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The senses of cholera: transformations of gustation and olfaction in 19th-century Iran

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ABSTRACT

In this article, I examine how Greco-Islamic and clinical medicine competed in the context of cholera epidemics in 19th-century Iran. By close-reading medical texts in this period, I sketch out this competition by focusing on how ideas about cholera prevention and treatment centered on certain understandings of the sense of smell and taste. The main argument is that while in Greco-Islamic medicine, the gustatory and olfactory experiences involving cholera and its treatment received substantial attention, in the clinical approach these experiences were methodically avoided and contained.


KEYWORDS

Iran; Shiism; cholera; olfaction; gustation; talismans

Introduction

The 19th century was the century of cholera in Iran. A series of seven pandemics has been recorded by historians of the disease, all of which touched the Iranian plateau (Barua and Greenough III 1992; Azizi and Azizi 2010; Afkhami 2019). Cholera was a fearsome phenomenon for farmers, peasants, merchants, military officers, courtiers and bureaucrats alike. When it hit a village or a town, it immediately caused uncontrollable panic among the inhabitants (Elgood 2010, 496–97; Dickson 1874). Some would flee while others would lock themselves up in their houses and pray (Elgood 2010, 506). Government officials would abandon their posts and leave the town to its fate. During the cholera pandemic of 1853 in Tehran, all military drills were canceled and soldiers were sent back to their home towns (*Vaqāyi* 1995, 738). Irrespective of their socioeconomic class, everyone was vulnerable. The disease could strike members of the inner circle of the Shah as well as unprotected ordinary Iranians (Elgood 2010, 497). If a city fell prey to an outbreak, no house, no palace, and no settlement was immune to it. None of the methods used in maintaining one's health (*hifz-i sihḥa*) could protect people from getting ill (Kashani-Sabet 2000, 1178–79). The hygienic measures prescribed by traditional physicians, magicians and herbalists, although widely propagated and used in the Iranian society, did not deter the disease. The epidemics always overpowered all medical efforts.

In this article, I show how Greco-Islamic preventive and remedying ideas aimed at cholera pandemics functioned as a semiotic basis for a specific understanding of the senses of taste and smell. To give a pre-taste of the ideas and observations that follow, a traditionalist physician, a term I use for practitioners and theorists of Greco-Islamic

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medicine, would always insist that afflicted people be nursed in a space perfumed with sandalwood, camphor and ambergris. In many cases, a specific diet characterized by distinct tastes was prescribed: paste of pomegranate (*anār*), paste of sour grapes (*qūra*), rhubarb (*rāvand*) juice and Berberis (*zirishk*) juice.

By contrast, the medical methods used and taught at the first Western style educational institution in Iran, the Dār al-Funūn, or *The Abode of Techniques* (founded in 1851), diminished olfactory and gustatory sensations in dealing with the disease. In general, the sensory experience of the disease was not emphasized in the ideas about prevention and treatment of cholera. The medical staff at the institution, whom in this article I refer to as clinicians, recommended that the diseased be kept apart in quarantine. This is most notably the case with Joseph Désiré Tholozan (d. 1897), whose work I examine closely in this article. No clinical treatise on cholera mentions the smell or the taste of the substances used for treatment (Langford 1833; Royal College of Surgeons of England 1866; Dobie 1867). In this clinical model, insofar as it reached the Iranian context, the body, the discourses on the body, and the technologies of treating the body moved toward ageusia and anosmia.

Cholera in context

The frequency of Iranian cholera pandemics was especially high in the 19th century. This was due to the impact of globalization projects in the region. Led mainly by Western governments and entrepreneurs, and later adapted and re-appropriated by Iranian clerics and reformers, these projects significantly increased commercial, military and social mobility (Algar 1980, 152–68). The European ships that headed toward the Western Indian ports, the British military presence in southern Iran, the Russian territorial expansions around the Caspian Sea, the annual pilgrimages to Mecca and Karbala and the educational and touristic journeys to Europe created a new ecology stretching from the Indian subcontinent, through Persia, the Arabian peninsula and Russia, to continental Europe. It was in this entangled space that cholera spread and killed. Cholera was a complex biocultural phenomenon in which different socio-religious issues intersected (Morris 1976). In Iran, an adaptation of European medical sciences was, in a highly effective way, promoted through the Dār al-Funūn curriculum and state medical programs (Ekhtiar 1994, 220–31). As studies in the history of science have compellingly shown, in the European context, these sciences were complicated by socio-religious and philosophical debates (see for instance Shapin 2010, 289–313). This complication was transposed to Iran, and more broadly the Middle East, while undergoing cultural modulations specific to the region. These modulations can be traced to the medical imagination of local physicians, herbalists and occultists, whose knowledge was heavily informed by the Greco-Islamic sources. Confronted with the relatively swift introduction of European medicine to Iran, these latter group began to compete, and in certain occasions collaborate, with the proponents of the “new sciences” (Ebrahimnejad 1998, 74; 2004, 128).

Cholera in Greco-Islamic medicine

In medieval Islamic medicine, the word *wabāʿ* was frequently used to refer to a variety of epidemic diseases. According to Peter Pormann and Emily Savage-Smith, it was “a more general term for pestilential disturbance or contamination of the environment” (Pormann and Savage-Smith 2007, 58). Amir Afkhami notes that the term was wide enough to

include what we know today as the plague and cholera at the same time (Afkhami 2019, 55–56). However, in the course of time, an especially in the 19th century, *wabāʿ* came to refer exclusively to cholera.

