RESEARCH CENTRE FOR ISLAMIC HISTORY, ART AND CULTURE

Proceedings of the International Congress on

The Maghreb and the Western Mediterranean in the Ottoman Era

Rabat, 12-14 November 2009

Actes du Congrès International sur

le Maghreb et la Méditerranée Occidentale à l'Époque Ottomane

Rabat, 12-14 Novembre 2009

Osmanlı Döneminde Mağrib ve Batı Akdeniz

Milletlerarası Kongre Tebliğleri

Rabat, 12-14 Kasım 2009

İstanbul 2013

Science, Secondary Causation and Reason in the Early modern Ottoman Empire and Morocco: Al-Yusi and his students

Justin Stearns*

i. Framing the Question

Not long ago, the following statement would have met with broad acceptance: after an initial period of rich cultural and intellectual production, displayed in fields as varied as law, the natural sciences, literature and theology, the Arab world and with it the Muslim world as a whole entered a period of stasis if not decline following the collapse of the Abbasid caliphate in the 7th/13th century, only reentering the dominant narrative of world history in the nineteenth century when reform movements emerged in response to expanding European colonialism. While such a description of intellectual activity in the Arab Muslim world is now recognized by scholars as dated, inaccurate, and superseded by nearly half a century of insightful revisionist work, for the broader public and well as for many students of the Middle East and North Africa who do not work specifically on the Early Modern period, there remains a general understanding that the intellectual landscape of the region during the 16-18th centuries was comparatively uninteresting, characterized by imitation and a lack of new and original thought. In this paper, we will discuss a prominent scholar, al-Hasan b. Masud al-Yusi (d. 1102/1691), whose prolific writings and influence both in Morocco and in the Ottoman Empire, challenge this still widely-accepted narrative. Yet adducing al-Yusi solely as an example of the vibrancy of early modern Muslim thought is not our central interest here, and has already been ably demonstrated by Moroccan, European, and American scholars in recent years. Instead, we intend to show that al-Yusi's writings on natural sciences and the theologically thorny subject of secondary causality provide a fruitful source for elucidating the social status of the natural sciences in Arab Muslim world during the 11th/17th century.

* Religion Department, Middlebury College, Middlebury, Vermont, USA.

Before turning to al-Yusi's writings, it is worth reviewing the main ways in which our historiographical understanding of the early modern period in the Muslim world has changed in the past decades. Here the question has long since moved beyond whether Islamic thought was ever characterized by an absence of independent reasoning, once famously referred to with the phrase "the closing of the gates of ijtihad." Wael Hallaq, David Powers, Mohammad Fadel, Sherman Jackson, Lutz Wiederhold, Haim Gerber, and others have argued convincingly and in great detail that Islamic Law, a discipline with great authority in and central significance to Muslim societies, continued to develop and adapt into the modern period, be it through a creative and productive use of precedent or *taqlid,* or through the invocation of *ijtihad* itself. But the changes to the older broader historiographic narrative of Islamic intellectual decline have hardly ended there.

Let us list, in no particular order, some of the most important recent arguments that have challenged this previous paradigm: Indira Gesink, for example, has shown how the myth that Islamic legal thought had been unchanging prior to the rise of 19th century Salafism was promulgated by both reformers and conservative Muslim scholars and was uncritically accepted by a generation of early 20th century European Orientalists. Ahmad Dallal, John Voll, and Basheer Nafi have argued that the varied reform movements of the 18th century, from India to Yemen and West Africa, were characterized by a critical focus on methodological issues related to the study of hadith, though they differed widely otherwise. Sonja Brentjes has demonstrated in a series of insightful articles that the natural sciences were part of the standard curriculum within *madrasas* in the late Medieval period, and that the later European belief that Muslims had ceased to study the natural sciences has its root in the travel literature produced by 16-17th century Protestant and Catholic visitors to the Middle East. Gerald Endress has written on how, contrary to the once widespread belief, that philosophy ceased to be seriously studied by Muslims following al-Ghazali (d. 1111) in the 12th century. Avicenna and Islamic philosophy continued to be widely studied within *madrasas* into the early modern period in Persia. Khaled el-Rouayheb has shown that despite the opposition of some prominent scholars such as al-Suyuti (d. 1505), the discipline of logic was studied widely during the late medieval and early modern periods, and that the reform movements of the 18th century—the same studied by Dallal—actually took a much less favorable view of the rational sciences than did

