

Part I

ANDALUSĪ CHANNELS OF TRANSMISSION



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RATIONAL AND MORE THAN RATIONAL SCIENCES  
IN THE Umayyad CALIPHATE:  
DIALOGUE, DEBATE, AND CONFRONTATION

*Introduction*<sup>1</sup>

The Umayyads shaped the scientific activity of al-Andalus to a considerable extent. However, their influence was limited by many factors, not least of which was the religious sensibility of society, as proven by the fact that the formative period of the Andalusī scientific legacy occurred between two contrary religio-political phenomena. On the one hand, the initial flourishing of these activities during the first half of the third/ninth century took place when controversial disciplines like astrology and rational theology were promoted by the Umayyad dynasty against the opposition of religious scholars. On the other, the crisis of the late fourth/tenth century, when al-Manṣūr b. Abī ʿĀmir, in order to consolidate his de facto rule by gaining support from religious sectors, destroyed the books in al-Ḥakam II's library that dealt with astrology and philosophy, and persecuted a good number of scholars for practicing rational disciplines and for their heterodox religious ideas<sup>2</sup>. For a more in-depth understanding of the scientific culture of the period, we examine the presence of science and philosophy in the circles of

1. This article has been commissioned as part of the project *Aspectos sociales en fuentes astrológicas árabes medievales: herencias y discontinuidades respecto a la tradición griega* / *Social aspects in medieval Arabic astrological sources: their legacy and discontinuity in the Greek tradition* (PID2021-126415NB-I00, MCIN/AEI/10.13039/501100011033/FEDER,UE).

2. Maribel Fierro names this episode, which concerned many scholars, «the trial of Ibn al-Ifṭīlī». On this, see M. Fierro, *La heterodoxia en al-Andalus durante el período omeya* (Madrid 1987), 162-66; M.-Th. Balty-Guesdon, *Médecins et hommes de sciences en Espagne musulmane: 2<sup>ème</sup>/8<sup>ème</sup>-5<sup>ème</sup>/11<sup>ème</sup> siècles* (PhD diss., Université de la Sorbonne 1988), 240-46.

power and the ideal space defined by the actions and interactions of the producers, transmitters, and receivers of knowledge of any kind in Andalusī society. The issue is especially relevant in fourth-/tenth-century al-Andalus for two reasons. First, a significant part of the intellectual activity of scholars focused on the most controversial disciplines: astrology and the study of the *bāṭin* (the occult), in both its religious and scientific senses. Second, the Umayyad caliphate was experiencing a particularly active period in which the process of building a scientific culture culminated under the leadership of the most learned ruler in al-Andalus history, al-Ḥakam II, who played a decisive role in fostering scientific activity, some of which clashed with religious sensibilities. I analyze both questions in light of known and new evidence, paying special attention to the implicit and explicit debates that were generated by religio-politically and epistemologically controversial disciplines.

### *An Excursus on Controversial Disciplines and Bāṭinism*

The following pages I focus on the specific form of the dialectic between reason and faith in a particular phase of Andalusī Islam. While the subject is very complex, for the purposes of this chapter, some essential points should be outlined. The so-called *‘ulūm ‘aqliyya* or *‘ulūm al-awā’il* (“rational sciences” or “sciences of the forerunners,” the Greek scientific and philosophical legacy enriched by Indo-Iranian contributions) do not always fit into orthodox Sunnī Islam, essentially defined, in al-Andalus, by the Mālikī school. Narratives about the episodes of persecution against those practicing the rational sciences agree that astrology and philosophy were the controversial disciplines par excellence<sup>3</sup>. In contrast, medicine was well accepted in religious sectors. Like medicine, the eminently practical disciplines such as calculus, engineering, and so on, which provide

3. As is well known, the most relevant episodes are the reaction against the introduction of scientific texts during the emirates of al-Ḥakam I and ‘Abd al-Raḥmān II (third/ninth century); the expurgation of al-Ḥakam II’s library (fourth/tenth century); and the persecution of Ibn Rushd and his disciples (sixth/twelfth century). See the eloquent lines about the two latter episodes written by Ibn Sa‘īd al-Maghribī in the seventh/thirteenth century; al-Maqqarī, *Nafḥ al-ṭīb*, ed. M. ‘A. Makkī (Beirut 1968), 1:221 and 3:185–86.

useful services for everyday life, were accepted because they did not question religious beliefs. Some aspects of the rational sciences that focus on teaching students abstract knowledge of the world that God has created may have been well accepted. Speculative theology, inasmuch as it is related, in many aspects, to the sciences of reason, may have been problematic throughout the Umayyad period, and Mu‘tazilī thought was one of the most controversial religious currents. Marginal disciplines such as magic and alchemy, which were directly identified with sorcery, presented greater conflicts than astrology or rational theology. Though the reasons for conflicts related to these should be more systematically studied, they are well known in general. These reasons include the denial of natural causality and the autonomy of reason; the affirmation of divine omnipotence and omniscience; and the prohibition of sorcery and divination, and others. This broad subject is beyond the scope of the current article, but it is always interesting to read and reread what one of the most brilliant minds of western Islam, Ibn Khaldūn (732–808/1332–1406), wrote about magic, alchemy, philosophy, and astrology. In his most famous *Muqaddima*, these disciplines are harshly criticized for their religious and epistemological flaws<sup>4</sup>. Ideology and philosophy are two sides of the same coin, as we see here. The social acceptance (or tolerance) of a discipline is well reflected in the statistics of scientific practice between the third/ninth and the fourth/tenth centuries in al-Andalus<sup>5</sup>: the number of people who knew or practiced mathematics and medicine was relatively similar<sup>6</sup> and these figures were far greater than the number of scholars

4. Ibn Khaldūn, *Kitāb al-‘Ibar* [«*Muqaddima*»], ed. Suhayl Zakkār and Khalīl Shahāda (Beirut 2001), 1:664–95 on magic, divination, and similar procedures, and 1:695–727 on alchemy, astrology, and philosophy. About Ibn Khaldūn’s arguments, see M. Asatrian, «Ibn Khaldūn on Magic and the Occult», in *Iran & the Caucasus* 7 (2003), 73–123; and the bibliography given in M. Melvin-Koushki, «Magic in Islam between Religion and Science», in *Magic, Ritual, and Witchcraft* 14 (2019), 261.