Before the advent of germ theory in the final decade of the 19th century, understanding the cause(s) of cholera proved very difficult for physicians around the world. Some believed that it was caused by a change in the quality of the air. Others thought it was the direct intervention of demonic forces, or blamed celestial movements. However, by the end of the 18th century, two main etiologies had emerged, dominating the discussion. According to the first of these two etiologies, changes in the quality of the air was the main cause for an outbreak; this was known as miasma theory. According to the other etiology, cholera was contagious and transmitted by touch from person to person.

Miasma theory was rooted in Galenic medicine, which was later adapted and re-appropriated in medieval Islamic medicine as humoralism (Afkhami 2004; Pormann and Savage-Smith 2007). It was based on the idea that the biological world, both that of the macrocosm of the universe and that of the microcosm of the human body, consisted of four humors (*akhlāt*), namely, blood (*dam*), phlegm (*balgham*), yellow bile (*ṣafrāʿ*) and black bile (*sawdāʿ*), and four qualities, namely, cold, hot, moist and dry.¹ Any biological condition, including a disease, was accordingly understood as a combination of these four humors and of pair of these four qualities: cold and moist, cold and dry, hot and moist, and hot and dry. The notion that putrid air could cause a cholera outbreak derived its plausibility from this conceptual backdrop of humoralism, according to which cholera was considered a hot and moist disease.

Moreover, humoralism was also applicable to the climate and the environment, which played an active role in the spread of epidemics. Physicians who believed in miasma theory considered a change in the quality of the air a determining factor in triggering an outbreak. Such a change, in their view, could arise from sources such as stagnant water, rotten fruit, excrements or cadavers. Next to these earthly putrefactive agents, as a function of the analogy between macrocosm and microcosm, celestial and otherworldly influences also entered the equation: a stellar and planetary configuration or a demonic intervention could also cause putridity in a particular place or region.

In sum, the most immediate cause of cholera was putrid air, whether caused by demonic, celestial or earthly forces. Iranian medical texts from at least the 16th century onwards mention all these factors in reasoning about cholera's etiology, from *The Sulaymanian Book of Advice (Naṣīḥatnāma-yi Sulaymānī)* of Muḥammad Ḥakīm Ibn-i Mubārak (d. 2007), to *The Subtle Cures (Dāqāʿiq al-ʿIlāj)* of Muḥammad Ibn-i Muḥammad Karīm Kirmānī (d. 1983), *Rules of the Cure (Qānūn al-ʿilāj)* of ʿAlī Ibn-i Muḥammad Ḥusaynī Tabrīzī (d. 1894), and the text I highlight in this article, *The Cure of Cholera (ʿIlāj al-Wabāʿ)* of Mūsā Ibn-i ʿAlīriḍā Sāvujī (fl. around the middle of the 19th c.). The authors of all these texts agreed that when the air became corrupt, it only had to penetrate one's body to bring about the symptoms of cholera. In the words of Sāvujī, this febrile disease is “a strange fever that blazes in the heart insomuch as it damages the natural (*ṭabīʿiyya*), vital (*ḥayawāniyya*) and psychic (*nafsāniyya*) functions and hinders their normal work” (Sāvujī 1853, fol. 16; I use the translations in Pormann and Savage-Smith 2007, 45–48).

Next to miasma theories, contagion theories proposed that the disease was transmissible directly from person to person. The staff of the Dār al-Funūn were among the main proponents of this theory. However, they did not specify, at least not as clearly as miasma

advocates, the actual causes for the disease. The trend was rooted in much older, global debates in different cultural milieus, both in Europe and the Middle East (see Baldwin 1999; Conrad and Wujastyk 2017; Afkhami 2019). Defenders of contagion theory, whether in 19th-century British, 18th-century Indian, or 15th-century Ottoman contexts, insisted on the transmissibility of epidemic diseases through close contact with the diseased (see for instance Varlik 2015, 72–81). The nature of this transmission and the kind of materials involved were not of primary importance (Baldwin 1999, 39, 41, 51; Smith 2002, 920–21), but rather it was a general “fear of contagion” that shaped the social attitudes toward epidemic diseases (Varlik 2015, 77).

From miasma to contagion, it is not only that the disease is understood differently, but also the ideas about the sensorial (in)capacity of the body in relation to the disease changes. Given that in miasma theory, transmission is air-born, the sense of smell, and by association that of taste, become pronounced in patients’ relation to the disease. In contrast, contagionists emphasize the sense of touch. In what follows, I focus on the first medical paradigm, that is, the humoralist miasma theory, in order to map out how its representatives approached cholera through the sensorium.

Sāvuji’s Cure of Cholera (‘*Ilāj al-Wabā*’)

My examination of the humoralist miasma view of cholera focuses on a lithographed book penned by the physician Mūsā Ibn-i ‘Alīriḏā Sāvuji, who was active during the reigns of Muḥammad Shāh (r. 1834–1848) and Nāṣir al-Dīn Shāh (r. 1848–1896). He wrote several treatises on the etiology, prevention and treatment of epidemic diseases, particularly cholera and the plague (Sāvuji 1853, fol. 7). Besides writing medical texts, Sāvuji was in contact with certain elites of the court who consulted him on health issues and demanded his regular visits and treatment (Kashani-Sabet 2000, 1187).

In the first part of Sāvuji’s work, the full title of which is *Physicians’ Instruction for The Cure of Cholera (Dastūr al-Atibbā’ fi ‘Ilāj al-Wabā’)*, written in Persian and lithographed by at least two publishers in Tehran,² Sāvuji elaborates the etiology of cholera. He reiterates the classical humoralist theories, which since the time of Manṣūr Ibn-i Ilyās (d. 1422) and his *Manṣūrian Medicine (Ṭibb-i Manṣūri)* had become tinted with religious aspects (Elgood 1962; Newman 1998). Sāvuji combines humoral pathology with miasma theory and a discussion of the healing power of Quranic scripture. He names two general types of causes, which are not entirely independent from one another and even overlap conceptually: those that give rise to the choleric air and those that bring about the choleric symptoms in the body. One set of causes affects the air, making it choleric; the other affects the body. Both the body and the air, in other words, can become choleric.