many thinkers in Morocco, the Ottoman Empire and Persia during the 17th century. In making this argument, el-Rouayheb has emphasized the importance of al-Yusi and of his students in advocating the study of logic and rhetoric in matters of theology and law. Finally, Samer Akkach, as one of many who has studied the 18th century Syrian mystic Abd al- Ghani al-Nabulusi (d. 1731), has argued that both al-Nabulusi's desire to speak publicly and debate openly such controversial concepts such as *wahdat al-wujud,* and his nuanced Ashari understanding of secondary causality, speak to important and vital changes taking place in the intellectual landscape of the Middle East and North Africa at this time.

Taken together, this flood of studies on the vibrancy of intellectual thought in the Early Modern period sets the stage for our reading here of several passages of al-Yusi. For, while there is as yet no broadly accepted consensus on how to characterize the developments taking place in law, theology and Sufism during the early modern period, there should be little doubt that al-Yusi, who wrote prolifically on all three subjects, will play an important role in how we come to understand this period. That said, a deeper comprehension of the full significance of al-Yusl's work will have to wait until we have established a more nuanced picture of other developments of this period, one which reflects the work and contributions of other, less prominent authors.

ii. Al-Yusi, The Man and His age

Al-Hasan b. Masud al-Yusi is a towering figure in the intellectual landscape of seventeenth century Morocco. Perhaps most famous for his long and admonishing letter to the Alawite Sultan Moulay Ismail (r. 1672-1727), his significance in Moroccan history has been discussed by scholars of such varied backgrounds as Clifford Geertz, Jacque Berques, Hunry Munson Jr., Abdalfettah Kilito, and Abd al-Kabir al-Alawi al-Madghari. Al-Yusi was something of an intellectual outsider in his day, never fully accepted by the scholars of Fes, and largely formed by his initial education in the south of Morocco, and then his long years in the Dila zawiya between 1653-1668. Despite the ambivalence of many Fassi scholars towards him, which in part may be credited to al-Yusi having been favored by both Moulay Rashid and Moulay Ismail (regardless of his criticisms of the latter), al-Yusi attracted a large number of students, many of whom later settled in the Ottoman controlled eastern Mediterranean, and carried the teachings

and works of their teacher with them.[1] His numerous works included a commentary on the influential theological epitome of the 15th century al-Sanusi, a long theological commentary on the shah*a*da entitled Mashrab al- 'Amm wa-l-Kh*a*ss min Kalimat al-Ikhl*a*s, an extensive discussion of the nature of knowledge entitled al-Q*a*nun, his famous and unclassifiable Muh*a*d*i*r*a*t, numerous letters/short essays, and his *Fahrasa,* or account of his studies. Throughout these works, we find al-Yusi expressing broad support for the study of the natural and rational sciences, and clearly defining an understanding of secondary causation that was compatible with Asharism, the theological current which dominated Maliki North Africa and which is habitually identified with occasionalism. In the latter facet of his thinking, his emphasis on the credibility of empirical observation to produce reliable knowledge about the natural world parallels the views of his near contemporary Abd al-Ghani al-Nabulusi in Ottoman Syria.

iii. Defining Legitimate Science in al-Yusi's Work

Throughout the history of Islamic societies, there has always existed some tension around the practice of the natural sciences, with certain sciences, such as medicine and astronomical time-keeping being accepted and promoted by the majority of Muslim scholars, and others such as astrology and magic being viewed with much greater suspicion. To be sure, the term "natural science" as used here has a broader range of signification than it does today, but this reflects contemporary usage and the flexible application of the Arabic *ilm,* as seen in the way the term is employed by al-Yusi in his *al-Qanun,* an encyclopedia on the nature of knowledge and the proper comportment of both teacher and student. Before turning to al-Yusi's own division of the sciences, it bears noting that he himself had studied not only logic, but also astronomy, geometry, and medicine.[2] His defense of the study of these subjects was, then, hardly solely academic.

