery simply went extinct with the advent of quranic magic (Melvin-Koushki, "*How to Rule the World*," 143 n. 8).

Similarly, his criticisms of such divinatory sciences as geomancy and lots seem more concerned with quality control, given their popularity in Ottoman society, and do not hint of prohibition. He is thus fairly hard on geomancy (*ʿilm al-raml*)—arguing for its status rather as a prophetic miracle and saintly science, and hence not normally subject to mastery by the less saintly as a mere technical art. But this gatekeeping only adds to its prestige, thereby serving to discourage charlatans; it also testifies to the science's contemporary ubiquity.[10] By legally, epistemologically and sociologically dissociating them from *siḥr*, Taşköprīzāde is able to present some forty other occult sciences, whether natural, mathematical or religious, as generally unproblematic, though of varying degrees of usefulness, practicability and scholarly and spiritual rigor. This includes even his fourteen subdisciplines of magic itself. Nor is his promotion of (most of) the occult sciences here absent from his works in other genres: in the *Comprehensive Treatise Describing the Useful Sciences* (*al-Risāla al-jāmiʿa li-waṣf al-ʿulūm al-nāfiʿa*)—an Arabic theological-legal work explicitly excluding the philosophical sciences from consideration as irrelevant to the spiritual welfare of common Muslims—Taşköprīzāde makes a strong argument for astrology as a science requisite for social and hence spiritual health. Most remarkably, given his mathematical training, in the same passage he places strict legal limits on the practice not of astrology, but of astronomy.[11]

The same occult-scientific—especially *lettrist*—commitment defines Taşköprīzāde's important Arabic work on plague, *Treatise on Healing Epidemic Diseases* (*Risālat al-Shifāʾ li-adwāʾ al-wabāʾ*). Its seminal status is testified to by its survival in some 30 manuscript copies in Turkey alone, as well as at least three full

10 See n. 8 above.

11 *Al-Risāla al-jāmiʿa*, 39 (note that the editor's punctuation of the end of the passage is misleading, and does not accord with the Arabic syntax—the author is hardly condemning almost all sciences to illegality):

> The second type of useful knowledge is that which is secondarily so, [unlike the Arabic sciences or logic, which are primary]. This includes those sciences which have to do with ordering one's life, such as medicine, which concerns the body; arithmetic, which concerns bequests and inheritances; and astrology (*maʿrifat al-aḥkām*), for preventing conflicts and governing society. Like juristry, such sciences are among those matters that are communal obligations, [not individual ones]. It also includes those sciences which have to do with completing one's mastery of the afterlife sciences, such as quranic recitation and phonetics; abrogated verses; reports and hadiths in all their detail, including the names of transmitters, and the ability to distinguish those with incomplete chains of transmission from those with complete, and reliable hadiths from weak, and so on; and astronomy (*ʿilm al-nujūm*), though only to the extent it allows for the determination of prayer times and the direction of the qiblah (more than this is prohibited). All these are among the useful sciences, whether pertaining to this life or the next—indeed, [in their usefulness], all belong to the afterlife sciences.

or partial translations into Ottoman Turkish.[12] This treatise, quite simply, is the most comprehensive of all known and extant early modern Islamicate offerings on the subject, for all that it has yet to be adequately studied by modern scholars, or even printed in a critical edition.[13] But it may be assumed to fairly accurately represent the Arabo-Perso-Turkish state of the theological and medical arts of the mid-sixteenth century, here with a focus on plague—the single most important environmental factor shaping societies across early modern Afro-Eurasia generally and Islamicate societies in particular.[14] And nowhere was the impact of plague more profoundly felt than in the Ottoman Empire, which, as noted, endured frequent (sometimes annual) epidemic outbreaks for 600 years. In response, the Ottoman state began to develop a new public health policy and gradually implemented it—often, it seems clear, by means of occult science.

As an eminent Ottoman imperial scholar working two centuries into the Ottoman plague experience, Taşköprīzāde was thus especially well-placed to observe and understand this sweeping environmental and cultural transformation. His theological-scientific plague treatise—most of whose science is occult—therefore stands eloquent testimony to this early modern imperial-scientific turn. As such, it is rather dramatically divergent from medieval Arabic (and Latin) precedent in its pragmatic emphasis on direct, local experience over the more conservative approach that defined virtually all medieval instances of the genre.[15]

The *Treatise on Healing Epidemic Diseases* has two main objectives. Its first half advances a robust legal-theological argument for the legitimacy of fleeing from or decontaminating plague-stricken areas, criticizing certain conservative scholars and sufis for their fatalistic tendencies.[16] The latter ethos is enshrined in a number of earlier Arabic plague treatises, which argued against both the contagiousness of the disease and the permissibility of fleeing therefrom; these arguments are soundly refuted.[17] The theological tension here is analyzed in terms of the binary pair *tawakkul* and *tasabbub*, or absolute trust in God *versus* inquiry into the causes of things. Two broad camps are then identified and addressed at length: those who

12 For a partial list see İhsanoğlu et al., *Osmanlı Tıbbi Bilimler*, 1:139-40; İhsanoğlu et al., *Fihris makhṭūṭāt al-ṭibb*, 280-82.

13 For a brief and unreliable summary see Çankaya, "Taşköprülüzade Ahmet."

14 See Varlık, *Plague and Empire*, passim.

15 This argument is made in Varlık, "Between Local and Universal"; see also n. 37 below.

16 On this theologically fraught question see ibid., and Stearns, *Infectious Ideas*.

17 Varlık, *Plague and Empire*, 243 n. 100; Stearns, "Public Health," 173-75.

reject *tasabbub*—which is to say, reject what we might call "scientific method"—as impiety, and those who think science and piety perfectly compatible, combining them as appropriate.[18] Most significantly, Taşköprīzāde singles out "the common run of sufis and those Muslims who imitate them" (*ʿāmmat al-mutaṣawwifa wa-jumhūr al-muqallidīn ilayhim min al-muslimīn*) as constituting the anti-science camp. This distinction would appear to be peculiar to the early modern Ottoman context, and the binary it posited was religiously, politically and socially consolidated in the seventeenth century; but elsewhere in the post-Mongol Persianate world sufism and science easily professionally mixed.[19] Thus astrology (*aḥkām al-nujūm*)—an elite science institutionalized at the Ottoman court to an unprecedented extent—was rejected as irreligious less by Ottoman theologians than by Ottoman sufis, who often argued that it entails astral determinism.[20]

Taşköprīzāde's incisive social critique and empiricist argument for human agency thus reveals the contemporary Christian anti-Ottoman trope of the "fatalistic Turk"—which, astonishingly enough, modern historiography has largely unquestioningly accepted as historical truth[21]—to be a purely polemical fiction; our "Turk" scholar rather mocks the "fatalistic sufi." More importantly, Taşköprīzāde here consciously performs a specifically early modern *progressivist* ethos. Against classical precedent and contemporary conservativism alike, he defends new techniques of combating plague by showing the newness, that is, the unprecedented destructiveness, of the Black Death, which therefore marks

18 That Taşköprīzāde died the year that Francis Bacon—canonized father of the Western scientific method—was born, 1561, is here suggestive; it must be emphasized that Bacon too promoted what he imagined to be specifically *Persian* magic as fundamental to the renovation of natural science. See Josephson-Storm, *The Myth of Disenchantment*, 44-51. But to be clear: I suggest "empiricism" and "scientific method" as plausible if approximate translations for *tasabbub* not to argue for the Ottoman scholar as a Baconian *avant la lettre*, but rather to convey something of the empiricist sense contemporary readers would have understood. The same principle informs my anachronistic use of "science" in this early modern context. Needless to say, the *tawakkul* vs. *tasabbub* debate was already of long standing in Arabo-Persian scholarship by the sixteenth century, with sufis especially asserting and associated with the first position. What is notable here, however, is that Taşköprīzāde, a Khalwatī sufi, criticizes the traditional sufi position so categorically, using the term *tasabbub* synonymously with *taḥqīq* and *tajriba*, in order to urge prudent, aggressive action on multiple fronts—scientific, medical, theological, legal, political, economic—in the face of deadly and recurrent plague epidemics. On various critiques and defenses of *tawakkul* see Stearns, *Infectious Ideas*, ch. 6.

19 Epitomizing this concordist trend is the Ilkhanid sufi-scientist Niẓām al-Dīn Ḥasan Nīshābūrī (d. ca. 1330), on whom see Morrison, *Islam and Science*.

20 Şen, "Astrology in the Service of the Empire," 31, 98-103.

