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The Divine Viscera: Medicine and Religion in the Islamic Golden Age

Medicine, as we know it, was born of centuries of development. In the traditional story of Western history, Ancient Greeks began that development with figures such as Hippocrates and Galen, and, inspired by Classical knowledge, the European Renaissance carried on the process of furthering scientific knowledge. However, during the Middle to High Middle Ages, Greek thought had largely diminished, and medicine in the Western civilizations spiraled down into superstition. During this era, the Islamic Empire carried the torch of medical knowledge. The Empire, in its Golden Age (700-1300 CE), preserved the Classical texts and pioneered its own advances while spreading this knowledge throughout its territories – eventually spreading back to the Western world. The Islamic religion itself played a vital part in fostering the social climate that allowed such development: it was the Empire's political, social, and spiritual core. It created a diverse, interconnected intellectual atmosphere ripe for medical development, and its ideologies built an Islamic civilization focused on scientific learning, experimentation, and the preservation of existing knowledge that gave the Empire its crucial role in furthering medicine.

Prior to the onset of Islam, the Middle East was politically and socially fragmented. Although there were several prosperous trade hubs, such as Mecca and Yathrib, pastoral nomadism was the dominant social structure, and tribes lacked political unity. Originally pagan, these peoples unified under Islam's increased focus on personal spirituality. It offered the Arabs more of a purpose and sense of certainty in life through its concepts of fate and of heaven. Furthermore, the prophet Muhammad's message of a monotheistic God, as well as many of his central tenets, mirrored those of Christianity and Judaism, both familiar to Arabs at the time; however, it was relatively simple in comparison to the religious hierarchies that existed in those

other monotheistic religions. Familiarity, simplicity, and purpose, combined with a religious emphasis on conversion and conquest, led to the rapid geographical spread of Islam during and after the life of Muhammad.

Islam's spread proved crucial to medicine and to scientific thought as a whole. As Howard Turner explains, in the unified and expanding empire, "caliphs encouraged non-confrontational contracts, especially commercial ones, with other societies" (17). As the Islamic world encountered other civilizations, these contracts had the effect of promoting a multiethnic culture, helping to "open Islam to outside influence ... [and] promote advances in education and reinforce a sense of intellectual adventure" (Turner 17). From the perspective of the medical community, the most important influence that the Muslims encountered was that of the Greeks. During the Translation Movement from 750 to 900 CE, the Umayyad caliphate promoted the translation of classical texts into Arabic, making "accessible ... the works of Aristotle, Plato, Hippocrates, Ptolemy, and Galen, among others" (Ferngren, "Islam in the Middle Ages" 124). Islamic scientists assimilated and later built on the classical theories.

The fact that the Islamic world accepted these texts is remarkable in itself. As Turner explains, "as a crusading faith, Islam could have been expected to try to eradicate or denigrate most achievements of what were ideologically perceived as profane ... societies of the past" (28). Hayrettin Yücesoy in "Translating as Self-Consciousness" explains that this apparent anomaly might have stemmed from the tradition of prophetic history:

Qur'anic references to ancient divine scriptures found attentive ears in the context of existing religious and intellectual traditions in the Near East among inquiring Arab

Muslims and bilingual Jewish, Christian, and Zoroastrian converts who quickly established links between Qur'anic statements and pre-Islamic lettered traditions. (546)

In Islamic thought, the prophets, whose numbers included Jesus and Muhammad, cyclically conveyed and renewed the message of God. All of their teachings are based on “the original primordial ideal,” the unadulterated divine message (Coogan 95). Under this worldview, all knowledge, including scientific and pre-Islamic works, “originated from a single and ultimately divine source” so that “the meaning was transcendental to language and immune ... from historical effects” (Yücesoy 524), aiding in the assimilation of translated texts in the Islamic intellectual tradition. Thus, Yücesoy suggests that intellectuals of the Golden Age combined the idea of the divinity of ancient knowledge with the Classical literature available in that context, generating an impetus to study Classical knowledge. This is not to say that religion was the only driving force of the Translation Movement. The Islamic Empire’s rapid conquest of the Middle East absorbed pockets of residual Hellenistic culture, making a revival of Classical knowledge less of a leap than it would be in Western Europe. From a practical standpoint, “administrators found it expedient to adopt the local conventions of administration, record keeping, tax surveys ... to administer their territories” (Yücesoy 526), and scientific works could have been translated for similar uses. For the caliphates, being disseminators of knowledge lent a certain prestige; one copy of an illustrated medical codex (the Vienna version of the *Kitab al-Diryaq*, discussed later) “communicated the idea of royal affiliation with learning” in its depictions “for the purposes of courtly prestige” (Pancaroglu 169). However, these cannot explain the prolonged support of medical learning over multiple caliphates. The sanctity of ancient knowledge provided at least partially a motive for the caliphs at the time – al-Ma'mun, for example, Abbasid caliph in the