As Sāvuji explains, the air may become corrupt if “there are many holes of water around the town which are putrefied by heat and from which putrid vapor ascends,” or if “there is a field around the town which oozes water (*zihāb*),” “a rice field around which putrid vapors form,” or “improperly buried bodies around the town.” The putrefaction of the air could also be caused by the change in the temperamental quality of a season, like when “winter becomes warm and moist,” or when “summer becomes wet.” The blowing of the southern wind in an untimely period of the year can also work as a putrefactive force (Sāvuji 1853, fol. 9).

However, according to Sāvujī, these external conditions do not necessarily lead to the appearance of symptoms in the body. Cholera only affects the human body on the condition that it is filled up with corresponding humoral mixtures (*akhlāt*), thereby making it susceptible to receive the putrid air. The diseased body, in short, can only be understood as part and parcel of the cosmos at large, a network of causes harming it from the inside *and* the outside.

In Sāvujī's etiological reasoning, the humors of the body correspond directly to those of the air. The seasonal changes, climatic fluctuations and vegetal exudations contributed to and portended the appearance of cholera in the body. Treating the disease, therefore, consisted in restoring balance to both the inside and the outside of the body, to the digestive tract as well as to the things immediately touching the body, that is, air, clothes, food, and drink. This restoration of the humoral balance is called "treatment of the disposition" (*tadbīr-i mizāj*); it occupies more than half of Sāvujī's text. The notion of *mizāj*, which can be rendered in English as temperament, disposition, humor and sometimes even atmosphere, points to the entanglement of the inside and the outside of the body. Management and treatment of the *mizāj* required attention to the internal conditions of the body as well as the external factors affecting it. It is around this notion that I trace the formation of a certain sensorium, and of the senses of taste and smell in particular.

Traditionalist treatment: the taste and smell of cholera

Sāvujī proposes a variety of remedies to cure the disease. First, he prescribes a series of eating habits. The patient is advised to eat certain kinds of food, at certain times of the year and of the day, depending on the climate. However, it is not only the *mizāj* of the season but also of the body that dictates the kind of food to be eaten in times of cholera.

In Sāvujī's therapeutic framework, springtime, for instance, provokes movement on earth, and correspondingly, in the body. The reason is the melting of the "solid materials formed in winter," which, when they dissolve and start to flow, cause agitation and unrest in the body. In this time of the year, Sāvujī's advice is to eat calming food and avoid nutriment that provoke heat in the body (*musakhkhināt*), such as wine (Sāvujī 1853, fol. 66). In summer, the eating of food that cools the body (*mubarridāt*), such as watermelon, plum, cucumber and pomegranate, is encouraged. In autumn, dry foods should be avoided and instead, large amounts of fruit should be consumed, accompanied by cold water. Finally, in winter, warming foodstuff such as grilled meat (*kabāb*) can be beneficial (*ibid.*). In Sāvujī's model, smell is crucial for managing the seasonal factors, while in regard to regulating the internal disposition of the body, taste ensures one's health. While the *mizāj* of the air is managed by means of olfactory qualities and sensations, the *mizāj* of the body is transformed based on gustation. I will illustrate Sāvujī's sensorially organized treatment by way of a few examples.

Relating an experience he had in Cairo, Sāvujī recounts how he managed cholera in the city "when putridity emerged in the air and the disease appeared among the people" (*ibid.*). He first advised that people with a weaker *mizāj* reduce their meals to two a day, one right after sunrise and the other after sunset. For the first meal he prescribed bread with mint or vinegar and plum-and-barberry jam; for the evening meal, sour curry with spinach and pumpkin (*ibid.*, fol. 67). Elsewhere, he lists a series of mostly sour food to be

ingested at regular intervals: pomegranate juice, bitter orange juice, apple juice, sour soup (*āsh-i tursh*) and sour buttermilk (*dūgh-i tursh*). These foodstuffs he deemed beneficial if consumed cold during summer and served warm during winter (Sāvujī 1853, fol. 50).

Other examples of such gustatory interventions by traditionalist physicians of the period can easily be adduced. In 1896, a Qajar courtier, Farīd al-Mulk Hamadānī (d. 2002), writes in his journal about a treatment he learned from an unnamed traditionalist physician. According to this physician, the odorous juice of pussy willow (*bīdmishk*) and the bitter juice of squeezed quince (*sharbat-i bih*) cures cholera (Hamadānī 2009, 225). In another example, the Iranian Sufi and cleric Nā'ib al-Ṣadr Shīrāzī (d. 2009) writes in his travelogue about the curative properties of sour butter milk (Shīrāzī 2009, 155).

In almost all these cases, the taste of the prescribed food is explicitly mentioned. Taste becomes a therapeutic index. It helps people navigate their nutritional ecology. It should also be noted that the effect of these gustatory qualities is not limited to the oral stage of food consumption. Sāvujī also puts much emphasis on the ways every kind of food affects the internal organs, the stomach, liver and gallbladder. It is essential not to strain the stomach, for which Sāvujī distinguishes between the states of “heaviness” and “lightness,” dedicating quite a few pages to explaining how to understand these states and how to control them. Likewise, the gallbladder and liver must be constantly monitored, to avoid excessive pressure on them (Sāvujī 1853, fol. 68). These internal sensations, described at length with as much verbal precision as a medical text can afford, play an important role in the experience of therapeutic food consumption.