5. Balty-Guesdon, *Médecins*, 733–34. Even though the figures in these tables should be revised in line with the research conducted in the last two decades, they still give an accurate overview of the scientific practice of the period.

6. That is, 58 in medicine and 63 in mathematics. This is due to the fact that the scholars specialized in the division of inheritance (a legal discipline that utilizes both arithmetic and law) were considered mathematicians.

devoted to astronomy and astrology<sup>7</sup>. By contrast, those who knew philosophy were a minority<sup>8</sup>, and those familiar with magic and alchemy made up the smallest group<sup>9</sup>. This statistical snapshot of scientific activity, which matches similar figures for other Muslim societies, only gives a superficial approach to what really happened. Many factors may affect the accuracy of the data, not least the secrecy that characterized the essence of alchemy and magic<sup>10</sup>. However, we can see that, first, scholars who knew the controversial disciplines were not so few in number and, second, astrology was widespread despite religious qualms.

The search for the hidden meanings (*bāṭin*) in the Qurʾān is a phenomenon that characterizes Shīʿī thought and some branches of Sufism<sup>11</sup>. It was present in fourth-/tenth-century al-Andalus with the Neoplatonic mystic Ibn Masarra (d. 319/931) and his followers<sup>12</sup>. “Religious esotericism” is beyond the scope of this study; however, there is another kind of esotericism, namely “scientific esotericism,” which is not so different from the religious kind and is part of the

7. That is, 26 in astrology and 17 in astronomy. Mathematical astronomy was, to a great extent, subordinated to astrology in the sense that it provided the astrologer the exact data that he needed to cast horoscopes.

8. In total, 9. However, it is difficult to discern the exact meaning of «philosophy» when it appears in a biographical entry. Most times it refers to a general knowledge of the rational sciences. There were also a relevant number of scholars (16) who knew logic. The discipline of logic was particularly relevant from the mid-fourth/tenth century onward; see below section 8.

9. That is, 6 in alchemy and 2 in magic.

10. The alleged obligation to secrecy is beyond the scope of this study. There were, however, good reasons for keeping the undertakings of alchemists and magicians secret; these include their purported economic and social consequences, and the fear of reactions in specific social environments. See Ibn Khaldūn, *al-Ibar*, 1:706, about secrecy in alchemy; Y. Marquet, «Sabéens et Ikhwān al-ṣafāʾ (suite et fin)», in *Studia Islamica* 25 (1966), 107, for the reasons the Ikhwān remained silent about the mysteries of the Ṣābiʾans; and R. Forster, «Reaching the Goal of Alchemy or What Happens When You Finally Have Created the Philosophers' Stone», in *Studia Humana* 9 (2020), 43, about the economic reasons for not speaking about alchemy, according to al-Fārābī.

11. With respect to *bāṭin*, I follow the essential ideas contained in D. de Smet, «Esotericism and Exotericism», in *EB*, online: [http://doi.org/10.1163/1573-3912\\_ei3\\_COM\\_26230](http://doi.org/10.1163/1573-3912_ei3_COM_26230) (consulted 25 January 2023); and L. Saif, «What is Islamic Esotericism?», in *Correspondences* 7 (2019): 1–59.

12. See de Callatay, «Philosophy and Bāṭinism in al-Andalus: Ibn Masarra's *Risālat al-iʿtibār* and the *Rasāʾil Ikhwān al-Ṣafāʾ*», in *JSAI* 41 (2014), 300–1 n. 116 for an explanation of why the term *bāṭinī* applies to Ibn Masarra.

very nature of alchemy and magic. As Holmyard points out, alchemy has a dual nature<sup>13</sup>: on the one hand, it is exoteric, for example, if confined to the material procedures for obtaining the “philosopher’s stone”; on the other, alchemy is esoteric if it is performed with the belief that the philosopher’s stone can only be obtained by divine grace. In Holmyard’s words, alchemy “gradually developed into a devotional system where the mundane transmutation of metals became merely symbolic of the transformation of sinful man into a perfect being through prayer and submission to the will of God.” The aspects of alchemy related to belief are expressed in the Arabic tradition in the language of the Neoplatonism and Gnosticism inherited from the Greek tradition and the language of Shī‘ī esotericism that characterizes the most outstanding figure of the first epoch of Arabo-Islamic alchemy, Jābir b. Ḥayyān<sup>14</sup>. Alchemy and its conceptual cognate, magic, are therefore a relevant part of what Saif calls “intellectual esotericism”<sup>15</sup>, which is characterized by the belief that the initiate will be able, through intellectual effort and the guidance of a master instructor, to reach the hidden truths of the physical and metaphysical worlds. Maslama b. Qāsim al-Qurṭubī (d. 353/964)<sup>16</sup> epitomizes this way of thinking, as we can see from two important and well-known works attributed to him<sup>17</sup>: *Ghāyat al-ḥakīm* on magic and *Rutbat al-ḥakīm* on alchemy. In addition, Maslama seems to have introduced the famous *Rasā’il* (*Epistles*) of

13. E.J. Holmyard, *Alchemy* (Harmondsworth 1957), 13–14; see a similar consideration on Arabo-Islamic alchemy in M. Ullmann, *Die Natur - Und Geheimwissenschaften Im Islam* (Leiden 1972), 145.

14. On this complex issue, see the recent works by P. Lory in which he reviews the ideas of Kraus, Corbin, and Marquet: P. Lory, «Aspects de l’ésotérisme chiite dans le Corpus Gābirien: Les trois Livres de l’Elément de fondation», in *al-Qanṭara* 37 (2016), 279–98; and P. Lory, «Ésotérisme shī‘ite et alchimie. Quelques remarques sur la doctrine de l’initiation dans le Corpus Jābirien», in *L’ésotérisme shī‘ite, ses racines et ses prolongements* (Turnhout 2016), 411–22.