early 800s, claimed the title “God’s caliph” (Yücesoy 556). Moreover, and perhaps more importantly, the Islamic influence in the Translation Movement allowed the Classical knowledge to permeate a culture so radically different from that of the Greeks.

This influence is shown in the way that the translators dealt with polytheistic Greek texts: as Ferngren explains, “translators removed polytheistic elements from Greek medicine ... and replaced reference to Greek gods ... with references to God These alterations made the medical texts more acceptable to the monotheistic reader” (124). For example, the figure of Hermes, often attributed with various forms of knowledge, became a prophet-sage in Islamic translations: “he became the mediator, the conduit, the filter through which ancient sciences were received” (Yücesoy 545). And although such changes did inevitably alter the “discursive integrity and ... axis of arguments” within these texts, “especially in matters related to fundamental ideological assumptions” (Yücesoy 533), they were fundamentally necessary in consideration of their host civilization. The prophetic tradition and its concept of divinely set facts meant that intellectuals of the Translation Movement could integrate foreign knowledge with their own, “allow[ing] the translator to create a meaningful text compatible with and enhancing the target culture” (Yücesoy 535) despite (and because of) these changes. In context of the broader development of medicine in the Near East, the resulting libraries and translation centers provided “virtually all of Islam’s early medical students with their basic reference texts” (Turner 132).

Although Islamic science used the Greek literature as the original basis for their medical knowledge, this is not to say that the Islamic Golden Age was a parroting of the Classical one. In Ancient Greece, Qadir claims, “perceptual knowledge was of a lower category than the

intellectual, and consequently less reliable,” citing the fact that Aristotle, among other intellectuals, “never checked the results of his theories through observation” (110). Though Greek physicians did conduct experiments – Galen is known for having dissected animals – Aristotle and several other Greek scientists did not derive theory from experimentation. In contrast, Qadir asserts that “the Muslims never accepted as a result unless it was borne out by observation and experimentation” (110). For example, in prominent Islamic physician al-Razi’s famous experiment, he placed pieces of meat around Baghdad, choosing the site on which to build a hospital based on which of the pieces had putrefied least (Ferngren, “Islam in the Middle Ages” 125). Many of the well-known Islamic physicians “had laboratories of their own or worked in state laboratories” (Qadir 110). This importance placed upon sensory knowledge may have had roots in Qur’anic verse. One passage of the Qur’an reads, “verily, in the creation of the heavens and of the earth, and in the succession of night and day ... [in all this] there are messages indeed for people who use their reason” (2.161). In his interpretation of the passage, Muhammad Asad describes it as “one of the many in which the Qur’an appeals to ‘those who use their reason’ to observe the daily wonders of nature,” and in extension the “indications of a conscious, creative power pervading the universe” (60). In studying the physical universe, one observed the power and spiritual message of God. This reflects the notion of a sense of divinity in the material world, which drove the push to study science from an empirical, sensory perspective.