21 Varlık, *Plague and Empire*, ch. 2; idem, "'Oriental Plague.'"

a turning point in Islamic and world history.[22] But to successfully navigate the new biological challenges of a new age, our imperial judge concludes, one must, as always, follow the Platonic-Aristotelian-Muḥammadan middle path, and pursue both spiritual and physical science.

In substantiation of this proactivist, progressivist, Hellenic-Islamic theme, the second half of the treatise is devoted to a synthetic presentation of those scientific methods whereby plague may be combated or cured. That is, its first half argues for human agency, then its second half identifies that agency with science—especially of the occult variety. Here Taşköprīzāde proposes a neat distinction between physical (*jusmānī*) and spiritual (*rūḥānī*) medicine, and surveys the most experimentally reliable (*tajribī*) and theoretically probative (*taḥqīqī*) methods of both categories. Examples of the first, naturally, are drawn entirely from Galenic-Avicennan medicine. The second is wholly devoted to the quranic-mathematical occult science that is lettrism. As noted, Taşköprīzāde's esteem for this occult science in particular is likewise evident in his *Key to Felicity*, wherein the encyclopedist asserts its status as supreme quranic science, and so uses it to structure the whole of Islamic knowing.[23]

While this might seem strange and certainly "unscientific" by modern standards, letter magic and letter divination were ubiquitous components of scholarly and popular culture throughout the early modern West, going under the Hebrew name of kabbalah in western Europe and the eastern Mediterranean. Most notably, it emerged as the prime vehicle of Neopythagorean cosmology—positing the world as a *mathematical text*, to be decoded, and magically recoded, by the self-divinizing scientist—in Islamdom and Christendom alike. (Think *The Matrix*.) It is thus no

22 On this ethos as a development common to the Afro-Eurasian ecumene as a whole see Melvin-Koushki, "*Taḥqīq* vs. *Taqlīd*."

23 See n. 8 above. In the treatise at hand, Taşköprīzāde refers to its practitioners as "masters of amuletry and those specialists in letter divination, magic squares and temurah conversant with the active properties of the divine names" (*arbāb al-ʿazāʾim wa-l-ʿārifūn bi-khawāṣṣ al-asmāʾ al-ilāhiyya min ahl al-jafr wa-l-awfāq wa-aṣḥāb al-taksīrāt*) (p. 74/f. 51b). Citing Taşköprīzāde's treatise (on the basis of an abbreviated Turkish translation), Birsen Bulmuş's study of selected Ottoman scholarly discussions of plague does note the lettrist and occultist aspect of much of its plague medicine; it also correctly registers lettrism's coeval relationship to kabbalah, on the one hand, and the similar importance of kabbalah in the projects of certain exponents of contemporary English scholarly culture, on the other (*Plague, Quaratines and Geopolitics*, ch. 4). Unfortunately, however, her account is wholly unmoored from the relevant primary and secondary sources, and cannot be relied upon here. In particular, her assertion that Taşköprīzāde derived several of his lettrist operations from Sephardic Jewish kabbalists (69) opens up a prospect that is exciting indeed—but is sadly almost certainly fictional: the single folio number she cites in its support does not exist, nor is there any evidence to this effect in Taşköprīzāde's original Arabic treatise, which appears to be exclusively Būnian-Bisṭāmian in its lettrism.

accident that most of the important mathematizing thinkers of the era, Muslim, Jewish and Christian, were avowed lettrists-kabbalists and/or Pythagoreans. In this context, Taşköprīzāde's emphasis on this specifically Neopythagorean occult science is hardly bizarre or proof of oriental decadence, but rather exemplary of the larger Western zeitgeist that gave us the holy scientific lineage *Copernicus-Bacon-Kepler-Galileo-Newton*.[24]

The equally neat distinction in modern historiography of Islamicate science between potentially *real* Galenic-Avicennan medicine (aka "proto-medicine") and eternally *false* Prophetic medicine (aka "superstition"), and the almost exclusive focus on the former at the expense of the latter, thus does extreme violence to the categories of our early modern actors. It also ignores the decidedly occult tenor of much of this "proto-medicine," predicated as it was on diagnosis of nonvisible (*bāṭin*) causes from manifest (*ẓāhir*) symptoms, as well as the activation of the occult properties (*khawāṣṣ*) and cosmic correspondences (*munāsabāt*) of animal, vegetal and mineral forms to manage human health.[25]

Our category error here stems from a cosmological problem at root. Modern *materialist* cosmology—and history of science and medicine as a discipline is nothing if not materialist—assumes that mind can only be an epiphenomenon of matter at best; thus occult science (universally defined by its proponents as the technological harnessing of mind-matter and mind-mind relationships) can only be deception or delusion, and hence of no scientific worth. But early modern Muslim authors like Taşköprīzāde, together with many of his contemporary Christian and Jewish peers, operated rather in a Neoplatonic-Neopythagorean *panpsychist* cosmological framework, whereby Magic was simply Science, and indeed a primary means by which one socially lived Hellenic-Islamic philosophy. Consciousness and language structure the cosmos: therefore the imperial healthscape may be magically *rewritten* by means of animals, plants and minerals, in the terrestial (i.e., natural) realm, and planets, angels and quranic letters and numbers, in the celestial (i.e., mathematical) realm, for the preservation of Islamic Empire.[26]

24 For references see Melvin-Koushki, "Powers of One."

25 Manfred Ullmann's seminal work on the history of medicine and the natural sciences is here an exception: he sadly acknowledges the terminal infection of these Islamicate disciplines with "magic," thereby condemning their Muslim practitioners to eternal unmodernity. See e.g. Ullmann, *Natur- und Geheimwissenschaften*, 1; Lemay, "L'Islam historique." For a nonteleological account of Galenic medicine as often magical and alchemical see Harris, "Better Religion through Chemistry."

26 On this cosmological problem see Melvin-Koushki, "Is (Islamic) Occult Science Science?"

In this cosmological-imperial context, it is therefore unsurprising that the majority of the scientific half of Taşköprīzāde's plague treatise, and over a third of the work as a whole, is devoted to specifically *lettrist* medicine, centrally featuring the construction of magic-square-driven talismans based on divine names to ward off the epidemic disease.[27] Equal emphasis is placed on the experimentally proven (*mujarrab*) or empirical nature of the operations therein. As will be seen, his cited primary sources to this end are the Arabic lettrist classics of the North African sufi-mage Aḥmad al-Būnī (d. btw. 1225-33) and the Ottoman occultist-apocalypticist ʿAbd al-Raḥmān al-Bisṭāmī (d. 1454). These figures together defined lettrist praxis as it would be pursued throughout the early modern Islamicate world—which praxis became a crucial prop to early Ottoman universalist imperial ideology, as well as to that of their Timurid, Aqquyunlu, Safavid and Mughal rivals.[28] Most significantly, this is the basis for Taşköprīzāde's *scientific* conclusion that the maintenance of a morally and spiritually clean society is at least as important as maintaining clean physical surroundings. Spiritual and physical medicine must therefore always be practiced in tandem; and spiritual medicine is superior to physical, just as mathematical science is epistemologically superior to natural.[29] The treatise's emphasis on divine-names magic is thus designed to prove its author's framing theological argument: to mathematically and technologically harness a quranic name of God (like *al-Shāfī*, "the Healer") by means of a talisman is to perfectly synthesize *tawakkul* and *tasabbub*, Religion and Science.

It must be emphasized that Taşköprīzāde's contribution, while the most comprehensive known, extant example of the genre from the early modern Islamicate world, is nevertheless representative of a larger Ottoman and Arabo-Persianate scholarly ethos developed during the late fourteenth and fifteenth centuries and endemic by the mid-sixteenth, when occult science in general and lettrism in particular was utterly mainstream. Reflecting the western Mediterranean matrix of the latter science, at least three surviving early Andalusi-Maghribi plague tracts promote the invocation of divine names and use of quranic prayer as an

27 It should be emphasized that lettrist medicine is not tantamount to Prophetic medicine, for all that the former often draws on the latter: it is rather predicated on a specifically Neopythagorean cosmology, and here boasts a specifically Būnian-Bisṭāmian pedigree. At the same time, it is precisely the *quranic* nature of lettrism that allowed Muslim occultists to brazenly sidestep earlier prohibitions on *siḥr*.

28 Fazlıoğlu, "İlk Dönem Osmanlı İlim"; Fleischer, "A Mediterranean Apocalypse"; idem, "Ancient Wisdom and New Sciences"; Melvin-Koushki, "Early Modern Islamicate Empire."