15. Saif, «What is Islamic Esotericism?», 37–42.

16. On the author, see M. Fierro, *Historia de los autores y transmisores de al-Andalus*, <https://www.eea.csic.es/red/hata/enlaces.php>, Hadiz ID, 84, Mística ID, 55, Historia ID, 84, Astronomía ID 14, Alquimia ID 1, Filosofía ID 7, Otros ID 94 (consulted 25 January 2023).

17. M. Fierro, «Bāṭinism in al-Andalus. Maslama b. Qāsim al-Qurṭubī (d. 353/964), author of the *Rutbat al-Ḥakīm* and the *Ghāyat al-Ḥakīm* (Picatrix)», in *SI* 84 (1996), 87–112.

the Ikhwān al-Ṣafā' to al-Andalus<sup>18</sup>. In these, De Smet remarks, «the distinction between *ẓāhir* and *bātin* occupies a central place»<sup>19</sup>. According to Maslama's *Ghāyat al-ḥakīm*, alchemy is subsumed in magic<sup>20</sup>, and are two special ways to achieve knowledge of the occult and, more importantly, to transform the physical world through this knowledge. Magic (and alchemy with it), despite its eminently practical nature stands out from other disciplines because magic requires the most thorough knowledge of other philosophical subjects and it enables the practitioner to do what most people would deem impossible<sup>21</sup>. Magic and alchemy were scientific disciplines for the Ikhwān al-Ṣafā' and Maslama, since both are based on natural philosophy, though their theoretical principles are not always Aristotelian<sup>22</sup>. In

18. G. de Callatāy, «Magia en al-Andalus: *Rasā'il Ikhwān al-Ṣafā'*, *Rutbat al-Ḥakīm* y *Ghāyat al-Ḥakīm* (Picatrix)», in *al-Qanṭara* 34 (2013), 297–343; and de Callatāy, «*Rutba* vs *Gāya*: A Reconsideration of the Impact of the *Rasā'il Iḥwān al-Ṣafā'* on Maslama b. Qāsim al-Qurṭubī», in *Arabica* 68 (2021), 1–15, which includes (2 n.2) a thorough bibliography about the subject.

19. D. de Smet, D., «Esotericism and Exotericism», in *EB*, online.

20. Maslama b. Qāsim, *Ghāyat al-ḥakīm*, ed. H. Ritter (Leipzig 1933), 6 last line to 7 line 7: magic is made up of *nīranjāt*, talismans, and alchemy; on this idea, see Ch. Burnett, «The Three Divisions of Arabic Magic», in *Islamicate Occult Sciences in Theory and Practice*, ed. Liana Saif, Francesca Leoni, Matthew Melvin-Koushki, and Farouk Yahya (Leiden 2021), 43–56.

21. On magic according to the Ikhwān, see the edition and translation by G. de Callatāy and B. Halflants of epistle 52a, *On Magic I: An Arabic Critical Edition and English Translation of Epistle 52a* (Oxford 2011), introduction.

22. On magic and alchemy in the classifications of the sciences by the Ikhwān and Maslama, see D. de Callatāy, «Encyclopaedism on the Fringe of Islamic Orthodoxy: The *Rasā'il Ikhwān al-Ṣafā'*, the *Rutbat al-ḥakīm* and the *Ghāyat al-ḥakīm* on the Division of Science», in *Asiatische Studien – Études Asiatiques* 77 (2014), 857–77; and de Callatāy, «Dividing Science by Ten», in *SI* 115 (2020): 1–32. With respect to magic as a discipline based on the sciences of nature according to the Ikhwān al-Ṣafā', see P. Lory, «La magie chez les Iḥwān al-ṣafā'», in *BEO* 44 (1992), 147–59. For a wider perspective that includes *Ghāyat al-ḥakīm*, see L. Saif, «From *Gāyat al-ḥakīm* to *Šams al-ma'ārif*: Ways of Knowing and Paths of Power in Medieval Islam», in *Arabica* 64 (2017), 297–345; and Saif, «A Study of the Ikhwān al-Ṣafā's Epistle on Magic, the Longer Version (52b)», in *Islamicate Occult Sciences in Theory and Practice* (Leiden 2021), 162–204. On magic according to *Ghāyat al-ḥakīm*, see T. Fahd, «Sciences naturelles et magie dans *Ghāyat al-Ḥakīm* du Pseudo-Mağrīṭī», in *Ciencias de la naturaleza en al-Andalus. Textos y Estudios. I*, ed. Expiración García Sánchez (Granada 1990), 11–22; J. Samsó, *Las ciencias de los antiguos en al-Andalus* (Almería 2011), 261–64, and the bibliography mentioned there. Regarding the echoes of the Arabic tradition in medieval Europe, see Ch. Burnett, «Talismans: Magic as Science? Necromancy among the Seven Liberal Arts», in *Magic and Divination in the Middle Ages*, ed. Ch. Burnett (Aldershot 1996); and Ch. Burnett, «Arabic Magic: The Impetus for



this regard, alchemy and magic may be seen as esoteric insofar as they go beyond and delve more deeply into the very limits of the usual paradigms, particularly Aristotelian natural philosophy.

What was the opinion of those who did not belong to the circle of initiates? The status of the controversial disciplines was also highly contentious epistemologically among the most outstanding philosophers<sup>23</sup>:

- (1) al-Kindī accepted magic and astrology but not alchemy<sup>24</sup>;
- (2) Ibn Sīnā accepted magic but neither alchemy nor astrology<sup>25</sup>;
- (3) al-Fārābī accepted alchemy but not astrology<sup>26</sup>;
- (4) Ibn Bājja did not accept astrology<sup>27</sup>; and
- (5) Ibn Rushd criticized astrology<sup>28</sup>.

Translating Texts and Their Reception», in *The Routledge History of Medieval Magic*, ed. Sophie Page and Catherine Rider (New York 2019), 71–84.