The prescribed substances not only add up to a list of foodstuffs thought medically relevant, but they also inculcate a particular gustatory sensibility. This gustatory sensibility guides people in managing their body's *mizāj* in relation to the environment. To complicate this digestive experience even more, in the case of patients in more advanced stages of the disease, the consumption of laxatives is advised, with the purpose of forcefully cleansing the body. Sāvujī states that some of these laxatives should be ingested orally, while others should be applied rectally. Curiously, in both cases, the taste of the substance matter. While for oral use a sour and slightly salty taste is the norm, for rectal infusion (*tanqīh*, *huqna*, *tal'in*), bitter and strongly salty substances are advised: beetroot juice, tamarisk manna (*gazangabīn*) and manna of Alhagi maurorum (*turanjabīn*) (Sāvujī 1853, fol. 62). In Sāvujī's medical model, it is important for patients to be always aware of the taste of the substance they ingest, by whichever route this may happen.

This taste-based approach to medication can be also found in Sāvujī's classical predecessors, such as Muḥammad Ibn-i Zakariyā-yi Rāzī (Rhazes, d. 925) and Ibn Sīnā (Avicenna, d. 1037). The latter, for instance, in his *Canon of Medicine* (*al-Qānūn fī al-tibb*), describes the four humoral fluids in terms of their taste, and not only in terms of their color and texture: phlegm (*balgham*) is sweet when slightly putrid, the black bile (*sawdā*) is generally sour and the yellow bile (*ṣafrā*) is bitter (Ibn Sīnā 2008, 334–35). Echoing his classical masters, Sāvujī's understanding of taste is that of a highly specialized sense, the description and analysis of which requires more than just a familiarity with the physiology of the tongue and mouth. As Sāvujī's case demonstrates, in traditional Iranian medicine the body's experience of cholera is understood in terms of gustation and, albeit to a lesser extent, olfaction. In this dominantly taste-based idea of cholera, three interrelated stages

can be distinguished: gustation, digestion and rectalization. Taste is usually associated with only the first one, namely gustation, but the loaded concept of *mizāj* and the use of the term in the context of cholera therapy suggest a more complex sensory setup.

This complexity is mirrored in the approach toward the external determinants of *mizāj*, namely, the olfactory management of the outside. Sāvujī's first set of olfactory techniques has to do with the management of the household (*tadbīr-i manzil*). To improve the quality of air in houses, he states that every day the windows should be opened. He also suggests that, if possible, inhabitants should lodge on the higher floors. Inside the house, he recommends the "burning of perfumes" and the use of "scented substances and vapors." Such substances include Indian aloeswood (‘*ūd-i hindī*), ambergris (‘*anbar*), frankincense (*kundur*), musk (*misk*), sandarac (*sandarūs*), fenugreek (*ḥulba*), mastic (*maṣṭakī*), sandalwood (*ṣandal*) and camphor (*kāfūr*). According to Sāvujī, these substances can be used individually or in combination (1853, fol. 70). Another substance used to smoke out putrid air is tobacco, which was already used, according to Sāvujī, in the time of Hippocrates. It was burned in large amounts in several pits around the city so as to fumigate the urban space (*ibid.*, fol. 71).

The prescription of these ingredients is always theoretically informed by humoralism. Put crudely, the logic is to prescribe foodstuff and aromatics with warm temperament because cholera's disposition is cold. Above all, for Sāvujī, the supreme remedy is saffron (*za ‘farān*), a substance with warm and dry temperament, which as he notes, is not "surpassed by anything else for the treatment of cholera" (*ibid.*, fol. 72). It is beneficial not only for the body, enriching digestive experience, but also for the air, enhancing olfactory experience. Saffron "eliminates the toxicity of the air . . . especially the choleric air," but it also "strengthens the heart and eliminates its putridity, corruption and ferociousness" (*ibid.*).

Talismanic methods

These examples form only a small part of Sāvujī's mostly taste-based and partially smell-based therapeutic approach to cholera. I have limited myself to a few examples to illustrate his methods and the conceptual framework in which they are embedded. Now I wish to complicate our understanding of this medical regime further, by suggesting that Sāvujī's sense-centered approach is not only found in his textual descriptions and prescriptions, but can also be seen in his diagrammatic instructions (Figures 1–2), most tangibly so in the talismanic remedies given at the end of his treatise. Here, Sāvujī reminds his readers of a saying attributed to the Prophet, who warns that "all those who fail to ask for divine healing, God does not cure them" (*ibid.*, fol. 130). He also relates sayings from the Shiite Imams to the effect that one must rely on the Quran for healing, first and foremost. Reciting the surah of *al-Fātiḥa* seven times, for instance, brings healing benefits, and "were it not to cure, reciting it seventy times would surely do" (*ibid.*). Not only recitation is helpful, however. Sāvujī advises to write verses of the Quran on small pieces of paper for people to carry around with them, keeping them in their garments or wearing them around their necks. In extreme cases, when the disease shows no sign of decline, one can dissolve the paper in water and drink the solution, or in even worse conditions, eat the paper directly. As I argue, it is the same logic of taste that informs Sāvujī's earlier recommendations and his talismanic diagrams.

Ingestion of holy writ and other sacred substances is a well-known feature in Islamic cultures, and as such has been studied by scholars in the field. In a conceptually rich study of ingestion rituals in Islam and Christianity, Finbarr Barry Flood observes that these practices “point to a desire to collapse a distinction between emulator and emulated that is central to the operation of mimesis as re-presentation” (Flood 2014, 463). According to Flood, the ingestion of sanctified objects should not be understood in terms of a logic of representation. Talismans are not a mimetic representation of the sacred. Rather, they help practitioners to “become” sacred themselves. Invoking the key Deleuzian concept of “becoming,” Flood understands ingestion as a technique of mediation, as opposed to that of representation.