It is in *al-Qanun* that al-Yusi divides the sciences broadly into the philosophical or ancient sciences and the Islamic sciences.[3] Some within the

1 See here especially Khaled al-Rouayheb, "Sunni Muslim Scholars on the Status of Logic, 1500-1800," *Islamic Law and Society* 11 (2004), 213-32, and Idem., "Was there a Revival of Logical Studies in Eighteenth-Century Egypt?" *Die Welt des Islams* 45 (2005), 1-19.

2 See al-Yusi, Fahrasat al-Yusi (Casablanca: Dar al-Furqan, 2004), 126, 139

3 Al-Yusi, al-Qanun (Rabat: Matbaat Shalat al-Ribat, 1998), 146. Al-Yusi defines philosophical knowledge as follows: "We say that knowledge is either desired for itself or for other than

first category are to be accepted, some to be rejected. Those philosophical sciences that are generally accepted include mathematics (engineering, astronomy, calculation, music) and the natural sciences (medicine, veterinary medicine, physiognomy, dream interpretation, astrology, magic, knowledge of talismans, natural magic *(al-simiya')*, alchemy, agriculture).[4] Al- Yusi observes that there is much of these sciences which has been absorbed by Muslim scholars, much which has been preserved by laymen engaged in agriculture or building, and finally much which hasn't been used because it wasn't needed.[5] After giving a detailed definition of each of these sciences, al-Yusi reflects that none of the philosophical sciences are to be rejected out of hand:

There is no harm in any of them; we have no sympathy *(nahnu la naltafitu ila)* for anyone who forbids any one of these sciences, for in its essence knowledge (*ilm*) is nourishment for the mind, pleasure for the soul, and an attribute of merit *(sifat al-kamal)*. Indeed, their fruits in terms of nobility differ according to subject and goal, and the rulings [regarding their permissibility] differ according to intention.[6]

In fact, al-Yusi goes on to explain, even magic, which is forbidden by general consensus, can be studied if only to learn how to differentiate between magic and miracles, while the study of literature, permitted by general consensus, can be forbidden if it is intended to ridicule that which shouldn't be mocked. As the famous *hadith* has it: "Verily actions are to be judged by their intentions."[7] As a secondary justification for the study of the sciences of the ancients, al-Yusi demonstrates how the study of logic, medicine, astronomy, mathematics, geometry, to name only a few, are all

itself. The first of these is philosophy proper (al-falsafa al-ul*a)*, the aim of which is the completion of the speaking creature, and to attain the true meanings of things through exertion. It is either theoretical or practical. The first is either absolute and abstract (majarrad an al-m*a*da mutlaqan) and it is knowledge of the divine (al- ilm al-ilahi), or it is only in the mind, and this is mathematical/moral knowledge (al-ilm al-riy*a*di) or it is bound to matter, and this is natural science (al-ilm al-tabii). The second is related to a person's self . . . and is called the politics of the self and ethics . . . (Ibid., 146).

4 Ibid., 155. Strikingly, al-Yusi permits the study of magic, though solely for the purpose of recognizing it and knowing how to protect oneself from it (Ibid., 161).