23. Besides the bibliography that follows, see a summary of the ideas of some outstanding scholars regarding alchemy in Ullmann, *Die Natur*, 249–55; and, regarding astrology, in G. Saliba, «The Role of the Astrologer in Medieval Islamic Society», in *BEO* 44 (1992), 45–47.

24. As is well known, al-Kindī, in his *De Radiis*, one of the sources of the *Ghāyat al-ḥakīm*, gives the theoretical fundamentals of talismans (Samsó, *Las ciencias*, 263). With respect to al-Kindī and astrology, P. Adamson, «Abū Maʿšar, al-Kindī and the Philosophical Defense of Astrology», in *Recherches de théologie et philosophie médiévales* 69 (2002), 245–70. Regarding al-Kindī and alchemy, see T. Inoue, «Al-Kindī's Attack on Alchemy and his Perfume Making», in *Orient* 52 (2017), 79–92.

25. On Ibn Sīnā and magic, see M. S. Noble, *Philosophising the Occult: Avicennan Psychology and «The Hidden Secret» of Fakhr al-Dīn al-Rāzī* (Berlin 2021), 22; and Burnett, «Three Divisions», 43–45. On Ibn Sīnā and alchemy, see G. Anawati, «Avicenne et l'alchimie», in *Oriente e Occidente nel Medioevo: filosofia e scienze* (Rome 1971), 285–341. About Ibn Sīnā and astrology, see Y. Michot, *Avicenne: Réfutation de l'astrologie* (Beirut 2006).

26. Regarding astrology and al-Fārābī, see T. A. Druart, «Astronomie et astrologie selon al-Fārābī», in *Bulletin de Philosophie Médiévale* 20 (1977), 43–47; T. A. Druart, «Le second traité de Fārābī sur la validité des affirmations basées sur la position des étoiles», in *Bulletin de Philosophie médiévale* 21 (1979), 41–51; and D. Janos, *Method, Structure, and Development in al-Fārābī's Cosmology* (Leiden 2012), 44–57. On al-Fārābī and alchemy, see Forster, «Reaching the Goal», 43–44; and Ullmann, *Die Natur*, 250.

27. M. Forcada, «Astrology in al-Andalus during the 11th and 12th Centuries: Between Religion and Philosophy», in *From Masha'allah to Kepler: The Theory and Practice of Astrology in the Middle Ages and the Renaissance* (Ceredigion, Wales 2015), 169.

28. Saliba, «The Role of the Astrologer», 46–47; Forcada, «Astrology in al-Andalus», 169–70; and M. Forcada, «Didactic Poems on Medicine and Their Commentaries in Medieval al-Andalus and Western Islam», in *Suhayl*, 18 (2020–21), 174–75.

We still lack a study contrasting the arguments employed in these criticisms and defenses. However, it seems that, first, a discipline that does not fit exactly into a preconceived idea of what science should be was easy to question from the perspective of Aristotelian natural philosophy and the scientific method. Moreover, it appears that the nature and content of the criticism depends as much on ideology and belief as it does on philosophical reasoning. The portrayal of sciences and scientists given by Ibn Juljul (ca. 332–84/943–94) is a good source by which to evaluate the opinion of Andalusī scientists on the controversial disciplines. Ibn Juljul is one of the best examples of the scholars who contributed the most to the sciences that flourished during the Umayyad caliphate. He was a well-trained physician who served the dynasty, along with many other outstanding physicians. Ibn Juljul and his peers, like Ḥasdāy b. Shaprūt, Aḥmad b. Yūnus al-Ḥarrānī, Muḥammad b. ‘Abdūn al-Jabalī, Ibn al-Kattānī, and others followed the ideal of the “physician-philosopher” defined by Galen in *Quod optimus medicus sit quoque philosophus*. As such, they studied and practiced not only medicine but other rational sciences like astronomy, mathematics, and logic. As is well known, in 377/987, Ibn Juljul wrote *Kitāb ṭabaqāt al-aṭibbā’ wa-l-ḥukamā’*, a bio-bibliographical treatise on physicians, philosophers, and other scholars such as Ptolemy, dating back to antiquity. The treatise provides a unique testimony on Andalusī scientists who lived between the third/ninth and fourth/tenth centuries<sup>29</sup>. Thus, it may be seen to reflect what a significant number of Andalusī scholars considered good science. Notably, magic is absent from this book<sup>30</sup>, and alchemy and astrology are only referred to marginally<sup>31</sup>. The biog-

29. On this book, see J. Vernet, «Los médicos andaluces en el *Libro de las generaciones de los médicos* de Ibn Yūlūl», in *Anuario de Estudios Medievales* 5 (1968), 445–62, reprinted in Vernet, *Estudios sobre historia de la ciencia medieval* (Barcelona 1979); Balty-Guesdon, *Médecins*, 40–48; M. Forcada, «Biografías de científicos», in *Estudios onomástico-biográficos de al-Andalus* 8 (Madrid 1997): 201–48; and C. Álvarez Millán, «Medical Anecdotes in Ibn Juljul’s Biographical Dictionary», in *Suhayl* 4 (2004), 141–58.

30. See particularly the biographies of al-Kindī and Thābit b. Qurra, in which there is no reference at all to books like al-Kindī’s *De Radiis* or Thābit’s *De Imaginibus*; Ibn Juljul, *Kitāb ṭabaqāt al-aṭibbā’*, ed. F. Sayyid (Cairo 1953), 73–75.