Keeping in mind Flood’s concept of becoming-by-ingestion, Sāvujī’s therapeutic technique can be understood as a mediation of divine power by means of an assemblage of ink, paper, text and the digestive tract. As such, the practice of ingesting sacred texts is not medication in the sense of triggering a chemical reaction in the body. A different medicative semiotics is at work. The idea is not to cure cholera through the chemical constituents of paper and ink, but through a material mediation of the sacred. For this medicative system to function as intended, a specific conception of the body must accompany it, a corporeal model that imagines a body capable of being affected by scripture in liquid form, or inscribed on bowls and amulets. Sāvujī’s *Cure of Cholera* can be read as a manual for producing such a model. The humoralism of the first part of the treatise, as I have argued, does not only aim at treating the body but also at imagining one. It is by virtue of this imagination that the talismans featuring in Sāvujī’s text acquire their meaning as taste-based affective objects.

In Sāvujī’s text, depictions of talismans appear on roughly every other page in the second half of the book. Some contain Quranic words, others are cryptic, written in *abjad* letters and Arabic numerals, only decipherable by those knowledgeable in the occult sciences (see Cammann 1969; Blair 2001; Canaan 2004; Porter, Saif, and Savage-Smith 2017). According to Peter Pormann and Emily Savage-Smith, such amulets were used throughout the history of Islamic medicine. They were “used not only to ward off the Evil Eye and misfortune, but could also be employed to increase fertility or potency or attractiveness and avert disease and sudden death.” The visual representations in them, Pormann and Savage-Smith further note, “encompassed not only magical symbols but also invocations and prayers, nearly always addressed to God or one of his intercessors” (Pormann and Savage-Smith 2007, 145). The written words and letters were not only meant to be read, but also to be touched, carried around, put under one’s pillows, or ingested (Porter, Saif, and Savage-Smith 2017, 544).

Figure 1 shows one of the most recurrent designs. The design is also found, with different words and codes, in earlier sources, as well as in occultist manuals of the Qajar era (see, for example, Qumī 1906, 177). Figure 1 is particularly interesting as it combines multiple visual and textual elements in one image. The diagram is in the form of a circle, around which a few crypted words and magic formulas can be seen, followed concentrically by the Throne Verse (*āyat al-kursī*, Quran 2:255). Inside the circle, near the perimeter, some of the words and formulas on the outside are repeated. We will see the signification of these signs in more detail later below. The innermost circle, around which are concentric layers filled with single letters, is empty of both diagrammatic and textual content. This diagram has been especially important among the Shiites. It is called

The Garden of Names (jannat al-asmāʾ), and is described in a manuscript by the same name ascribed to the first Shiite Imam, ‘Alī Ibn Abī Ṭālib (d. 661), during an epidemic in Iraq in the mid 7th century. The diagram has been redrawn, edited and commented upon by many physicians and occultists ever since, and has also been reportedly used in Iran during the Corona pandemic (Nasiri Savadkouhi 2017, 112–13). Many versions of this diagram have appeared in various medical manuscripts and occult manuals. In most of these versions, the diagram’s crypted contents have remained unchanged: Immediately around the smallest circle at the center, nineteen letters are arranged, each of which are the first letter in the names of the Islamic guardians of hell. Adjacent to this ring, the second row of letters are six names of God, the total letters of which, again, amounts to nineteen: *al-fard* [sic], *al-hayy* (The Living), *al-qayyūm* (The Subsisting), *al-hakam* (The Arbiter), *al-‘adl* (The Just), *al-quddūs* (The Holy), excluding their definite articles as well as their geminated consonants. Following this second ring, the third one contains the dissociated letters of the *basmala*, common Quranic formula of “in the name of God the Compassionate the Merciful” (*bismi’llāhi al-rahmāni al-rahīm*). And finally in the last ring, there are nineteenth crypted signs, with various combinations of the numbers nine and one as well as Arabic letters and words. According to Canaan’s decipherments of Arabic

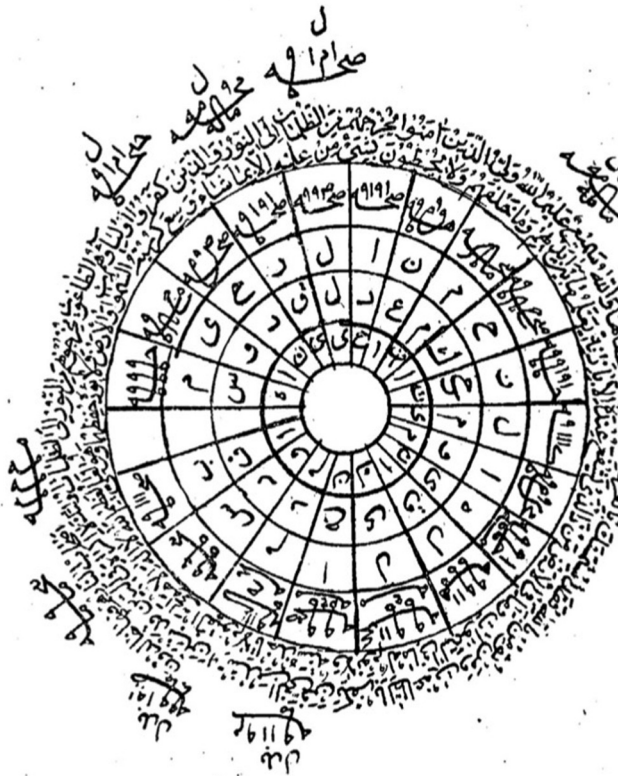


Figure 1. Diagram in the form of a circle containing the *āyat al-kursī* (Quran 2:255) and *basmala* (Sāvujī 1853, fol. 146).