5 Ibid., *176.*

6 Ibid., *177.*

7 Ibid. Compare al-Yusi, Fahrasat al-Yusi (Casablanca: Dar al-Furqan, 2004), p. 76.

enjoined in the Qur'an.[8]

With his position thus bolstered, al-Yusi is ready to cite opposing views. The first of these is that of Ibn Juzayy (d. 785/1383), a respected Granadan Maliki judge and scholar of the 8th/14th century who argued in his legal work *al-Qawanin* that all knowledge could be categorized according to 1) sciences of the Revealed Law, 2) sciences which were tools of the Revealed Law, and 3) sciences that had no basis in the Revealed Law. This last category could then be divided into those subjects which 1) were beneficial and caused no harm, such as medicine, 2) caused harm and no benefit, such as philosophy and astrology, 3) caused both harm and benefit, such as logic (dangerous because it led to philosophy), 4) that which neither benefitted nor harmed, such as genealogy.[9] Commenting on this division, al-Yusi notes that it rests on a false understanding of the term Revealed Law *(al-sharia)*, and that the religiously sanctioned sciences are those which are permitted by the Law, not those revealed in the Law itself.[10] More specifically, al-Yusi rejects Ibn Juzayy's condemnation of philosophy, arguing that the vast majority of the material classified under philosophy does not deal with creedal matters or the divine, and that this part has clear benefits for the community (and even includes agriculture and trade). Even the parts of philosophy that deal with the divine (metaphysics) need not be rejected entirely, for the theologians had accepted the true and pruned away the false. Al-Yusi's broader argument in defense of philosophy quickly reveals that he believes potential opponents of his to be concerned, like Ibn Juzayy, that an acquaintance with philosophy could lead to a heretical understanding of causality.[11] We will return to this concern below.

Al-Yusi then turns to the position of the respected Egyptian scholar al-Suyuti (d. 911/1505), who had forbidden the study of philosophy and logic. Al-Yusi notes that al-Suyuti had, however, permitted the study of medicine, and that this made little sense for, as al-Yusi rather playfully remarked, medicine was "loaded down with the falsities of natural philosophers and sages regarding the powers, spirits, the influence of the higher on the lower elements, and so on," whereas there was nothing in logic that

8 Al-Yusi, al-Qanun, pp. 210-13.

9 Ibid., 293-94.

10 Ibid., 294-95.

11 Ibid., 297-98.

contradicted creedal matters.[12] As Khaled el-Rouayheb has shown, it was in al-Yusi's commentary on al-Sanusi's *al-Kubra al-Sanusiyyah* that al-Yusi took the time fully to refute al-Suyuti's opinion of logic, mocking the latter's claim that since logic dealt only with universals and not particulars it was of no relevance. Such a statement would invalidate the possibility of any knowledge, al-Yusi argues. He had expected better from al-Suyuti.[13]

As mentioned above, al-Yusi suspected that many of the objections launched both previously and contemporaneously against the study of the non-Islamic sciences were rooted in the anxiety of Maliki-Ashari scholars concerning the issue of causality: the fear that the study of the natural sciences could lead both scholars and laymen alike to question the doctrine of occasionalism, central to the theological school of Asharism that dominated al-Yusi's environment and much of the Muslim world.

iv. Secondary Causality and God's Wisdom

At its simplest, Ashari theology, which had arrived in North Africa in the 10-11th centuries, claimed that Muslims should maintain that God was the only actor, the creator of everything, and that nothing else had any power to influence anything. While there was no necessarily inherent reason for occasionalism to preclude the possibility of secondary causation — a scenario in which God gave objects or natural phenomena limited and contingent abilities to influence other objects or people, few Ashari theologians chose to assert this explicitly, perhaps fearing that a theory of secondary causation would provide a slippery slope to a polytheism in which the Muslim masses believed in multiple efficient actors. Instead, they chose to explain habitually observable reoccurring natural phenomena with the concept of God's habit *(ada)*, arguing that each occurrence was caused directly by God and that no one thing had any true effect on anything else, and that as a corollary, objects and phenomena did not possess "natures" that could give the power to have an influence. The most famous example adduced here was that of fire burning wool, employed perhaps most famously by al-Ghazali in his renowned *Ihya' Ulum al-Din:* the fire itself did not do anything, it did not possess characteristics such as heat which might