31. Ibn Juljul, *Ṭabaqāt al-aṭibbā’*, 10, 73, and 75–78: alchemy and astrology are mentioned in passing in the biographies of Hermes III and Abū Bakr al-Rāzī (alchemy), and Thābit b. Qurra and Qūstā b. Lūqā (astrology, *tanjīm*). Regarding al-Kindī, Ibn Juljul mentions *hay’a* and *‘ilm al-nujūm* (cosmology and astronomy) but not *tanjīm*.

raphy of the “three Hermes,” which is the sole concession to the most esoteric authors and sources, is said to have been borrowed from Abū Ma’shar’s *Kitāb al-ulūf*<sup>32</sup>, as if Ibn Juljul wanted to make it clear that he did not read these kinds of books. The fact that Ibn Juljul wrote *Ṭabaqāt al-aṭṭibā’* around the time al-Manṣūr (shortly before 379/989)<sup>33</sup> was destroying books seems to be particularly significant. One may assume that the author was forced to censor himself, but in fact, he wrote at length about the philosophers whose books were being destroyed. Considering Balty-Guesdon’s hypothesis that the *Ṭabaqāt aṭṭibā’* was a deliberate manifesto against al-Manṣūr’s attitude and in favor of the cultural policy of ‘Abd al-Raḥmān III and al-Ḥakam II<sup>34</sup>, Ibn Juljul’s reluctance to approach the controversial disciplines was probably conscious and deliberate. Ibn Juljul’s and Maslama b. Qāsim’s conceptions of *ḥakīm* and *ḥikma* were by no means the same, as shown in the introduction of the *Rutba*. Maslama wrote about those who pretended to be philosophers but were not; that is<sup>35</sup>, those who studied mathematics and astronomy and considered themselves “philosophers” but ignored everything about true knowledge; those who warned students against true knowledge because they believed that they would infringe on the limits of religion; and those who claimed to be philosophers but only understood a small number of books. In addition, he considered Hermes to be the embodiment of symbolic and transcendent knowledge. These “mediocre philosophers” might have been physicians such as Ibn Juljul and his colleagues. Maslama acknowledged that they represented the majority that dictates what science is. More than two centuries later, Ibn Ṭufayl said more or less the same about the scholars of the fourth/tenth century<sup>36</sup>. However, it is worth noting that, thirty years before Ibn Juljul’s *Ṭabaqāt* was written, Maslama b. Qāsim wrote his treatises for a community that

32. Ibn Juljul, *Ṭabaqāt al-aṭṭibā’*, 5; K. Van Bladel, *The Arabic Hermes: From Pagan Sage to Prophet of Science* (New York 2009), 123–27 and 159–61.

33. Balty-Guesdon, *Médecins*, 240.

34. Balty-Guesdon, *Médecins*, 46–47; and M-Th. Balty-Guesdon, «Les *Ṭabaqāt al-aṭṭibā’ wa-l-ḥukamā’*: une condamnation du régime amiride», in *Cahiers d’Onomastique Arabe* (1988-1992) (Paris 1993), 49–59.

35. Maslama b. Qāsim, *Rutbat al-ḥakīm*, ed. W. Madelung (Zurich 2016), 16–20.

36. M. Forcada, *Ética e ideología de la ciencia. El médico filósofo en al-Andalus (siglos X-XII)* (Almería 2011), 14–16.

firmly believed (or perhaps tended to believe) in the scientific nature of magic and alchemy. As we see below, it is likely that most members of this community had a sound knowledge of the rational sciences<sup>37</sup>.

### *The Precedents*

From the early third/ninth century onward, Umayyad society developed a relatively rich scientific and philosophic culture based on the works translated or written in the main intellectual centers of Islam, especially Baghdad and Kairouan. The leader of this process was the emir 'Abd al-Raḥmān II (r. 206–38/822–52), who ordered that books be brought to al-Andalus and disseminated among his subjects<sup>38</sup>. Astrology was the most important subject for the emir, but he also brought books on other disciplines, such as medicine, music, and philosophy, and his courtiers also studied and disseminated works on philosophy and rational theology. Since these disciplines were spread within the framework of a general policy based on the imitation of the 'Abbāsīd court in Baghdad, the emirs were likely driven by political motives. Such motives might have included the legitimizing role that the 'Abbāsīds attributed to astrology, and the replication of the policies implemented by al-Ma'mūn (r. 198–218/813–33) to strengthen caliphal authority over religious discourses by disseminating disciplines based on reason<sup>39</sup>. Andalus religious scholars reacted rapidly and harshly and the followers of reason eventually lost. The successor of 'Abd al-Raḥmān II, Muḥammad (r. 238–73/852–86), dramatically changed the court's attitude toward astrology and strongly emphasized piety and religion<sup>40</sup>. The general situation of al-Andalus worsened in comparison

37. We speak more about the practice of magic and alchemy in sections 8 and 9. For the moment, suffice it to remark that it is difficult to refute Maslama b. Qāsim's status as the preceptor of the Umayyad emirs. About Maslama's role as a preceptor, see J. Ch. Coulon, *La Magie en terre d'islam au Moyen Âge* (Paris 2018), 158–62; he characterizes *Ghāyat al-ḥakīm* as a treatise on *adab* addressed to the court.

38. Forcada, «Astronomy», 1–74; see below section 6.

39. M. Forcada, «Books from Abroad: The Evolution of Science and Philosophy in Umayyad al-Andalus», in *Intellectual History of the Islamicate World* 5 (2017), 59–60.

40. M. Forcada, «Ibn 'Abd Rabbihi: *Adab* and the Rational Sciences», in

to the preceding epoch and then became even worse when the infamous *fitna* of the Banū Ḥaḥṣūn started in 264/878<sup>41</sup>. The worse the circumstances became, the less money the emir had for patronage, and the more he needed the support of religious scholars; this led to less support for controversial disciplines. After the emirate of the short-lived al-Mundhir (r. 273-5/886-8), another of Muḥammad's sons, 'Abdallāh (r. 275-300/888-912), ruled at the most difficult time in the history of the Umayyad period. In a context of general rebellion and low tax revenues, the emir faced enemies who promoted an alternative religiosity against the established religion. 'Abdallāh bore the brunt of Ibn Ḥaḥṣūn's *fitna*, which put Cordoba in serious jeopardy. Moreover, 'Abdallāh faced the threat of the Fāṭimid caliphate that emerged in Ifrīqiya in 296/909. The Fāṭimids tried to spread their movement into al-Andalus by allying themselves with the Banū Ḥaḥṣūn<sup>42</sup>. Furthermore, Ibn al-Qiṭṭ (d. 288/901), a descendant of the Umayyad emir Hishām I (r. 172-80/788-96), proclaimed himself the *mahdī* and tried to overthrow 'Abdallāh under the inspiration of the ascetic Abū 'Alī l-Sarrāj (fl. between late third/ninth and early fourth/tenth century) and with the material support of Berber troops<sup>43</sup>. In this context, 'Abdallāh did the same as his father: he projected an image of himself as a very pious man and sought the support of religious scholars<sup>44</sup>. As a consequence, the controversial

*Connected Stories: Contacts, Traditions and Transmissions in Premodern Mediterranean Islam*, ed. Cristina de la Puente and Mohamed Meouak (New York 2022), 133-34.