In certain cases, religious doctrine affected medical theory itself. The notion of the interconnectedness of God’s universe allowed Muslim scientists to theorize on the existence of contagious disease. As Ibn Sina explains in *The Canon of Medicine*, Muslim physicians believed that individuals were made up of a unique combination of ‘elements’, the “primary components

of the human being throughout all its parts, as well as of other bodies in their varied and diverse forms” (34). They were the theoretical ‘essences’ that formed the universe. The balance of these determined a person’s temperament, which was the composite of his or her physical and mental states of being. Stemming from the same ‘substance’ common to all matter, that temperament was very much affected by any external factors a person faced - “food, drink, air, water, localities of residence...” (Ibn Sina 31). For this reason, physicians considered holistic approaches to the treatment of disease. Al-Razi suggests bloodletting, “fumigations ... with dried myrtle leaves” (57) to dry pustules, and various baths, regulations in temperature, herbal remedies, all dependent on the stage of measles and the temperament of the patient. F. Rofail Farag suggests that this holistic view may have religious roots:

They did not regard man, the microcosm, as a separate identity, ... but as linked to both God and nature. Everything that takes place in our cosmos is God’s work. ... Man is part of the universe, and therefore man’s illness must be related somehow to the world around him. (302)

The body itself was linked to God’s universe, in the same mode of thought that saw divinity in the ‘messages’ of the material world. As a result, physicians were able to accept the concept that diseases could have external origins. Al-Razi notes, in his *Treatise on Smallpox and Measles*, the greater propensity for measles “when the summer is excessively hot and dry” and during “occult dispositions of the air, which necessarily predispose bodies to [disease]” (33). Such “pestilential, putrid, and malignant constitutions of the air” were, in fact, often blamed for outbreaks of disease. In contrast, Western European diseases of the same era were usually attributed to curses, witches, and the like. Farag does mention that the idea of a contagion was controversial, as he

put it, “in the days of rigid orthodoxy” in the mid-1300s, “for the theologians then regarded the plague as divine punishment” (303). However, the religious significance here lies not in the views of the religious sphere of the Empire but in the broad cultural values inspired by Islamic beliefs, particularly during the time of the religious rationalism that characterized Golden Age thought. Because Islam at the time granted this worldview of interconnectivity, scientists were able to identify and approach infectious disease as a possible explanation.

Moreover, a sense of scientific-religious duality profoundly influenced the motive behind scientific pursuit. Because Islamic scientists saw the universe as an interconnected system created by God, and the human being “[as] ... God’s representative and vicegerent of earth” (Ferngren, “Islam in the Middle Ages” 121), it became “each person’s rightful task ... to put together the pieces of a universal puzzle” (Turner 163) in order to realize God in the physical world. This tied science as a pursuit to the religious ideals of man’s purpose. The implications of this were, as Ziauddin Sardar explains, that “classical Muslim scientists strongly rejected the notion of science for science’s sake,” preferring instead that “the means and the ends for doing science ... be based on Islamic ideals” (23). Since religion provided an inspiration for scientific pursuit, being so integral to all other aspects of Islamic life, as a general trend, Islamic scientists pursued knowledge of importance “to the values and cultural imperatives of the worldview of Islam” (Sardar 22). For this reason, scientists in the Islamic Empire only studied fields deemed useful. Astronomy, for example, flourished because it fulfilled “the fundamental requirements for worship” in determining, for instance, the direction of Mecca for prayer (Turner 62).

Qur’anic tradition expanded upon that religious purpose. According to al-Bukhari, in his collected *hadith* (sayings of Muhammad), “there is no disease that Allah has created, except that

He also has created its treatment.” This attached a divine purpose to medical practice itself. God was seen as a divine healer, and “Muslims [were] supposed to apply the natural means that God created for healing, while ... being aware that the healing effect ... depends on God’s will” (Ferngren, “Islam in the Middle Ages” 122). This scientific-religious duality is evidenced within many of the works of Islamic physicians. Al-Sulami, the “Ayyubid chief of medicine in Cairo” (Leiser 8), mentions in the introduction to his source book – *Questions and Answers for Physicians* - multiple references to the precedence of God as the ultimate authority over medical practice. He praises God for “that which will preserve his (man’s) health, by His (God’s) permissions, and eliminate illness” (25), reinforcing the idea that physicians pursued medicine as an extension of God’s will. In his preface to his *Treatise on Smallpox and Measles*, al-Razi states, “and therefore I composed this discourse, hoping to receive my reward from the Almighty and Glorious God,” (Clendening 72). This reflects the state of medical practice as a religious duty favored by God.