12 Ibid., 299.

13 See Khaled al-Rouayhab, "Sunni Muslim Scholars on the Status of Logic, 1500-1800," Islamic Law and Society 11 (2004), 213-32, at 223-24. Compare with al-Yusi, Hawashl al-Yusi ala Sharh Kubra al-Sanusi (Casablanca: Matbaat Dar al-Furqan, 2008), v. 1, 279-85.

be credited with causing wool to burn. Instead, God habitually caused the wool to burn when it came in proximity to fire (similarly heat was perceived in conjunction with fire, but was not in any way necessarily connected to fire). For the most part Ashari occasionalism did not preclude empirical observation: instead of claiming to discover natural laws, for example, one could uncover God's habit. Some Muslim scholars did, however, take issue with occasionalism, the most famous of them being Averroes (d. 1198), who rejected *kalam,* claimed that Asharism's understanding of the world precluded any potential for knowledge at all. Al-Yusi did not undertake anything so radical, however, and attempted to integrate an understanding of secondary causality into Ashari orthodoxy. In both his *al-Qanun* and his *al-Muhadirat,* he made this argument —similar in many ways to that made only a few decades later in Syria by Abd al-Ghani al-Nabulusi— that one could go beyond affirming God's ongoing agency of bringing the world into being to the statement that God did this according to a perceivable "wisdom" *(hikma).* During a discussion ostensibly on the subject of evil omens, al-Yusi outlined the issue as he saw it:

Know that in the customary events (al-umur al-'adiyya) the common people and those of the elite who are deficient (al-qasirun min al-khassa) are lost. Concerning the common people (al-'amma), if they see something (occurring) with something they attribute it to that thing, and ignore God the Almighty. They don't know that God the Almighty, He alone is the active agent (al-fa'il), and nothing of creation has any effect in itself (bi-hal). (Thus) they fell into polytheism and (belief in) the unity (of God) left them. Concerning those of the elite who are deficient, they believe in the unity of the Lord Almighty in the act, and that he has no partner. They follow it in this fashion and deny the wisdom of God (hikmat Allah) the Almighty on His earth and in His heaven. If it were said to them that this thing is for the presence of that a cause, they would say that this has not been determined (hadha la mu'awwil 'alayhi) for the cause has no effect and it is the same if it is present or not. This is also great ignorance, for if God the Almighty is powerful, willing and without a partner, thus also He is wise and makes things happen (in association) with things. He orders causes and effects (asbaban wa musababat) with wisdom from Him, the Almighty, out of kindness for His worshippers, to put their souls at ease through perceived causes (bi-l-asbab al- mashhuda) . . . If someone attributes to something other than God influence in the presence or absence of something else, he

is a polytheist. And who denies the consigned wisdom (al-hikma al-muda) concerning the forms of created beings (qaw*a*lib al-ka'in*a*t), he is ignorant and blind. If it was only his refusal to perceive habitual events (jumudu-hu an idr*a*k m*a* jarrat bi-hi al-*ada*t) and experimental knowledge would inform him correctly (wa afsahat bi-hi al-tajrib*a*t), then it would be an easy affair. But this is a denial of the wisdom of the Lord, may He be praised, and the splendor of His behavior with his creations, which leads to acquiring knowledge...thus it is looking out of one eye without considering the other.[14]