29 On the emergence of this "mathematical humanism" see Fazlıoğlu, "Between Reality and Mentality"; Melvin-Koushki, "Powers of One."

effective means to prevent the disease, with nods to other astrological-magical considerations. While those of Muḥammad al-Shaqūrī (d. 1348) and Ibn Manẓūr al-Qaysī (fl. 1460) are not overtly lettrist in tenor, however, the *Philosophical Tract on Epidemic Diseases* (*al-Maqāla al-ḥikmiyya fī l-amrāḍ al-wabāʾiyya*) of the Fezzi mathematician Ibn Haydūr al-Tādilī (d. 1413), written before or around the turn of the fifteenth century, gives precedence to letter-magical over Galenic-Avicennan medical prescriptions.[30] This is the trend that would ramify throughout the eastern Mediterranean and thence parts further east. Thus perhaps the first Turkish medical compendium to discuss plague, the *Selection of Healings* (*Müntehab-ı şifā*) of the Anatolian physician Jalāl al-Dīn Khiḍr (Celālüddīn Hızır, d. ca. 1417), aka Hacı Paşa, prescribes divine-name talismanic remedies as a matter of course.[31] Even the much shorter Arabic plague treatise of the Ottoman Chief Jurisconsult, Kemālpaşazāde Aḥmed's (d. 1534) *Spirits' Comfort* (*Rāḥat al-arwāḥ*), written a century later, is likewise half devoted to lettrist medicine, as its title implies. Tellingly, the same worthy is the likely author of a Turkish treatise (or rather imperial research proposal) on talismanry that is centrally concerned with prescriptions for combating the plague.[32] Nor is it a coincidence that al-Bisṭāmī himself penned not one but two Arabic treatises on plague and epidemic disease: *Description of Medicine in Explication of Epidemic Plagues* (*Waṣf al-dawāʾ fī kashf āfāt al-wabāʾ*) and *Select Litanies Constituting Proven Medicines* (*al-Adʿiya al-muntakhaba*

30 These three plague treatises are introduced and translated in Gigandet, "Trois *Maqālāt* au sujet des épidémies de peste," and idem, "Trois *Maqālāt* sur la prévention des épidémies," respectively. This is not to say that Ibn Haydūr's very short offering is properly lettrist in the same way as the subsequent treatises discussed here: it does not include magic-square talismans, and the divine names he proposes for talismanic use are different from those proposed in the latter. At the same time, the Maghribi scholar's status as a mathematician must here be considered significant. Dols was the first to link Ibn Haydūr with Taşköprīzāde in this respect—though only to dismiss both as superstitious, anti-empiricist throwbacks (*The Black Death*, 121-42).

31 Specifically, in his short section on plague, Hacı Paşa provides five magic squares in total, including a 12 x 12 magic square based on the divine names *Walī*, *Wālī*, *Wafī*, *Wāfī*, *Wāqī*, *Wārith*, *Wāsiʿ*, *Wahhāb*, *Wakīl*, *Wāḥid*, *Wājid* and *Wadūd* (*Müntehab-ı şifā*, 174-79: 175). This section is all the more striking given the author's dependence on Ibn Sīnā (d. 1037) otherwise, who only began to be reimagined as a lettrist in the Persianate world in the late fifteenth century—an index of the paradigm shift traced in this article; on this reimagining see Melvin-Koushki, "World as (Arabic) Text." More locally, on Hacı Paşa's significance as a transmitter of Maghribi scholarship to Ottoman Anatolia by virtue of his training in Cairo, see Yıldız, "From Cairo to Ayasuluk." Note that he also produced an even more popular Turkish abridgement of the *Müntehab-ı şifā*, but it has not yet been published or studied. As Yıldız notes, a "thorough study of what was retained, added to or dispensed with from the Avicennian tradition in Hacı Paşa's Turkish and Arabic medical corpus remains a desideratum for future work on medieval Anatolian and Ottoman medicine" (290).

32 On these two works, and Kemālpaşazāde's occultist interests more generally, see Şen, "Practicing Astral Magic."

fī l-adwiya al-mujarraba).[33] Not surprisingly, both also are heavily lettrist in focus. And the Cairo connection is here crucial. In the transformative wake of the Black Death, the Mamluk capital became the capital of the occult-scientific renaissance so clearly reflected by Taşköprīzāde's plague treatise of two centuries later; it is there that the Būnian-Bisṭāmian medical magic he prescribes—much more sophisticated than Ibn Haydūr's—was first worked out, then vigorously propagated by Timurid, Aqquyunlu and Ottoman courtly elites over several decades.[34]

However, it must likewise be emphasized that the Islamicate and specifically Persianate genre of the plague treatise remains almost unstudied; Safavid and Mughal works on the subject have yet to even be identified. An intra-Persianate generic continuity on this front too is nevertheless very likely. Imperial rivalry and confessional branding aside, the boom in occult-scientific discourse, with an emphasis on astrology, lettrism, geomancy, oneiromancy, physiognomy and alchemy, was common to the Ottoman, Safavid and Mughal realms, and built upon shared Arabo-Persian canons. Sociopolitically, Iran became a major exporter of occultists to its wealthier imperial neighbors.[35] A case in point is the equally seminal plague treatise of Idrīs Bidlīsī (d. 1520), *Eschewing Plague-stricken Places* (*Ibāʾ ʿan mawāqiʿ al-wabāʾ*) of 1513, the primary model for Taşköprīzāde's similarly structured offering of a few decades later: therein the turncoat Aqquyunlu-then-Ottoman scholar develops the first detailed rationalist and traditionalist argument in favor of its titular policy of flight—and supplies a medical appendix, most of whose medicine is likewise lettrist.[36] This occultist agenda reflects Bidlīsī's training as a member of the Aqquyunlu chancery, where he mastered

33 On these treatises see Varlık, *Plague and Empire*, 225-28, 233, 243. Cf. Gardiner, "The Occultist Encyclopedism"; idem, "Books on Occult Sciences." On the genesis and evolution of Būnian-Bisṭāmian divine-names magic see idem, "Esotericism in a Manuscript Culture."

34 Gardiner, *Ibn Khaldūn versus the Occultists*; Melvin-Koushki, "Powers of One," passim.

35 Ibid.; Melvin-Koushki, "The Occult Sciences in Safavid Iran."

36 This appendix runs to 12 folios, out of 59 total, in the following copy: Istanbul, Süleymaniye, MS Aşir Efendi 275/3, ff. 101b-60b; see ff. 149a-60b. It is here significant that this codex includes only three works, Taşköprīzāde's original Arabic plague treatise, its abbreviated Ottoman Turkish translation and Bidlīsī's own Arabic treatise, suggesting that some Ottoman scholars continued to see them as a pair through at least the eighteenth century. Likewise significant is the fact that, together with his identical framing of the appendix generally according to physical and spiritual regimens, Taşköprīzāde copies a few of Bidlīsī's lettrist operations almost verbatim from the latter's treatise, including his discussion of the divine name *al-Muʾmin*, the six quranic verses of healing and the experience of Shaykh ʿAlī b. Lālā al-Isfarāyinī in Egypt (for Bidlīsī's original see f. 157a-b). At the same time, the lettrist content of Taşköprīzāde's treatise is much more extensive, and fully expounds on points left somewhat cryptic in Bidlīsī's shorter but sophisticated treatise. For a study and contextualization of the latter, especially in relation to Ottoman discourses of sovereignty, see Stearns, "Public Health."

the specifically Timurid vocabulary of occult-scientific imperialism in order to upstage it, then redeployed the same for his new Ottoman patrons.[37] With such a model, Taşköprīzāde's treatise too must be considered a joint Mamluk-Timurid-Aqquyunlu-Ottoman production.

These continuities aside, the *Treatise on Healing Epidemic Diseases*—thoroughgoingly occult-scientific and empiricist—is a landmark in its own right, and deserves close study as such. As its intellectual horizon makes clear, Islamicate occult science may no longer be openly scorned or tactfully ignored as the traditionalist, superstition-bound *antithesis* of empiricism, "une fuite échevelée vers l'irrationel,"[38] by the modern positivist historian.[39] Now that Taşköprīzāde's oeuvre is at long last receiving the attention it deserves, it is to be hoped that this

37 Varlık, *Plague and Empire*, 243; Markiewicz, *The Crisis of Kingship*, 176, 183-84, 219, 257-58, 265, 267, 287; Şen, "Astrology in the Service of the Empire," 201-2. In particular, Bidlīsī's *Eight Paradises* (*Hasht bihisht*), a Persian dynastic history written at the instance of Sultan Bāyezīd II (r. 1481-1512), features various lettrist and astrological excurses. On this lettrism-astrology pairing as originally specific to Timurid imperial ideology see Melvin-Koushki, "Early Modern Islamicate Empire."