The practicality of the medicine studied at the time reflects this concept. Medicine itself was ultimately meant to be studied for healing rather than for pure theory. Ibn Sina differentiates between medical theory and practice while giving each equal weight. He defines practice “not [as] the work which the physician carries out, but [as] the branch of medical knowledge which, when acquired, enables one to form an opinion upon which to base the proper plan of treatment” (26). By this logic, theory and practice are both equally legitimate forms of medical knowledge, and are both part of the physician’s expertise. This duality of knowledge is reflected in al-Razi’s *Treatise on Smallpox and Measles*: he laments that “if, however, any one [sic] says that Galen has not mentioned any peculiar and satisfactory mode of treatment for this disease (smallpox),

nor any complete cause, he is certainly correct” (28). Though he had previously referenced Galen for theories on the physical process of catching smallpox, the Greek physician had neglected the practical realm of treatment and prevention. Medical science was not only theoretical but practical, echoing the perceived religious purpose of the physician-figure.

Although it can be argued that the Qur’an’s many urgings to seek knowledge are directed towards *religious* rather than secular thought, at this time, medicine was not formally differentiated from religion in the modern sense. There was no break, in Islamic thought, between its religious and secular pursuit: as Ferngren summarizes, “using medication [was] in reality nothing other than turning to God” (“Islam in the Middle Ages” 123). In a society where government and personal life were tied to religion, religious justification for medical science would have provided the necessary motive for its pursuit.

This religious role of medicine in society also made physicians much-revered figures during the Golden Age. Caliphs granted the title of ‘court physician’ to prominent people such as Ibn Sina and al-Razes. The *hakim* – literally ‘wise person’ or ‘sage’ (Ferngren, Islam in the Middle Ages” 129) – was at once a physician and a philosopher, and many of the most famous physicians published philosophical works alongside the medical. The *hakim* was “responsible for the improvement of both body and soul” (Turner 129), returning to that concept of God-granted healing within medical practice.

A medical manuscript called the *Kitab al-Diryaq* exemplifies the spiritual weight the *hakims* carried in Islamic culture. A treatise written in the early 1300s on antidotes for snake venom, it carries numerous illustrations of Islamic and Greek physicians. In Oya Pancaroglu’s “Illustrations of the *Kitab al-Diryaq*,” she analyzes the illustrations in the Paris version of the

manuscript, suggesting a possible cosmic connection with the physician figure. Many of the illustrations depict physicians in teaching roles; these highlight the relationships between students and their teachers within madrasas, wherein the “exercise of knowledge (was) a social asset” that “afforded personal stability and opportunity” (Pancaroglu 163). However, the double frontispieces suggest an almost reverential treatment of the *hakims*. These depict two seated figures holding crescent moons, framed by pairs knotted snakes and surrounded by four “winged celestial beings” (Pancaroglu 163). In the context of the content of the codex, Pancaroglu suggests that these may be symbolic of the role of physicians: “negotiating the forces of this sublunar domain and administering the necessary remedy extracted from the natural world of the three kingdoms” (165). These ‘three kingdoms,’ “animal, vegetal, and mineral” (Pancaroglu 165), derive from the four elements – symbolized by the four ‘winged beings’ which, by extension, can be taken to represent the four humors. The central figures, *hakims* or otherwise, thus allude to the cosmic context of the *hakims* as negotiators of these ‘sublunar’ forces and humors. Because of that physician-philosopher duality, the *hakim* “was uniquely situated to be a candidate for the rank of ‘complete philosopher’” – one with “heavenly inspiration and support for their endeavors” (Pancaroglu 163).

As ‘complete philosophers,’ *hakims* occupied “an intermediary rank between the universal and the temporal world” (Pancaroglu 165), as the figures in the frontispieces suggest. The physician’s job was to balance the temperaments of their patients, thus placing him in direct contact with what Ibn Sina terms a person’s breath: their vital ‘essence’ or soul, a property integral to existence. The perfectly balanced elements and breath, Ibn Sina states, “renders possible the perfection of *rational life* which celestial beings possess” in humans. In that way,

this property in people “approaches towards the likeness of celestial beings” (535). The *hakim* was consequently responsible for the spirituality of the individual, as well as that spirituality as it manifested in their physical bodies. Because, as discussed, healing was both scientific and gifted by God, physicians were granted this unique veneration and were seen as “exemplary human beings in the natural world” (Pancaroglu 165). This rendered them and their works much valued in the eyes of the caliphate, who employed court physicians and funded the numerous libraries and hospitals that the Golden Age was famous for.