41. The word *fitna* refers, in general, to phenomena of civil war or serious internal dissension. There are many events that can be considered a *fitna*, but between the late third/ninth and the early tenth/ fourth century there were two major *fitnas* in al-Andalus: first, the *fitna* of the Banū Ḥaḥṣūn, hereinafter the «first *fitna*», which lasted until 303/916; and second, the *fitna* that put an end to the Umayyad dynasty at the beginning of the fifth/eleventh century, hereinafter the «second *fitna*». See section 6.

42. V. Martínez Enamorado, «Fatimid Ambassadors in Bobastro: Changing Religious and Political Allegiances in the Islamic West», in *JESHO* 52 (2009), 267-300.

43. On Ibn al-Qiṭṭ, see Fierro, *Heterodoxia*, 106-11; M. Fierro, «¿Hubo propaganda fatimí entre los Kutāma andalusíes?» in *al-Qanṭara* 25 (2004), 239-43; E. Manzano, *La frontera de al-Andalus en época de los Omeyas* (Madrid 1991), 253-57; and Martínez Enamorado, «Fatimid Ambassadors», 274-75. Even though Ibn al-Qiṭṭ was a messianic leader it is unclear whether or not he adopted Fāṭimid views.

44. Ibn Ḥayyān, *Muqtabis III*, ed. M. M. Antuña (Paris 1937), esp. 33-38.

disciplines were not mentioned in the court, nor in connection with the courtiers, and Ibn Masarra had to flee al-Andalus under accusations of heresy<sup>45</sup>. The dynasty's capacity for patronage collapsed and poets left Cordoba for Seville because the local ruler, Ibrāhīm b. Ḥajjāj (d. 298/910), paid them better<sup>46</sup>. Although this flight of talent was attributed to the emir's tight-fistedness, Ibn Ḥayyān openly stated that the reason for his reputation of stinginess was the lack of revenue caused by the *fitna*<sup>47</sup>.

These circumstances suggest another reading of the passage of *Rutbat al-ḥakīm* used by Dozy in his effort to refute that Maslama al-Majrīṭī (d. 395 or 398/1005 or 1007–8) wrote the *Ghāyat* and *Rutbat al-ḥakīm*<sup>48</sup>. Maslama b. Qāsim said that he wrote the *Rutba* between 339/950 and 342/953<sup>49</sup>, when, after the *fitna*, the “mediocre philosophers” hegemonized intellectual activity and many scholars abandoned Cordoba. Dozy assumed that Maslama b. Qāsim meant the second *fitna*, which caused a sudden decline in the living conditions of Cordobans and tragic episodes such as the ransacking (in 403/1013) perpetrated by mercenaries fighting for the pretender to the throne al-Mustaʿīn, during which a significant number of scholars were killed and most others, particularly Jews, fled. In consequence, Dozy concluded that Maslama al-Majrīṭī could not be the author, but rather it had to be someone who was active in the mid-fifth/eleventh century. The *fitna* Maslama b. Qāsim mentioned does not necessarily refer to the dramatic setting of the second *fitna*, but rather to the particular combination of several negative circumstances of the first *fitna* that lasted nearly forty years (264–303/878–

45. Ibn al-Faraḍī, *Tārīkh ʿulamāʾ al-Andalus*, ed. I. al-Abyārī (Cairo/Beirut 1989), 1:687, no. 1202; Fierro, *Heterodoxia*, 113–18.

46. Ibn Ḥayyān, *Muqtabis III*, 12; see R. Dozy, *Histoire des musulmans en Espagne* (Leiden 1932), 2:90–91.

47. Ibn Ḥayyān, *Muqtabis III*, 39. The *fitna* alluded to here may be that of Ibn al-ʿAfṣar, but the historian may also have been referring more generically to the large number of smaller rebellions that ʿAbdallāh faced.

48. Maslama b. Qāsim, *Rutbat al-ḥakīm*, 16. Regarding this passage, see Forcada, «Books», 63–64.

49. R. Dozy, «Nouveaux documents pour l'étude de la religion des Harariens», in *Actes du sixième Congrès international des orientalistes tenu en 1883 à Leide* (Leiden 1985), 285–89. Other manuscripts state 439/1047 and 442/1050. About these dates and Dozy's argumentation see Fierro, «Bāṭinism», 93–94 and section 8 below.

916). Therefore, Maslama expressed the contrast between the idealized memory of the good times of ‘Abd al-Raḥmān II and the less prosperous times of the following emirs that are analyzed below<sup>50</sup>.

*The Rational Sciences between the First Fitna and the Advent of the Caliphate: At the Margins*

As we saw in the previous section, although there were no significant reactions against the rational sciences like al-Manṣūr’s persecution or the active opposition of religious scholars in the epoch of ‘Abd al-Raḥmān II, these disciplines were marginalized and attributed to marginal individuals. The best testimony of what could be considered an official discourse on the rational sciences appears in the works of Ibn ‘Abd Rabbihi (246–328/860–940)<sup>51</sup>. He was more than just a court poet; he had received sound religious training from many teachers, including Andalusī disciples of Aḥmad b. Ḥanbal. From his position as head of the court poets, he cultivated a remarkable influence over learned Cordobans, for whom he wrote one of the most important treatises on *adab* in Arabic literature, *al-‘Iqd al-Farīd*. The work may have been written around the time ‘Abd al-Raḥmān III proclaimed the caliphate (316/929). Given that Ibn ‘Abd Rabbihi joined the court in the last days of the emirate of Muḥammad, the *‘Iqd* may be considered a reflection of the cultural atmosphere of ‘Abdallāh’s emirate and the beginning of the reign of ‘Abd al-Raḥmān III. The work refers to the rational sciences in several passages. On the one hand, Ibn ‘Abd Rabbihi deals at some length with certain medical subjects, particularly diet, saying that a good Muslim subject of the ruler should be knowledgeable about these matters<sup>52</sup>. Ibn ‘Abd Rabbihi also used positive terms when mentioning Greek astronomy describing the heavens<sup>53</sup>. On the other hand, philosophy, rational theology, alchemy, and astrology