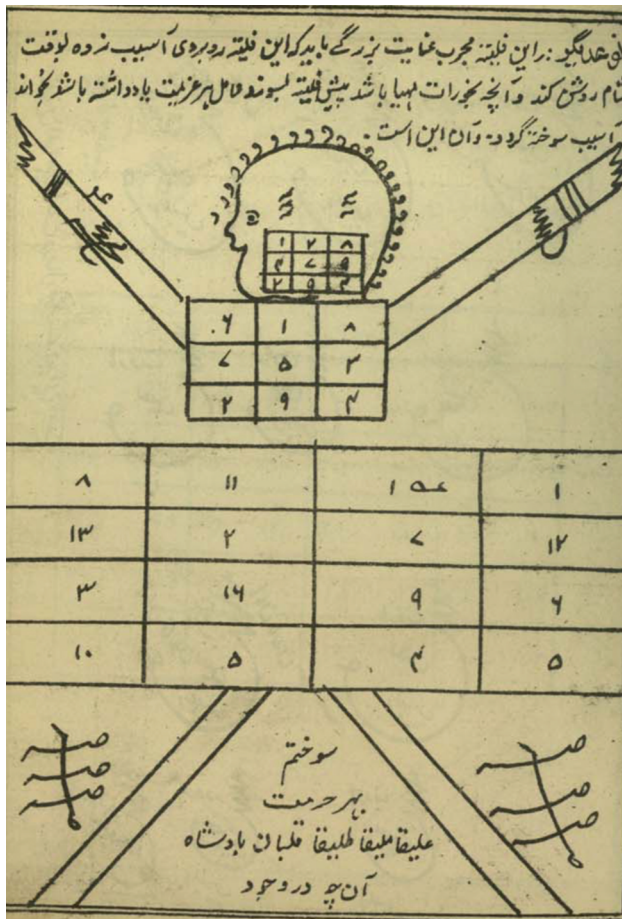


Figure 2. A humanoid diagram used to undo physical or psychological damage (Hazāravī 1951, 93).

diagrams, the recurrence of the numbers nine and one may be interpreted as celestial entities that includes angels, demons and even the jinn ('Alī Ibn Abī Tālib 1985, 31; Cnaan 2004, 171).

Interesting correlations can be noticed between this circular diagram and Sāvujī's taste-based prescriptions, as discussed above. The outer concentric layer of the diagram might be seen as performing the same task as gustation; the geometrically organized interior as doing something similar to digestion; and the circle at the center invokes the rectum. I do not argue that the diagram *represents* these three loci of tasting in the body. What I wish to suggest is that the three stages of the diagram are functional equivalents. The two three-fold models refer to different contents, but their organizing logic is the same, in the sense that they both operate along a processual continuity between the inside and the outside. The objects created according to these models are not meant as icons or symbols to be consumed by reading, seeing, or hearing. The texts are not meant to be recited. They are written and drawn in folded pieces of paper, hidden or dissolved in

water. These sacralized objects are meant to affect the *mizāj*, either by explicit prescription of a particular regimen, or by the direct material mediation between a pre-conceived sacrality and the body's digestive system.

Sāvujī points out that the verse on the outer rim is the Throne Verse. It is written in clear letters and therefore easily readable, or palatable. On the inside of the circle, in the second concentric layer counting from the perimeter of the circle toward the inside, we see individual letters in boxes. Starting at around eight o'clock, and reading anti-clockwise, these letters add up to the *basma*. In the middle section, trapezoid boxes, the "organs" of the diagram, point toward the center. In this middle section, the words are broken up into letters and thereby, as it were, digested. Finally, in the central circle of the diagram, all scriptural meaning is dissolved; scripture disappears or is made imperceptible. The descriptions given in *The Garden of Names* do not explicitly mention this digestive movement in the circle. However, the manuscript does describe a processual movement from the outside to the inside of the circle. According to its original description, from the outside to the inside of the circle, we move from the sky, where demons fly over and inflict epidemics on earth, to the depth of hell, where the infernal angels, indexed by the first letter of their names on the diagram, are setting ablaze the hellfire. God's names in the middle section are meant to "strengthen [us] against the heat of hellfire," and thus also against the "flames of the plague" (ʿAlī Ibn Abī Ṭālib 1985, 31). Therefore, from the periphery to the center, one burns into the blazes of hellfire. Given this processual description, I suggest the digestive model can also be a credible view on this talisman.

To repeat, the object, or content, of the diagram is different from that of Sāvujī's model of tasting in three stages, yet it operates according to the same logic. While the latter functions in relation to a natural substance, food, the former functions in relation to a cultural object, divine speech. However, to borrow from Laura Marks' ingenious study of talismanic images, they are both "operational," or in other words, interventional, but not primarily representational. They both allow the occult practitioner to "manage the cosmos," or in the case hand, the diseased body, "in miniature, folding the powers of the planets and stars together with earthly people, places and objects to make things happen" (Marks 2020, 234). In this sense, [Figure 1](#) can be read as an anatomical diagram, in which the circle's perimeter indexes the boundary of the human body, which it seeks to heal by means of the talismanic program coded into the diagram.