38 Weill-Parot, "La rationalité médicale," 74.

39 A classic expression of such scornful positivism is Michael Dols's theoretical preamble to his discussion of Taşköprīzāde's treatise and its ilk (*The Black Death*, 121-22):

> In general, the magical beliefs and practices indicate a common need to supplement or replace inadequate medical knowledge with supernatural devices for protection and relief from plague. These beliefs and practices may be said to be a popular extension of the Muslim religion: in most cases, we find that the incantations and charms are drawn primarily from traditional Islamic sources … The use of magic actually reinforces the contention that religious influence was paramount in any attempt to understand the nature of plague and combat its effects ….

Even the study of Latin and West European vernacular plague treatises, while far more advanced than that of Arabic ones, much less any other Islamicate language, similarly remains largely positivistic, discounting occult and religious prescriptions as merely theological and popular, certainly not scientific and empiricist (my thanks to Lori Jones for this observation; see the Conclusion below). The historiographically perverting nature of this Religion vs. Science and Traditionalism vs. Empiricism binary with respect to the Arabic plague treatise genre may likewise be seen in the example of the Andalusian historian, physician and chancellor Ibn al-Khaṭīb (d. 1374), whose own plague treatise Dols facilely lionizes as anti-traditionist and anti-occultist, *and therefore* empiricist (ibid., passim; for a critique of this false binary see Stearns, *Infectious Ideas*, ch. 3). Now Ibn al-Khaṭīb was much less invested in the occult sciences than Taşköprīzāde, to be sure; at the same time, his writings evince a professionally mandated familiarity with astrology, as well as a close interest in the political cosmology of his fellow countryman Ibn ʿArabī (d. 1240), the Supreme Shaykh and lettrist *par excellence*, so cannot be said to be either anti-traditionist or anti-occultist. More generally, his scholarly and political prominence in this medical regard provides an instructive index for understanding the sociopolitical pressures borne by many of the plague treatise writers cited above, including in the first place Ibn Khātima and al-Shaqūrī, on which see Ballan, "The Scribe," ch. 5.

treatise will also be critically edited and fully translated soon:[40] for it is a prime example of intra-Persianate imperial-scientific culture generally, and the author's clearest formulation of a new Ottoman epidemiology specifically, and so of particular salience to early modern history of science and medicine.

Treatise on Healing Epidemic Diseases

To encourage the comparative study of Ottoman and other Persianate plague treatises by historians of early modern science and medicine in the meantime, I translate below a number of representative passages from Taşköprīzāde's work for consideration by Islamicists and Europeanists alike. They are taken exclusively from its scientific appendix (*tadhyīl*), which constitutes a full half of the whole, together with the introduction thereto in the last section of the work.[41] While space does not permit a full translation (it runs almost 50 pages in the 1875 Cairo edition, of 104 pages total), the proportionality of its two categories, physical and spiritual, has been roughly maintained below in order to give an accurate impression of the author's purpose. Again, that purpose was often emphatically lettrist, which the excerpts below fairly represent. But first, the treatise's table of contents:

Introduction

Q1: Exposition of the meaning of absolute trust in God (*tawakkul*) and its degrees

Q2: Exposition of the place of absolute trust in God vis-à-vis inquiry into secondary causes (*tasabbub*)

Q3: On the disagreement of the two named groups on the matter of divine providence (*rizq*)

Q4: On the disagreement of the two named groups on the matter of medical treatment (*tadāwī*)

40 The Taşköprîzâde Külliyatı Projesi, headed by İhsan Fazlıoğlu and ongoing since 2015 under the aegis of the İLEM Scientific Studies Association in Istanbul, is in the process of producing editions and Turkish translations of the major and minor works in his oeuvre, so specialists should not have long to wait.

41 I had access to the following sources at the time of writing: Istanbul, Süleymaniye, MS Aşir Efendi 275/1, ff. 1a-73a (copied 1184/1770); Riyadh, King Saud University Library, MS 6737, 90 ff. (copied 12th/18th c.); lithograph, Cairo: al-Maṭbaʿa al-Wahbiyya, 1292/1875, 104 pp. (freely available on Google Books). These copies are occasionally unreliable, though together they allow for a coherent reading.

Two Paths

P1: On the reasons offered by those who prefer to remain in plague-infested places rather than fleeing

P2: On the reasons offered by those who permit one to flee from a place struck by plague and seek medical treatment, together with answers to the objections of those who do not

Conclusion

Exposition of the truth of this matter, which depends on establishing that wholesome airs (*ahwiya*) pertain to the preservation of health and corrupt airs to the incipience of diseases, according to traditional and rational arguments[42]

Appendix

Various addenda in exposition of the cause of plague and source of its occurrence, and in exposition of what has been claimed with respect to its contagiousness, and in exposition of its virtue, and in exposition of the property of prayers for removing it, and its treatment by spiritual (*rūḥānī*) and physical (*jusmānī*) means

Q1: On the cause of plague

Q2: On the source of the occurrence of plague

Q3: On the cause of plague, according to physicians

Q4: Exposition of the property of contagiousness

Q5: On the virtue of plague

Q6: On prayer for the removal of plague[43]

42 The emphasis here is on rational arguments, classed according to "witnessing" (*mushāhada*) and "experience" (*tajriba*).

43 Here Taşköprīzāde dismisses the Mamluk polymath Jalāl al-Dīn al-Suyūṭī's (d. 1505) argument against communal prayer for the removal of plague as an illicit innovation (*bidʿa*), given that it was unprecedented in the Muslim community until 749/1348, the year the Black Death hit Cairo. And even other prominent Mamluk scholars like Ibn Ḥajar (d. 1449) tended to categorize communal prayer to this end as forbidden, though individual prayer as licit. Taşköprīzāde, however, marshals exceptional traditions to the effect that prayer, communal or otherwise, was in fact recommended by the righteous forebears (*salaf*) to free oneself from pain or punishment, especially when combined with herbs and stones.

Q7: On treating plague

O1: On physical regimens (*tadābīr*)

O2: On spiritual regimens with respect to this terrifying matter

Concluding section

[List of five famous plague epidemics from early Islamic Iraq and Syria, together with a number of others since in Syria, Iraq, Iran, Azerbaijan, India and Egypt, the last in Cairo in 833/1430]

Appendix 7: On Treating Plague

Know that just as the causes of an illness are to be classed as either spiritual (*rūḥānī*) or physical (*jusmānī*), so too are the medical treatments thereof; and just as a physical illness is counteracted by means of a medicine that introduces a quality into the body opposite to that of the illness, so too do transmitted invocations (sg. *duʿāʾ*) and approved amulets (sg. *ruqya*) counteract spiritual influences. Now physical materials have no spiritual effect—indeed, the natural (*al-ṭabīʿa*) is capable of counteracting them [on its own], which is quite easy for it, though [its effect] soon vanishes entirely. But if the two regimens are combined, their counteracting effect becomes extremely powerful, and the [resulting] medicine most effective.

Know, moreover, that the method of counteracting humors medically is a science based on both experimentation (*tajriba*) and analogical deduction (*qiyās*).[44] The first principle is obvious to everyone. As for the second, given that the introduction of one of a pair of opposites in place of the other can only be accomplished sequentially—that is, one must be removed before the other can be introduced, since they cannot be combined—, it is evident that physicians' medicines center on the treatment of an [elemental] quality by its opposite. If the quality of the medicine is introduced to the body, that of the illness must needs be expelled, its removal from the body being the desired effect. However, the difficulty for the physician is in knowing what the quality of the illness is and its various degrees, [on the one hand], and that of the medicine and its various degrees, [on the other], such that his treatment will have the desired effect.

44 This closely paraphrases Ibn Sīnā (d. 1037) in his *Canon of Medicine* (*al-Qānūn fī l-ṭibb*), definitive of Western medical practice through at least the eighteenth century.

As for the counteraction of spiritual conditions by means of spiritual medicines: when such conditions are evil, they represent a locus of manifestation for the attributes of domination (*qahr*) belonging to the true Actor, [i.e., God], and so when quranic verses and traditional invocations focused on His attributes of beauty (*jamāl*) are used a relationship of opposition is formed.[45] When the one occupying himself with these verses and invocations—especially if done with total sincerity of heart and mind and in a state of physical and spiritual purity, observing the conditions specified by all spiritual physicians among the prophets and messengers and their heirs among the saints—takes inner refuge in the divine essence, entrusting his heart to the protection of the divine attributes of beauty, and outwardly devoting himself to the recitation of these words, thereby taking on the color of these attributes, no place is left [within him] for their opposites among the divine attributes of majesty (*jalāl*) and domination: for there is opposition among the divine names, which accordingly exert their effects sequentially too. Likewise, the souls of those who make themselves a locus for the attributes of beauty become a medium communicating the effluxion of the One to the ill such that their illness is cured. This is by way of the abovementioned analogy, whereby the introduction of a thing's opposite may only be sequential, since they cannot be combined.