50. See below sections 4–5.

51. On Ibn ‘Abd Rabbihi’s stance toward the rational sciences, see Forcada, «Ibn ‘Abd Rabbihi».

52. Ibn ‘Abd Rabbihi, *al-‘Iqd al-Farīd*, ed. Aḥmad Amīn, Aḥmad al-Zayn, and Ibrāhīm al-Abyārī (Cairo 1940–53), 6:277–80 and 6:290–97; and Forcada, «Ibn ‘Abd Rabbihi», 141–43.

53. Ibn ‘Abd Rabbihi, *al-‘Iqd*, 3:405; Forcada, «Ibn ‘Abd Rabbihi», 144.

were criticized in general terms<sup>54</sup>. Ibn ‘Abd Rabbihi also wrote two poems of an anti-astrological nature<sup>55</sup>. One refers to an astrological session held in the private home of a notable Umayyad general, Muḥammad b. al-Jahwar al-Bukhtī, at some time in the late third/ninth century. Another poem criticizes an Andalusī Shāfi‘ī religious scholar named Abū ‘Ubayd al-Balansī (d. 295/907 or 304/916) and nicknamed “Ṣāḥib al-Qibla.” Our interest in these poems is the way they speak of astrology in a marginal context. In the poem, a glorious general consults astrologers (away from the curious eyes and ears of the court, perhaps clandestinely in the general’s home) on a subject related to governance at home. A young Ibn ‘Abd Rabbihi, who finds out about this meeting by chance, admonishes the veteran general about the futility of astrology. Abū ‘Ubayd al-Balansī had a thorough knowledge of astronomy, natural philosophy, and theology and was probably able to determine with some accuracy the direction of the *qibla*<sup>56</sup>. Ibn ‘Abd Rabbihi criticizes him for practicing astrology and professing his belief in Mu‘tazilī thought. Abū ‘Ubayd did not belong to courtly circles nor was he a relevant religious scholar of his time. He was only a member of a secondary school in al-Andalus, a Shāfi‘ī, to whom Ibn ‘Abd Rabbihi taught what is lawful and unlawful in rational disciplines<sup>57</sup>.

Ibn Masarra is another good example of the general association of astrology and other controversial disciplines to what is considered marginal in the broad sense of the word. The biographer Ibn al-Faraḍī (351-403/962-1013) described him as a “wise philosopher, physician, astrologer and astronomer” (*kāna ... faylasūfan ‘alīman wa-ṭabībān wa-munajjiman falakiyyan*)<sup>58</sup>. This statement is consistent

54. Ibn ‘Abd Rabbihi, *al-Iqd*, 2:208, and 2:257; Forcada, «Ibn ‘Abd Rabbihi», 146-48. See also the section on Mu‘tazilism and, more particularly, the text borrowed from al-Kindī in *al-Iqd*, 2:382-83; Forcada, «Ibn ‘Abd Rabbihi», 149-50.

55. J. Samsó, «Alfonso X y los orígenes de la astrología hispánica», in *Estudios sobre historia de la ciencia árabe*, ed. J. Vernet (Barcelona 1980), 100-1; Forcada, «Ibn ‘Abd Rabbihi», 136-41.

56. J. Samsó, *On Both Sides of the Strait of Gibraltar: Studies in the History of Medieval Astronomy in the Iberian Peninsula and the Maghrib* (Leiden 2020), 131-32.

57. The poem is transmitted by Sa‘īd al-Andalusī, *Kitāb Ṭabaqāt al-umam*, ed. Ḥ. Bū ‘Alwān (Beirut 1985), 160-61. Sa‘īd criticizes the critic, implying that Ibn ‘Abd Rabbihi was ignorant.

58. Ibn Ḥayyān *Muqtabis V*, ed. P. Chalmeta (Madrid 1979), 31 quoting Ibn al-Faraḍī’s *Tārīkh ‘ulamā’ al-Andalus*, where this sentence does not appear.



with the intellectual background of Ibn Masarra's works and the ultimate purposes of "religious *bāṭinī* thought"<sup>59</sup>. Yaḥyā b. Yaḥyā b. al-Samīna (d. 315/927)<sup>60</sup> is yet another religious scholar with a similar intellectual profile. He was a Mu'tazilī theologian with a sound knowledge of astronomy, astrology, and medicine who, like Ibn Masarra, went to the East and returned. The abovementioned Ibn al-Qiṭṭ was a different type of outsider. In his novelistic biography, the controversial disciplines are an essential element, as summarized by Ibn al-Abbār<sup>61</sup>:

He belonged to the people interested in science and art (*ṣinā'ā*)<sup>62</sup>, astrology (*nijāma*) and the configuration of the heavens (*hay'a*). He appeared in the days of the emir 'Abdallāh b. Muḥammad, [days] that were so shaken by the *fitna*, [in which he] claimed the throne for himself, manifested the *ḥiṣba* and the wish to fight the infidels<sup>63</sup>, even though he made predictions (*yatakahhanu*) and he pretended to be another (*yumawwihu*)<sup>64</sup>.