This, and several other points, stand in contrast with the nature of contemporaneous Western medicine, and add to the significance of Islamic medicine in the context of that period. The Western peoples who conquered the Western Roman Empire used pagan folk practices largely reliant on mysticism; they included “magical incantations and elements of witchcraft” (Ferngren, “The Middle Ages” 95). Although the Christian church attempted to eradicate this paganism, the practices retained widespread popular use. Furthermore, even within the clergy, who represented the majority (if not the entirety) of the educated population, disease was still attributed to “the existence and activity of demons” and treated with a mixture of medical practice, religion, and magic (Ferngren, “The Middle Ages” 97). Though plausible herbal remedies existed, other ‘cures’ ranged from leeches to flagellation. Overall, European medicine, Turner says, “was oriented more to filling the patient’s spiritual needs than to treating bodily disease” (133), and made little scientific progress during the period.

Because of this, it became crucial for the development of medicine as a whole that the Islamic Empire transmitted its accumulated knowledge to the Western world. In the 1300s, groups of scholars in Muslim Spain – the “principal crossroads joining medieval Islam and

Europe” (Turner 209) – translated the Greek and Islamic texts from Arabic into Latin, making Classical and Muslim knowledge available to the West. Although not as widely referenced in the European Renaissance as the Classical works, Muslim scientific literature still maintained prominence in medical learning. Ibn Zuhr, a 12th century physician famed for his anatomical studies, and al-Zahrawi, a tenth century surgeon, both wrote works that were later translated into Latin and used in European medical education (Turner 138). Medical giants Ibn Sina and al-Razi's works were “used as the basic texts in Europe’s medical schools almost until the beginning of modern times” (Turner 136).

At the same time, despite Islam’s positive influence on Golden Age intellectualism, it should be noted that the decline of the Golden Age and its scientific thought are largely attributed to an increase in literal interpretation of Islamic doctrine – as Turner terms it, the “Islamicization of the sciences” (“Islam in the Middle Ages” 205). However, it was the overall freethinking worldview of that specific timeframe that encouraged medical development, shaping the society that allowed its growth. From the eighth to the tenth century (i.e. right in the midst of the Islamic Golden Age), the predominant mode of Islamic theology was Mu’tazilism. This proposed that, because the Qur’an was created, its contents should be analyzed; it placed rationality above revelation with the belief that humans were capable of comprehending basic morality. However, this witnessed a backlash after the reign of Al-Ma’mun, an Abbasid caliph who both encouraged a peak in the Baghdad intellectual sphere and undermined traditionalist scholars in his Mu’tazilite inquisition. The Ash’arite caliphs who followed believed everything an act of God’s will and emphasized strict adherence to religious authorities rather than individual interpretation. Natural events were independent instances of God’s will and thus could

not be rationalized. This, coupled with the destruction of libraries and madrasas at the hands of the Mongols in the 1300s, signified the end of an era and a worldview. The freethinking religion that allowed, even encouraged, intellectualism to coexist with belief was profoundly changed.

During the Golden Age of the Islamic Empire, Islamic religion as it was before the Ash'arites both spurred the development of medical knowledge and ensured that new and Classical literature was passed down to Western civilization. However, considering the changes that would soon occur as the Empire shifted values, religion in itself cannot claim to be the universal impetus for the development of medical knowledge. It is those strictly orthodox views on the natural world that firmly divorces modern religion from modern science in current thought. But rather, in the rationalist form supported by the Caliphate during the timeframe of the Golden Age, Islam created a sense of that scientific-religious duality. In doing so, and in conjunction with the broader secular growth happening in the Empire, it made medicine in particular more valuable to a profoundly religious society - providing the inspiration and motive needed for the development and sustenance of medicine.

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