Moreover, this specific body-oriented reading of the diagram was not limited to the digestive context provided by medical texts such as Sāvujī's. There is a larger Middle Eastern tradition of producing and using body-shaped talismanic diagrams, a tradition in which the Egyptian Aḥmad Ibn ʿAlī al-Būnī (d. 1225) plays a central role, whose occultist manuals contain numerous diagrams that either are organized in the shape of the human body or represent it directly (al-Būnī 1941). As for 19th-century Iran, associations between the body and such ciphered diagrams were not uncommon. There are many examples of diagrams that point to the body in manuals of magic and divination, some of which contain even more explicit references to the body and its digestive tract. [Figures 2 and 3](#) are a case in point. [Figure 2](#), which comes from an occult manual lithographed in 1951, is a humanoid diagram used to undo physical or psychological damage inflicted on a person. The short text on the top instructs the practitioner to burn the talisman in the presence of patients and make them inhale the fume. [Figure 3](#), from an undated lithograph of a work by the 16th-century polymath Ḥusayn Ibn-i ʿAlī Kāshifī, likewise shows

a humanoid diagram designed to cure various diseases. The instruction reads that the crown on the humanoid's head should be drawn on paper with gold-water and the curves with musk and saffron. The paper should then be dissolved in water and the water imbibed by the patient. In both diagrams, the ciphers and shapes in [Figure 2](#) become explicit references to the human body. In [Figures 2 and 3](#), numbers and letters are placed in the abdominal areas of the humanoid figures, who digest them – an act of digestion replicated by the patient in case ingestion is prescribed. Other examples of explicit references to the human body can be found in the Iranian context (Vesel 2011).

Tholozan's de-scenting of cholera treatment

In the second half of the 19th century, the clinicians working at the Dār al-Funūn came to challenge Sāvujī's model in fundamental ways. Rather than following the gustatory and olfactory logic of traditional Iranian medicine, they proposed intricate theories and techniques to rid cholera treatments of taste and smell. In his travelogue, the Austrian physician at the Dār al-Funūn, Jacob Polak (d. 1983) mentioned on many occasions his inability to understand why Iranian physicians prescribe so much laxative and strong-tasting foodstuff for the treatment of cholera (Polak 1983, 416). Polak, by contrast,



Figure 3. A humanoid diagram used to cure various diseases (Kāshifī n.d., 42).

expressed himself in favor of methods, including quarantine, that help sever the connections of the body with the outside world. Polak's successor, (Elgood 2010, 518), likewise railed against purging techniques and the dietary regimes prescribed by the traditionalist physicians (Elgood 2010, 518). For the clinicians, purging techniques were dangerous; they delayed the healing process and even caused serious harm.

The clinicians were also suspicious of the smell and taste of things choleric. The stench of cadavers and of contaminated water alarmed them (Tholozan 1869, 250). For them, the diseased bodies were a menace to others and a source of contagion. In order to ameliorate conditions, the physicians and teachers at Dār al-Funūn wrote major treatises dealing with prophylactic measures against cholera. One case in point is *Prophylaxie du Choléra en Orient* (1869), written by Tholozan; Below, I focus my inquiry on this text. My aim is to show how the sensorial logic at work in the clinical approach to cholera was different from the traditional approach.

In Tholozan's view, health reforms in Iran have to begin with a "réforme littéraire," that is, a reform in the medical texts published in Persian. Once freed from the uncritical adherence to the medicine of Ibn Sīnā, Tholozan proclaims, Iranians can realize their aspiration to bring their "destiny in touch with those in the modern world" (1869, 250). He strongly believes that reforming the general state of affair is predicated on reforming popular beliefs in society, which most seriously impede the successful application of modern sanitary measures in the country. In this regard, he asserts that "the most powerful means of change in the Orient" resides in the "scientific and popular literatures created and protected by the state" (ibid.). In other words, Tholozan emphasizes that this fundamental epistemological reform should be sponsored by the state.

Tholozan argues that reform, once it is initiated and sustained on the "literary" level, will proceed to more practical matters, such as managing water supplies, cleaning public places and implementing quarantine measures. As for water management, Tholozan begins by noting how the intricate, centuries-old Iranian system of underground canals (*qānāt*), "designed to supply drinking water from great distances for free," was unscientifically maintained and susceptible to contamination (ibid., 17). The problem, he states, is that water is contaminated once it is brought to the surface. To make matters worse, the water is then used by the public for washing, cooking and bathing without a proper drainage mechanism. As a result, public places such as bathhouses and caravansaries become hotbeds of contagion, contributing most gravely to the spread of epidemic diseases. The water used to wash clothes and utensils, according to Tholozan, is another source of infection, flowing in public spaces unseparated from drinking water.

The lack of canalization, as Tholozan observes, is therefore one of the main reasons for the spread of cholera. It is particularly problematic, in Tholozan's view, when water is not transported in "closed tubes." The openness of water to the outside is surely the main factor in spreading the disease: "The circulation of the drinking water inside closed tubes with a precision that ensures impermeability to soil humidity is one of the most imperious hygienic necessities at all times and especially at times of cholera epidemics" (ibid., 20). It can already be seen how the indigenous preference for openness to the outside world is being subverted.

The unhygienic conditions in lavatories added yet another layer to the crisis. There was no sewer system in Iran in the time of Tholozan. Human excrement accumulated in "non-bricked pits," which were simply shut after they reach their full capacity (ibid., 21). The

problem was aggravated when the underground canals of clean water flowed in the vicinity of these pits and thereby became contaminated. This water was then used for cooking; the food exposed to the feces. In sum, the urban ecology of Iran was radically permeable and open.