Later in *al-Muh*adi*r*at, al-Yusi muses that the intelligent and those whom God has blessed understand that everything on earth and in the heavens is nourishment for the mind, and a means to gaining knowledge and science. This was an insight shared by many of those who practiced philosophy and who studied the world.[15] Al-Yusi returned to the issue of God's habit in his extended commentary on the *shahada, Mashrab al-Am*wal-Khass min Kalimat al-Ikhlas, where he compares a correct understanding of causality with obeying the Prophet: just as obeying the Prophet is not polytheism, neither is recognizing the habitual association of events with each other.[16] A full exploration of al-Yusi's understanding of the metaphysics of causation involves his understanding of the place and role of Sufis within Muslim society, and is an aspect we must regretfully pass over here. In any case, it is clear that while placing himself firmly within the Ashari mainstream, by advocating the importance of ascertaining the nature of God's "wisdom" and His predictable agency in the world, al-Yusi clearly advocated a nuanced understanding of causation which can be broadly understood as secondary causality.

v. Conclusion

Although al-Yusi undertook the Hajj in 1690, as Berque noted, he largely avoided studying with scholars in the Ottoman East and was generally disappointed with the level of learning he encountered there.[17] Instead, if we want to look for the influence of al-Yusi on scholars in the

---

14 Al-Yusi, al-Muh*adir*at (Rabat: Matbu'at Dar al-Maghrib li-l-Ta'lif, 1976), 96-97.

15 Ibid., 178.

16 Al-Yusi, Mashrab al-Am wa l-Khass min Kalimat al-Ikhlas (Casablanca: Matbaat Dar al-Furqan, 2001), v. 2, 97.

17 Jacques Berque, Al-Yousi: Problemes de la Culture Morocaine au XVIIeme Siecle (Paris: Mouton & Co, 1958), 21-22. See, however, al-Yusi, Fahrasat al-Yusi, 113-15.

Ottoman Empire, we will find it fruitful to turn to al-Yusi's students, many of whom left North Africa and settled in Egypt. Khaled al-Rouayheb has argued that Moroccan Berber scholars such as Abdallah al-Kinaksi al-Qasri and Ahmad al-Hashtuki (d. 1715), both of whom were students of al-Yusi, played an important role in introducing Maghribi advances in the field of logic into Egypt.[18] While we have not yet been able to find any explicit evidence that al-Yusi's views on the permissibility if not advisability of studying the natural sciences was similarly transmitted to the Mashriq, his views on secondary causation were paralleled, as mentioned, by the Syrian mystic Abd al-Ghani al-Nabulusi in the decades following al-Yusi's death. Samer Akkach has shown how al-Nabulusi, responding to the Medinan scholar Ibrahim al-Kurani (d. 1689), wrote a treatise on the permissibility of acknowledging secondary causes externally while inwardly affirming the unity of God.[19]

We are not arguing that al-Yusi's work influenced al-Nabulusi, although considering the reach of the influence of al-Yusi through his students this is far from unthinkable, but merely emphasizing the importance of al-Yusi for a proper understanding of the intellectual vibrancy of the 17th century in both Morocco and the Ottoman Empire. Here, we have been profoundly influenced by the work of Khaled al- Rouayheb, though we differ in our interests. Al-Rouayheb has argued cogently for al- Yusi to have been part of a group of Moroccan scholars who were at the forefront of the study of logic in the Muslim world in the 17th century and whose works and students deeply influenced the study of logic in Ottoman Egypt. In this study, we have focused on how al-Yusi saw the natural sciences in general, and to what degree his understanding of causality was conducive to bolstering the widespread validity granted to these sciences. A more precise elucidation of how al-Yusi's writings on these subjects influenced his fellow Muslim scholars around the Mediterranean will show to what degree his own views were exceptional for his age, as earlier scholars such as Berque maintained, or to what extant he represented part of a larger group of religious scholars who broadly supported the study of the natural sciences.

---

18 Khaled al-Rouayheb, "Was there a Revival of Logical Studies in Eighteenth Century Egypt?," 7-8.

19 *Samer Akkach, 'Abd al-Ghani al-Nabulusi: Islam and the Enlightenment (Oxford: Oneworld, 2007), 8788.*