Herein are occult secrets and matters that can only be known through direct intuitive perception (*kashf*); none attain them but those possessed of vision and insight (Q 3:13 etc.) among the pure prophets and righteous saints, who are conversant with the knowledge of the divine names and attributes effluxing from the holy realm of the secret and matters occult. But I shall not divulge them here, not to withhold them from the worthy, but for fear that the natures of those whose hearts are sealed will lead them into the disaster of denial. But God is the Watcher over these secrets, and All-powerful to accomplish what He will—*an excellent Protector, an excellent Helper* (Q 8:40, 22:78)!

I shall therefore discuss this matter [of treating plague] according to two objectives (sg. *maqṣad*), [as follows].

45 It must be emphasized that the principle of the union of opposites (*majmaʿ al-aḍdād*) is central to lettrist-Neopythagorean theory and practice, and structures much of early modern Islamic philosophy and indeed medicine more generally. It was likewise celebrated by contemporary Christian Neopythagoreans under the term *coincidentia oppositorum*, coined by Nicholas Cusanus (d. 1464); see Alberton, *Mathematical Theologies*.

Objective 1: On physical regimens

I discuss these first due merely to the ease of their application according to all, despite the fact that spiritual regimens are more powerful and appropriate, as is evident.

Know that one's constitution (*mizāj*) is to be regulated either through the protection of health through prevention and medicine or through combating illness through the application of medicine together with maintenance of preventative measures. But the preservation of health in the face of this frightful matter is predicated on knowledge of its causes and its signs. As its causes have already been thoroughly discussed, I will therefore discuss here its signs.

Now the signs that warn of the incipience of this disease are of two classes: environmental and physiological.[46] As for the first class, those that signal it most strongly among meteorological phenomena in autumn is a profusion of shooting stars and meteor showers of all types; in spring, little rain with high winds from the south, and frequent atmospheric changes from cloudy to clear in the space of a week, more or less, as well as cold nights and cloudy days; in summer, intense heat with cloudy skies and dessicated trees, especially when followed by meteor showers and fires in the fall. In short, its primary cause is the changing of weather from moment to moment in a single day and atmospheric pallor and cloudiness, as well as alternating cloudiness and clearness at sunrise. Strong indicators of the same are also an unprecedented profusion of those animals born underground, and their untimely appearance, such as rats, ants and the like, as well as of those vermin born of decay at unusual times and places, such as frogs and the like; likewise the fleeing of sensitive sky-dwelling birds from their nests, such as storks, ravens and piebalds (*ablaq*).

As for the second class, the internal signs of the incipience of plague, it includes high fever and heavy panting, perhaps accompanied by vomiting, heart palpitations and fainting …

The external and internal signs of plague having been identified, let us discuss those medicinal treatments that are [strictly] natural. These either serve to preserve health upon the appearance of its signs externally, or to counteract the disease when its signs appear internally.

46 Lit., "signs on the horizons and signs in the souls" (*ʿalāmāt fī l-āfāq wa-ʿalāmāt fī al-anfus*), a reference to Q 41:53.

As for the first class, the most beneficial and effective—as tested by me personally (*tajriba*) and by those of our predecessors whose word is true and whose deeds are to be emulated—is to alter the air responsible before corruption can pervade and poison it or one's humors. That is to say, one should decamp to a place where that disease does not normally strike, though only if one has discharged the conditions specified, to wit: one must fulfill all civic obligations and household obligations, as well as maintaining belief, whether fleeing or staying, in the omnipotence of the Prime Mover and His will. But if it is not easy to change one's environment—whether due to the ubiquity of the pest, fear of abandoning the sick or out of a desire to protect right belief (this last being the most fundamental principle, the center of the circle that is Islam and pivot of the realm of faith)—, then one must clean and ameliorate one's spaces and clear one's water and air of all corrupting agents by means of various other ameliorations.

For example, you should place juicy fruits and sweet aromatic herbs throughout your dwelling, arranging fragrant electuaries and sprays derived from those fruits that strengthen the heart and the brain, including apple and quince juice mixed with camphor and sandalwood, as well as rosewater. You should further sprinkle the house repeatedly with water mixed with vinegar, rosewater, willow and water lily. Said the monk-[physician] Simeon [of Taybutha]:[47] In the event of epidemic, sweep out your house and sprinkle it with vinegar and asafetida, and eat garlic with vinegar and asafetida daily, and burn incense of Indian wood, musk, sandalwood, sweetsop, storax and frankincense, all of which improve viscous air. It is also said that one should drink a mixture of Armenian clay, vinegar and water daily … Said Ibn Sīnā: The fragrance of citron peel improves corruption of the air and counteracts epidemic disease; cow butter applied to buboes is beneficial; currants alleviate the pressure of blood in buboes, and are also beneficial when eaten; sour grape juice is beneficial against epidemic disease when drunk; costus is beneficial against epidemic disease arising from corruption of the air when used in fumigation; tarragon water when drunk has a wonderful property in preventing the incipience of ailments arising from epidemic disease; cold water when drunk prevents epidemic disease through extinguishing the heat caused thereby, though if only sipped it does nothing, or rather is further inflammatory; myrrh reduces phlegm and prevents corruption of the air—it even slows the corruption of corpses—, and sharpens the senses when drunk. Said Ibn Māsawayh: Whoever

47 *Fl.* late seventh century CE.

sucks on sour pomegranates and plums during an epidemic, and [eats] lentils, peas, squash and the like, will be safe from plague. And [generally] one must increase one's consumption of sour foods and drinks, including the juice of lemons, sour grapes and pomegranates, and pickled things, like capers and onions. Indeed, as a reliable scholar asserted, attributing it to personal experience, whoever eats a pickled onion every day, on an empty stomach, will not be harmed by plague …

It is likewise transmitted from Plato and Aristotle that whoever wears a ruby ring or necklace will be safe from epidemic disease and plague, as well as lightning … And it is said that when Alexander entered Egypt he planted there tamarisk trees to prevent epidemics and clear the corruption of the air ….[48]

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Objective 2: On spiritual regimens to treat this frightful matter

I have already discussed the quality whereby spiritual medicines exert their effect, including invocations of the All-merciful in response to adversities, illnesses, deceptions and accidents. Let me therefore discuss here the conditions and etiquette to be observed, as well as the main divisions and subdivisions thereof. But most of these conditions and matters of etiquette are simply those that apply to [any use of] the verses of the holy Quran, which, given that they are meant for *healing and mercy to believers* (Q 17:82), do not involve onerous requirements, to make their observance easy for God's servants. Thus all that is required in terms of etiquette is ritual purity, facing the qiblah, a kneeling position and refraining from idle talk during the process; in opening the standard ritual phrase "I take refuge in God from Satan the accursed" should be used, and in closing as follows, according to a tradition from the Prophet (peace be upon him):

> God the majestic has spoken the truth and His noble Messenger has communicated it, and we testify thereto. O God, profit us and bless us therewith! Praise be to God, Lord of all the worlds, and God the Living, the Everlasting, grant forgiveness!

Know that just as physical medicine necessarily first involves protection against harm and the concoction of unhealthy humors by means of various cooked preparations, and only then applying the actual medicine [appropriate to the illness], so does spiritual medicine involve all three steps: protection, palliation and cure.

48 Cairo lithograph, pp. 56-62; MS Aşir Efendi 275, ff. 39a-43b; MS King Saud 6737, ff. 49b-55a.

As for the first step: The most important and effective requirement in this and indeed all cases is the purification of one's intention and belief, rejecting all doubts that might possess one's heart, and seeking divine intercession through sincere repentance—for this is among those actions that purify the heart and spirit—and occupying oneself with cleansing one's mind of all satanic insinuations and perturbations of soul. For as the Prophet (peace and blessings be upon him) said: *Actions are judged by intentions*, and *God accepts no prayer from a heart unmindful*. Likewise, one must have certainty that one's prayer will be answered for that arrow to hit its mark, as he (blessings and peace be upon him) said: *Invoke God, certain you will be answered*. One must moreover invoke with all seriousness and intensity, with great purpose and desire in one's heart, wearying not, but rather repeating one's invocation with urgency and utter sincerity as to one's hope …

As for the second step, it involves various means of preparing one's soul to receive the divine effluxion. These include washing one's body (so it may be an object of heavenly aid) and cleaning one's mouth with a *miswāk* (preferably that from the toothbrush tree); cleaning one's dwelling, furnishings and clothes of all dirt and filth and perfuming them with incenses and perfumes, which are extremely effective and entirely indispensable; purifying one's money by discharging all legal obligations and giving charity, also extremely effective; avoiding all things forbidden in food, drink and clothing; addressing injustices and enforcing the rights of people and orphans; freeing slaves and feeding the poor and destitute; emulation of the poor and avoidance of luxury in all things, such as the eating of meat and fat, and wearing coarse clothing after the customary manner—in short, choosing hunger over satiety and satisfaction, to the benefits of which testify both reason and tradition; perseverance in fasting, vigils and litanies, and performing rites in the middle of the night and throughout the day, being conscious at all times, and wakefulness at the hour between night and dawn most especially; and the shedding of blood, among the sweetest forms of wealth one can have. All such means draw down help from the effluxion of the Noble, the Most High, as is spoken of in the Book and the Hadith and testified to by many traditions, and as evinced by our great forebears and transmitted by leading scholars generation after generation.