In Tholozan's account, pilgrimages also contribute to the spread of the disease. The generally unhygienic conditions in which pilgrims undertake their journeys to the holy places usually aggravates cholera pandemics. Carrying their dead along the way makes the situation even worse. Tholozan draws attention to the strong smell of the cadavers carried by the pilgrims: "There were caravans of corpses just as there were caravans of pilgrims. And it even occurred that travelers met a person who transported around a hundred to two hundred dead bodies. Woe to the smell when wind blows from this mass grave" (ibid., 26). Tholozan also notices how sloppily the corpses are wrapped up, as a result of which cadaveric puss leaks out contaminating the environment. As a temporary solution, Tholozan had previously suggested to the government that a certain injection be made into the cadavers to prevent the infection from leaking out of the body. However, according to Tholozan, this was vehemently opposed as it was considered a profanity, though Tholozan does not specify by whom. As an alternative, he had suggested welding the corpses in tin plates, which as he admits, proved unpractical due to the lack of welding expertise in Iran. Tholozan's favorite method is to put corpses into "terracotta cylinders tightly glazed on the inside." Although adding considerable weight to the pilgrims' procession, Tholozan maintains that this method is "an effective way to close off the corpses from the outside world" (ibid., 27).

Tholozan discusses at length the effectiveness of quarantine measures. On one hand, he is critical of applying this method without considering the geographical and demographical specificities of cities. The general rule of quarantine for him is that it is effective by sea (*par voie de mer*) but not so much by land (*par voie de terre*) (ibid., 39). The province of Yazd, for Tholozan, is an exception to this rule, as it is surrounded by deserts and cut off from other cities. In all other cases, he does not have much confidence that terrestrial quarantining can be effective in Iran. This is due to several factors, such as the impossibility of restraining nomadic movements across both western and eastern borders, and the religious resistance against these measures. This suggests once again the radically open and porous ecology in the region, where political borders could not be practically maintained and were regularly and uncontrollably breached. Public resistance against quarantine measures was generally high in 19th-century Iran, especially in the provinces. Popular medical texts occasionally include criticisms and even poems written in mockery of quarantine ((Elgood 2010, 524). It should also be mentioned that already two decades before Tholozan's sanitary council brought the issue of quarantine to the fore, Iranian newspapers had occasionally referred to it. The *Vaqāyi*' newspaper, for instance, reported on quarantines in Europe, but it did not discuss quarantining in relation to the Iranian epidemics of 1852–1853 (*Vaqāyi*' no. 84, 97, 145).

Tholozan, ultimately, deems "cleanliness" (*propreté*) the most effective preventive method:

Cleanliness is in effect the most sovereign remedy, not only against cholera but also against most epidemic and endemic diseases. Cleanliness is not the only required thing but the most important. Cleanliness, as I understand it here, is almost all public and private hygiene (Tholozan 1869, 48).

Tholozan instructs those in charge of maintaining hygiene to take this conception of cleanliness in both public and private into account in their approach to cholera. The agents of the state's sanitary apparatus must first approach individuals and then, on a larger scale, improve the conditions of conglomerations such as villages and towns. Treatment is hardly an issue for Tholozan. It is instead prevention that preoccupies him. By contrast, Sāvujī does not mention any of the issues emphasized by Tholozan. The problems with the pilgrims, the unhygienic water conditions, and the uncleanness of the public places are not once touched on in Sāvujī's *Cure of Cholera*.

Conclusion

Khaled Fahmy, in an essay that investigates state-backed sanitary policies in 19th-century Cairo, has shown that among the measures taken against the widespread stench in the city, a water pipe network and sewer system were established (Fahmy 2002, 176). Fahmy traces these sanitary measures in the context of the widespread belief in miasma theory in 19th-century colonial Egypt, a country that, like Iran, though a few decades earlier, had opened to the Western medical education. Fahmy is particularly sensitive to the ways the general public resisted certain modernizing measures – for instance the reluctance of the butchers to submit to the policies, or the dissatisfaction of people against the draining of the city ponds (Fahmy 2002, 176–77).

In a more recent study, Fahmy revisits the theme of social resistance against clinical methods in the context of medical reforms in Cairo (Fahmy 2018). He argues that people's resistance against modernizing measures such as quarantine was not driven by religion. Rather, he argues, this resistance was directed against the ways in which these measures were implemented and how they affected "the well-being of the living." The defense of Sharia, in comparison, played a less important role (Fahmy 2018, 61–62). In Iran, the clinical methods and measures propounded by Tholozan — quarantine, new hygienic rules in public spaces, new regulations for burial and treating the diseased corpses and so on — were likewise resisted by large segments of society. To add to the examples cited above, the governor of Sistan, a southeastern province in Iran, telegraphed the capital in 1899 to inform his superiors that a quarantine that had been imposed on cholera patients and burying the dead had been broken and that people had taken possession of the bodies of their sick and dead relatives (Elgood 2010, 514). According to Fahmy, the opposition against quarantines were mainly the result of the clerics' concern about how methods of imposing quarantines caused panic and anxiety among people. It is the psychological effect of quarantine that prompted the clerics to oppose modern measures – an effect that even the moderns took seriously. In brief, Fahmy views the two clinical and traditionalist medicines in complementary terms.

While Fahmy's studies point to this more collaborative relation between the clinical and Greco-Islamic medicines in concrete sociopolitical practices in 19th-century Egypt, my brief examination of the Iranian case has been more sensitive to the conceptual differences between the two medicines, played out in concrete medical ideas about cholera. Put differently, while Fahmy views social acts of resistance against clinical methods as collaborative negotiations between two medical cultures, I see them, complementary to Fahmy's thesis, as competitive encounters between two text-based conceptual frameworks. Such differences are too important, in my view, not to be highlighted and studied.

My contention is that a certain way of thinking about the human body informs these acts of resistance. Put differently, ideas about the human body and its relation to the environment created an intellectual context in which collective social action, such as resistance against quarantine, could be meaningfully performed.

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