As for the third step, it includes ritual ablution, facing the qiblah, reciting litanies and praise and ritual prayer before beginning any request for fulfillment of needs and all invocations … It is necessary that one petition God by means of His Most Beautiful Names and invocations transmitted from our noble forebears. It is

also necessary that one begin with oneself, though if one is a prayer leader (*imām*) one should not invoke privately—for the best and most beautiful invocations are communal. And it is necessary that when petitioning God Most High one seek the intercession of the prophets, the saints and the righteous, wiping one's face with one's hands to conclude the prayer.

If you are cognizant of these conditions and rules, know, then, that the spiritual physicians from among the prophets and those saints who emulate them have designated specific times and numbers of repetitions for each of the traditional invocations and litanies. This is analogous to what externalist physicians prescribe as to specific times for drinking a medicine and specific dosages, such that if these are reduced, increased [or otherwise altered] the expected benefit will not obtain; it may even become harmful. But how such times and numbers of invocations and prayers are to be determined is by means of sciences only grasped by the greatest of those who know realities and secrets and the righteous among *those possessed of minds and vision*.[49] For the letters and [divine] names constitute a secret hidden from the intellect and understanding of most people; only those versed in *all* the sciences may attain thereto.

As that may be, know that if a number [of repetitions] has not been specified for a given invocation, the rule is that it be recited according to the number of its words; if you prefer to recite more, according to the number of its letters; if you prefer yet more, according to the number of the *zubur* of its letters, as determined by gematria (*ḥisāb al-jummal*); if you prefer yet more, according to the *bayyināt* of its letters.[50]

As for selecting an appropriate time: If no time has been specified, it is best to astronomically observe auspicious times, as [the above authorities] all specified emphatically. But if you do not have enough time for such observation, simply begin your invocation with all sincerity and seriousness of purpose—for the auspiciousness associated with various times in fact derives from the auspiciousness

49 This phrase is a conflation of Q 38:45 and Q 2:179 etc. Taşköprīzāde here seems to deploy the technical lettrist usage of these quranic terms, on which see Melvin-Koushki, "Of Islamic Grammatology," 63-64 et passim.

50 When performing *taksīr* (cognate to Hebrew *temurah*), which involves the separation of the letters of a name or word and the writing out of the letternames in full, then the elimination of repeated letters (e.g., Aḥmad > *AḤMD* > *ALFḤAMYMDAL* > *ALFḤMYDL*), the term *zubur* refers to the first letters in the full letternames (e.g., the *A* in *ALF*) and *bayyināt* to the remaining letters (e.g., *LF* in *ALF*). Both terms derive from Q 3:184, 16:44, 35:25.

of one's [internal] states. Thus the moment of dawn is auspicious [for all purposes] because then is the heart clean and clear of all disturbance. Similarly the Day of ʿArafa and the day of congregational prayer, [i.e., Friday], for example, whose auspiciousness consists in the fact that they are times when the focus of a group of people is unified and their hearts allied in seeking the mercy of God Most High, apart from other secrets beyond human ken.

Now such auspicious times are of three types: those that occur annually; those that occur weekly, more or less; and those that may occur every day. The first type includes the Night of Power (*laylat al-qadr*), the Day of ʿArafa, the month of Ramaḍān, the nights of both festivals,[51] the first night of Rajab, the night of mid-Shaʿbān, during war combat, during mobilization for just war, on drinking water from the well of Zamzam and at the moment of someone's death. The second type includes Friday night, Friday itself, the hour of congregation (from the moment the imam sits to that when the prayer has finished, properly defined, or in more practical terms during recitation of the Quran, from the Fātiḥa until *he believes*,[52] and just after, especially the moment it concludes), during *dhikr* sessions, during any moment Muslims are gathered together and whenever it begins raining. And the third type includes the middle of the night, or its second half, or its first or last third; the moment of dawn; and during the call to prayer, as the prayer begins, or between the call to prayer and the moment it begins …

It is vital to know those whose prayers are always answered. They include, most generally, any person in extremity or suffering oppression—even if he be debauched, or an infidel, or a father praying against his own son;[53] [they also include] any upstanding imam or righteous man, a son dutiful toward his parents, a traveler, one fasting when breaking his fast, any Muslim praying for his brother in secret, or indeed any Muslim as long as he does not pray for something sinful or to sever a family relation, or say "I prayed but was not answered,"[54] and any penitent …

These conditions and modes of etiquette having been presented, let us discuss those quranic verses that are of benefit against this frightful illness, whereby the blessing of the holy Quran may be sought—for as said the Prophet

51 I.e., ʿĪd al-Aḍḥā and ʿĪd al-Fiṭr.

52 I.e., from Q 1:1 to 2:221.

53 See e.g. *Musnad Aḥmad b. Ḥanbal*, Musnad Abī Hurayra (5), hadith 8917.

54 See e.g. *Ṣaḥīḥ Muslim*, Kitāb al-Dhikr wa-l-duʿāʾ wa-l-tawba wa-l-istighfār (49), Bāb Bayān annahu yustajāb li-l-dāʿī mā lam yaʿjal fa-yaqūl "DaʿawtU fa-lam yustajab lī" (25), hadith 7112.

(blessings and peace be upon him): *The Quran itself is healing*—, as well as the Most Beautiful Names and invocations that are likewise effective and to be recited and memorized.

As for the verses whereby one's health may be maintained and illnesses—especially this fearsome disease—counteracted, they are six, dubbed the verses of healing. Said Abū al-Qāsim al-Qushayrī:[55] "[Once, when] my son had fallen extremely ill, I saw the Messenger of God (God bless and keep him) in a dream, and he asked me, 'What's the matter?' I said, 'It's my son.' He said, 'Then why aren't you using the verses of healing?' I said, "I don't know which they are.' Thereupon I awoke, and immediately set about reciting the entirety of the Quran, noting every verse in which the word 'healing' (*shifāʾ*) occurs—which it does in six suras of the holy Quran." Al-Qushayrī continues: "I therefore wrote them, then washed them off with water and gave it to my son to drink—and it was as if he was suddenly released from bonds."

These six verses are as follows:

> *O men, now there has come to you an admonition from your Lord, and a healing for what is in your breasts, and a guidance and a mercy to the believers* (Q 10:57);
>
> *And We send down of the Quran that which is a healing and a mercy to the believers; but the unbelievers it increases not except in loss* (Q 17:82);
>
> *And Himself gives me to eat and drink, and heals me whenever I am sick, Who makes me die, then gives me life, Who I am eager shall forgive me my offense on the Day of Doom* (Q 26:79-82);
>
> *Then comes there forth out of their bellies a drink of diverse hues wherein is healing for men* (Q 16:69);
>
> *Fight them, and God will punish them at your hands and degrade them, and He will help you against them, and bring healing to the breasts of a people who believe* (Q 9:14-15);
>
> *Say: "To the believers it is a guidance and a healing"* (Q 41:44).

These holy verses must be written on a piece of paper, then dissolved in water, and the water given to the sick to drink; one must also recite over the mixture and blow upon it. And the patient who drinks of it will be cured of his illness.

Another example is that related of the master of the lords of the Path and model of the folk of Truth, Shaykh ʿAlī b. Lālā al-Isfarāyinī (God sanctify his

55 Al-Qushayrī (d. 1074), famed author of a programmatic treatise on sufism, *al-Risāla al-Qushayriyya*.

secret and shower us with his righteousness), who was resident in Egypt, and upon returning from the pilgrimage found a major outbreak of plague had struck Egypt, of epidemic proportions. Circumstances were so dire that he was unable to leave the area, and he feared for his life, sorely regretting that he had fallen into this great calamity. He therefore sought guidance of God Most High, whereupon he beheld the Messenger of God (God bless and keep him) in a dream, who soothed him and quieted his fears, then said: "Persist in repeating the following litany (*wird*), reciting it after each one of the five ritual prayers for a total of 11 times daily: alternate between Sūrat al-Ikhlāṣ, the Two for Taking Refuge (*muʿawwidhatayn*)[56] and Sūrat al-Kāfirūn, according to their quranic order, and after each recitation breath upon your palms and wipe your body with them, trusting in God—and you shall remain healthy, safe in the protection of God Most High." Said the shaykh (God sanctify his secret): "I persisted in it and imparted it to all my sufi (*fuqarāʾ*) companions—and we indeed remained healthy, preserved by God Most High!" ....[57]

• • •

As for those divine names especially associated with defending against this particular disease: All masters of amuletry and experts in the active properties of the divine names from among the practioners of [lettrism—from] letter divination to magic squares to permutation (*ahl al-jafr wa-l-awfāq wa-aṣḥāb al-taksīrāt*)—universally agree that the most beneficial litany against plague and epidemic diseases is the divine name Securer (*al-Muʾmin*), invoked according to the number of its *zubur*, to wit, 136 times daily; repeating it according to [the number added by] its *bayyināt*, to wit, 299 times,[58] is even more effective. And for maximum effect, this divine name should be made into a 4 x 4 magic square according to the rules of permutation and inscribed on silver during the exaltation of Venus, and [the resulting talisman] carried on your person: *MWMN*. And anyone who four times invokes the Securer upon seeing someone he fears shall be protected by God Most High from his evil.

Shaykh Aḥmad al-Būnī identified two further divine names: the Watcher (*al-Raqīb*), the Omnipotent (*al-Muqtadir*). [Their letters] are to be inscribed on the

56 I.e., Sūrat al-Falaq and Sūrat al-Nās, the last two of the Quran, very frequently used for magical defense.

57 Cairo lithograph, pp. 65-71; MS Aşir Efendi 275, ff. 45a-49b; MS King Saud 6737, ff. 57a-61b.

58 I.e., the sum of the *zubur* and *bayyināt* of *MWMN* is 299. A marginal comment here in MS Aşir Efendi 275, f. 52a, notes the technical error.

ringstone of a ring in this wise: *ALALRMQQYTBDR*. Whoever wears such a ring will never be touched by plague as long as he lives. The shaykh further stated, in his book *Waymark of Guidance in Explication of the Most Beautiful Names of God* (*ʿAlam al-hudā fī sharḥ asmāʾ Allāh al-ḥusnā*): "Whoever inscribes His name the Persisting (*al-Bāqī*) and the Creator (*al-Khallāq*) on the door of his house, none will perish of the plague therein."[59] As for the divine name the Healer (*al-Shāfī*): Whoever inscribes it on a squash leaf, immerses it in violet oil and hangs it in the sun for 40 days, reciting this name 391 times daily over the oil—whoever oils themselves therewith shall be safe from the plague for the duration of that year …

[As for the name] the Omnipotent: Whoever inscribes it on a ring when the Moon is in exaltation will be safe from the plague. It is said that one must so inscribe on a gold ring, with total focus of will and mind, during the exaltation of the Moon, and so become safe from all things ominous and associated with all things auspicious by way of Jupiter or Venus; whoever does so will be safe from the plague. This is the form of its construction:

[Constant: 744]

M	*Q*	*T*	*D*	*R*
D	*R*	*M*	*Q*	*T*
Q	*T*	*D*	*R*	*M*
R	*M*	*Q*	*T*	*D*
T	*D*	*R*	*M*	*Q*

… It has been transmitted that Shaykh ʿAbd al-Raḥmān al-Bisṭāmī, transmitting from one of his teachers, stated that if the name the Persisting (*al-Bāqī*) is inscribed in a 4 x 4 magic square, according to the following form—

59 On this work see Gardiner, "Esotericism in a Manuscript Culture," 22-23 et passim; Coulon, "La magie islamique," 467-75 et passim.

[Constant: 113]

B	*A*	*Q*	*Y*
Q	*Y*	*B*	*A*
Y	*Q*	*A*	*B*
A	*B*	*Y*	*Q*

— inside a house or on a wall or [around] a city, its inhabitants will be safe from the plague. It has been further said that this square was inscribed in in the caliphal palace in the Abode of Peace Baghdad—which therefore persisted in such a wise that no dead person was carried thence for 80 years. But God knows best …

Know that the active properties of the divine names [as a field of study] are a deep sea that can never be plumbed. Let us therefore content ourselves with the foregoing sketch; those who would read more should consult the books of Shaykh Aḥmad al-Būnī and Shaykh ʿAbd al-Raḥmān al-Bisṭāmī, especially the latter's *Sun of the Horizons: On the Science of Letters and Magic Squares* (*Shams al-āfāq fī ʿilm al-ḥurūf wa-l-awfāq*) ….[60]

***

Know that the science of magic squares (*ʿilm al-wafq*) is the first science God Himself brought into being, and He taught it to Adam (peace be upon him), whence all prophets successively inherited it, and likewise the great saints and sages.[61] So it continued until prophethood came to Abraham (peace be upon him), who developed and propagated the science, bringing to light its hidden virtues and exposing its secret. The prophet Moses (peace be upon him) then discoursed on certain of its active properties, and [was the first to] construct a 6 x 6 square, by means of which he raised up the coffin of the prophet Joseph from the bottom of the Nile.

60 Cairo lithograph, pp. 74-76; MS Aşir Efendi 275, ff. 51b-53a; MS King Saud 6737, ff. 65a-67b. On this work see Gardiner, "Esotericism in a Manuscript Culture," passim; Coulon, "Building al-Būnī's Legend."

61 Lit., 'the science of harmonization,' aka the science of harmonious numbers. As defined in the *OED*, a magic square is "a square array of numbers with the property that the sum of the numbers in each vertical, horizontal, or diagonal row is the same." Taşköprīzāde's unusual assertion here of the primordial nature of magic squares as a discipline reflects its eager scholarly embrace throughout the Islamicate world from the ninth century onward, likely from both Chinese and Indian models, but quickly outstripping them in complexity and sophistication. As in China and India, however, Muslim authors deployed magic squares for medicinal and magical purposes from the beginning. On the early development of this science in Arabic, and eventual fusion with lettrism in the twelfth century and after, see Hallum, "New Light."

Then when prophethood came to Solomon (peace be upon him), he taught the science to his companions, and they labored to further derive its active properties. [Chief] among them was Pythagoras, who through sheer innate perspicuity derived the active properties of the numbers, thereby laying down the science of arithmetic.[62] Thus did the scholars of Greece, generation after generation over the centuries, come to derive the harmonious figurate numbers according to the rules of arithmetic, expounding the properties of each square, until prophethood came to the sage Thales of Miletus. He [was the first to] construct a 100 x 100 square on a square plate, this in the temple of Mercury; he claimed to have extrapolated it by way of divine inspiration. All the Greeks sought blessing for themselves therewith and held it in great reverence, such that whenever some matter concerned them or they were overtaken by calamity they had recourse to this square. It therefore remained in constant use among them for many years, until the advent of the sage Archimedes, who studied it closely and further derived its properties and benefits—including the fact that plague and epidemic could not enter any house containing it. (I have mentioned a few of this square's properties above.)

Among those who discoursed on the science of magic squares in the Islamic era and from the Muḥammadan community was the Commander of the Faithful, the Chief of the Monotheists and the triumphant Lion of God, ʿAlī son of Abū Ṭālib (God honor his countenance). It has been related that he sent an army against the infidels,[63] who had as their battle standard a 100 x 100 magic square; the Muslims were accordingly routed. When ʿAlī (God be pleased with him) realized the cause, he constructed the same square for their standard, adding one to it—thus were they able to vanquish the polytheists. As one scholar noted, "The secret of the effect of this magic square is that 100 encompasses the number of the Most Beautiful Names, with the addition of one, which is the Supreme Name, to which God (be He praised!) has made exclusive His knowledge of His own holy essence. Moreover, the base of 100 is 10, which [as the tetractys] is the number of the source of all existents, so it is said."[64]

62 The identity of Pythagoras as Solomon's disciple is common in early modern Persianate lettrist texts; see Melvin-Koushki, "Powers of One."

63 Despite a small chronological discrepancy, the Persian Sasanid army is presumably meant here, given Taşköprīzāde's sources, which regularly cite this Persian 100 x 100 *wafq*.

64 Taşköprīzāde's source here is most likely Mollā Lüṭfī Tokatlı's (d. 1494) *Risālat Taḍʿīf al-madhbah*, a short work on the Delic problem that also functions as a plague treatise. This section partially summarizes the ninth *maṭlab* of the second *bāb* of that treatise (ed. Yaltkaya, 18-21), adding Adam as inventor of the science and conflating ʿAlī with ʿUmar. The third and final *bāb* of Mollā Lüṭfī's treatise likewise features a brief list of the same divine names discussed by Taşköprīzāde above, but it includes no *awfāq* nor specific instructions as to use (ed. Yaltkaya, 21-22). My thanks to Bink Hallum for this

Also in the community of Islam, those who have discoursed on this science include Shaykh Abū al-ʿAbbās Aḥmad al-Būnī and Imam Muḥammad al-Ghazālī (God sanctify their secrets), as well as many other godly scholars and spiritual sages.[65] One of the most celebrated squares they have developed is a 3 x 3 square for women suffering labor pains and difficulty in childbirth: it is to be written on two pieces of new pottery, which are then placed under her feet (or alternatively on her thighs); a third [piece so inscribed] is set up in her line of sight. Some scholars rather inscribe it on the inside of a cup, dissolve it in water, then give the woman in question to drink thereof. [In either case], the child will remain in her womb no longer than three hours. This is its form:[66]

[Constant: 15]

4	9	2
3	*H*	7
8	1	6

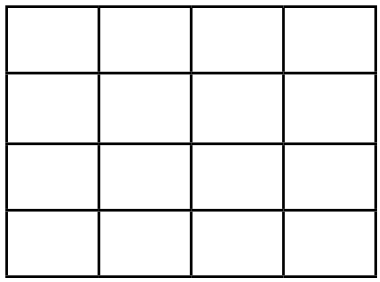
Likewise the 4 x 4 square for repelling epidemics: It has been stated that if such a square is affixed to the wall of a house or a city and a door opened therein, it should constitute a quarter of the square, such that the lintel is a quarter and its two sides are each a quarter [and the rest the remaining quarter]; whoever enters thereby and resides therein will not be stricken by epidemic, God Most High willing. [Alternatively], whoever constructs one on the walls of a city or the wall of a house should inscribe it in 116 places thereon during the hour of the Sun, when it is in exaltation, and God will protect that city or house from epidemic and plague. This is the form of its construction:[67]

reference; on the 100 x 100 square in particular, see his "New Light," 110.

65 On the transformation of theologian Ghazālī (d. 1111) into lettrist authority in the early modern Persianate world—putative author of texts like the *The Protected Secret and Hidden Gem* (*al-Sirr al-maṣūn wa-l-jawhar al-maknūn*), on the Comprehensive Prognosticon (*jafr-i jāmiʿ*) of ʿAlī—see Savage-Smith, "Magic and Islam," 66, cat. 21, no. 4.

66 The same magic square is provided in Hacı Paşa's *Müntahab-ı şifā*, 176. It came to be closely associated with Ghazālī in particular, given his citation of the same as a clinching argument against "the philosophers"; see Hallum, "New Light."

67 Cairo lithograph, pp. 99-101; MS Aşir Efendi 275, ff. 70a-71a; MS King Saud 6737, ff. 86b-87b.



Conclusion

While research into the genre of plague treatises is still in its infancy,[68] Taşköprīzāde's *Treatise on Healing Epidemic Diseases* would appear to be its most comprehensive and innovative Islamicate contribution—as well as its most *occult-scientific*. That said, at least six other important Ottoman plague treatises of the fifteenth and sixteenth centuries reflect a similarly *lettrist* and *empiricist* project.[69] The same principle almost certainly applies to other Persianate offerings in this vein, particularly Safavid and Mughal, given Iran's status as bastion of occultism and primary exporter of occultists during this period.[70] This suggests the genre to be an invaluable window onto the new "cosmological imaginary" and empiricist ethos that came to define Western early modernity as a whole, both in the Persianate

This concluding magic square is either blank or uncopied in the three extant sources available to me (the Cairo printing notes in the margin that it is missing in its source)—a common feature in many manuscripts, especially for talismans of special political sensitivity, as this one is.

68 Michael Dols and Lawrence Conrad initiated its modern study in the Islamicate context, although the latter's focus was firmly late antique and early medieval and the former's publications marred by excessive positivism and poor philology. These problems aside, Islamicists have begun to take this genre more seriously in recent decades on the basis of their pioneering work. But only a handful of plague treatises have been studied or even cited to date, and exclusively Arabic ones, while the number of Latin and West European vernacular plague treatises studied (if preliminarily or selectively in many cases) is now in the hundreds—a massive imbalance that defines Western intellectual and cultural historiography more generally.

69 As noted above, the Maghribi Ibn Haydūr's short tract is an important precedent as well, and perhaps a source for Hacı Paşa.

70 Again, such treatises have yet to be identified, much less published or studied. This article, a partial study of Taşköprīzāde's contribution to the genre, is simply meant to encourage research in this direction. It should be remembered that the Ottoman plague experience was long assumed to be minor or irrelevant too, until Varlık's 2015 book singlehandedly showed it to be even more sociopolitically significant, encompassing and enduring than that of West Europe. The same consideration must now be extended to the rest of the Persianate world, and particularly the equally cosmopolitan but much wealthier and more populous Mughal Empire; but research into this question has not yet begun.

world and the Latinate.[71] For a similar shift may be discerned in Latinate plague treatises: in the sixteenth century, many Christian authors too began to privilege occult science—in this case alchemy rather than kabbalah—as a means of asserting their own empiricism over more traditional theological explanations of and less occult-scientific Galenic-Avicennan approaches to this existential threat.[72]

From the fourteenth century onward, in short, the unending experience of recurrent plague throughout the western half of the Afro-Eurasian ecumene became a major engine of Western scientific early modernity—occult or otherwise—in the Ottoman Empire specifically and both Islamdom and Christendom generally. That is to say, the renaissances of occultism that now swept the Greater West appear to have been in large part plague-induced. As for Taşköprīzāde, Ottoman imperial judge, theologian, biographer, encyclopedist: his rationalist and traditionalist enforcement of *tasabbub* and critique of *tawakkul* is tantamount to our historiographical category of "empiricism." (Related terms in Arabic include *taḥqīq*, *tajriba*, *dhawq*, *mushāhada*, *ʿiyān* and *raṣad*, all likewise connoting personal inquiry, critical analysis and direct experience.) By the same token, his empiricist assertion of the efficacy of lettrism in preventing and curing plague is of particular salience to any history of Western science and medicine. Taşköprīzāde's brand of occult-scientific, mathematizing empiricism and modernizing encyclopedism is thus immediately comparable to that of his Christian occultist contemporaries and heroes of the "Scientific Revolution" such as Bacon and Kepler.[73] *And yet*

71 I use the term "cosmological imaginary" as proposed in Gardiner, "Books on Occult Sciences."

72 Jones, *Time, Space, and the Plague*, ch. 1. Indeed, as with our Ottoman case, a rise of occultist empiricism in response to the plague, due to the sudden inadequacy of medieval scholastic approaches, may be observed in Latinate medical practice too already in the late fourteenth and early fifteenth centuries (Weill-Parot, "La rationalité médicale"; my thanks to Monica Green for this reference). On West European plague treatises as sites of empiricism more generally see Jones, "Experience over Education"; on fifteenth-century alchemical-empiricist precedent see Thorndike, *History of Magic*, 4:215-31. Cf. the Ottoman alchemical tradition—frequently lettrist in tenor—as studied in Artun, "Hearts of Gold and Silver." It is highly suggestive in this context that a form of Christian anti-plague divine-names letter magic appears to have been developed in Ethiopia in the early fifteenth century, concurrently with the North African boom in Būnian-Bisṭāmian lettrism to the same end (Derat, "Du lexique aux talismans"). On early modern Latin European scholarly endorsements and critiques of natural, preternatural and supernatural anti-plague amulets, kabbalistic or otherwise, see Černý, "Magical and Natural Amulets."

73 The literature arguing for early modern Christianate empiricism as the primary engine of "scientific modernity" is vast and well-known to historians of science, so cannot and need not be summarized here. Likewise, following Frances Yates (d. 1981), Europeanists have rehabilitated the occult sciences as important vectors for early modern empiricism and *mathesis*, while generally retiring her teleological approach. For studies on the contemporary history of Islamicate occult-scientific, mathematizing empiricism see e.g. Fazlıoğlu, "Between Reality and Mentality"; Melvin-Koushki, "Powers of One";

it did not lead to us—a virtue that allows the early modernist historian to more easily sidestep the honeyed trap of teleology.[74] But the fact remains: Muslims, like Christians, sought to construct their own modernity by marrying Religion and Science by means of Magic.

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idem, "Is (Islamic) Occult Science Science?"; and see also Gutas, "Avicenna and After."

74 On the convergence and divergence of early modern intra-Western notions of empiricism, and for a broader, Afro-Eurasian definition of "early modernity" itself, see Melvin-Koushki, "*Taḥqīq* vs. *Taqlīd*."

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