Ibn al-Abbār's text pieces together several passages from Ibn Ḥayyān's *Muqtabis III*, whose sources are authors who flourished in the fourth/tenth century. In particular, Ibn al-Abbār's mention of Ibn al-Qiṭṭ's knowledge of astronomy and astrology stems from the lost *Kitāb al-nasab*<sup>65</sup> written by a historian who, like Ibn al-Qiṭṭ, was descended from emir Hishām, Mu'āwiya b. Hishām al-Marwānī

59. With respect to the philosophical background of Ibn Masarra, see R. Ramón Guerrero, «Ibn Masarra, gnóstico y místico andalusí», in *Las raíces de la cultura europea*, ed. José Solana Dueso Elvira Burgos Díaz and Pedro Luis Blasco Aznar (Zaragoza 2004), 224–40; P. Garrido Clemente, «¿Era Ibn Masarra de Córdoba un filósofo?», in *Anaquel de estudios árabes* 21 (2010), 123–40; and the recent article by J. Bellver, «The Beginnings of Rational Theology in al-Andalus: Ibn Masarra and His Refutation of al-Kindī's *On First Philosophy*», in *al-Qanṭara* 41 (2020), 323–71, which contributes very interesting nuances.

60. Ibn al-Faraḍī, *Tārīkh*, 3:913, no. 1578; Ṣa'īd al-Andalusī, *Ṭabaqāt al-umam*, 161–62; Fierro, *Historia de los autores*, Corán, ID 40, Dogmática, ID 12, Historia, ID 43, Otros, ID 54.

61. Ibn al-Abbār, *al-Ḥulla al-siyarā'*, ed. Ḥ. Mu'nis (Cairo 1963), 2:368, no. 199.

62. Balty-Guesdon, *Médecins*, 29–30, understands art as alchemy. See below note 64.

63. He died while laying siege to the Christian city of Zamora.

64. Balty-Guesdon interprets *yumawwihu* as gilding or silvering an object made of bronze, from this she suggests that Ibn al-Qiṭṭ knew alchemy. In my opinion, the meaning «to pretend to be another» makes more sense because Ibn al-Qiṭṭ pretended to be the *mahdī*.

65. Ibn Ḥayyān, *Muqtabis III*, 139.

l-Shabānisiyya, or al-Shabānāsī (fl. from the late third/ninth century to the early fourth/tenth century)<sup>66</sup>. Ibn al-Abbār's mention of Ibn al-Qiṭṭ's abilities to make accurate predictions appears in two passages of the *Muqtabis*, in which it is said that the pretender would make predictions to convince the Berbers of his charismatic leadership and to encourage them in important battles, such as the siege of Zamora<sup>67</sup>. In spite of the legendary background of these stories, there must be an element of truth behind them, considering that Ibn Hishām al-Shabānisiyya lived around the time of the events and would have had knowledge of the Umayyad context. Ibn al-Qiṭṭ and al-Shabānāsī are descendants of the first emir who had an astrologer in his service<sup>68</sup>. Therefore, Ibn al-Qiṭṭ's practice of astrology and possibly other controversial arts is not a tale invented to embellish or tarnish a reputation, but rather a story that describes a common activity of the Umayyad elite, one which was, however, disapproved of in this period, as also shown by the story of Muḥammad b. al-Jahwar al-Bukhtī.

*The Rational Sciences between the First Fitna and the Advent of the Caliphate: The Uncontroversial Disciplines*

The data on scientific activity in the emirate of 'Abdallāh and the periods that immediately preceded and followed it are consistent with the situation described above. There were few scholars and the vast majority of them knew or practiced uncontroversial disciplines such as the division of inheritance or medicine<sup>69</sup>. Under 'Abdallāh, a new generation of physicians emerged and went on to flourish in the period of 'Abd al-Raḥmān III. The most important of these, Sa'īd b. 'Abd Rabbihi (d. 332/942-3, or 342/953-4, or 356/966-7), is mentioned for the first time as a poet in the court of 'Abdallāh<sup>70</sup>.

66. J. Lirola, «Ibn Hišām al-Marwānī, Mu'āwiya», in *Biblioteca de al-Andalus* (Almería 2004-12), 3:468-70.

67. Ibn Ḥayyān, *Muqtabis III*, 133 and 135, quoting 'Īsā b. Aḥmad al-Rāzī (fl. second half of the fourth/tenth century).

68. Samsó, *Las ciencias*, 29.

69. See the following works: Balty-Guesdon, *Médecins*, 597-638 (general); D. Lamrabet, *Introduction à l'histoire des mathématiques maghrébines* (Rabat 2014), 49-66 (mathematics and astronomy); M. al-Khaṭṭābī, *al-Ṭibb wa-l-aṭibbā' fi l-Andalus al-Islamiyya* (Casablanca 1988), 1:39-48 (medicine).

70. Ibn Ḥayyān, *Muqtabis III*, 47.

Besides being a professional physician skilled in the practice and theory of medicine, with a good knowledge of natural philosophy, he was a religious scholar of some note<sup>71</sup>. Another good example of how science may have fit in a religiously oriented context is *Kitāb al-hay'a*, the cosmological treatise written by the religious scholar Qāsim b. Muṭarrif, who flourished in the first half of the fourth/tenth century<sup>72</sup>. The contents of the book<sup>73</sup> are compatible with accepted religious norms: first, there is a description of the heavens based on Ptolemaic astronomy with hints of natural philosophy; second, there are procedures and devices for determining the time. Sa'īd b. 'Abd Rabbihi and Qāsim b. Muṭarrif are good examples of the "mediocre philosophers" alluded to by Maslama b. Qāsim in his *Rutbat al-ḥakīm*.

71. See R. Kuhne Bravant, «Ibn 'Abd Rabihi, Abū 'Uṭmān», in *Biblioteca de al-Andalus* (Almería 2004-12), 1:629-33. He wrote a didactic poem on medicine addressed to 'Abd al-Raḥmān III that was probably intended to make the fundamentals of Galenic medicine accessible to the learned circles of the court. Ibn Sa'īd al-Maghribī, *al-Mughrib fī ḥulā l-Maghrib*, ed. Sh. Ḍayf (Cairo 1955), 1: 121, gives a funny story about Sa'īd b. 'Abd Rabbihi: 'Abd al-Raḥmān III summoned him to study the sciences of the ancients together. However, Sa'īd addressed him using coarse and colloquial language and the caliph expelled the physician from his presence. The anecdote does not seem very credible, but it suggests the caliph's interest in the sciences.

72. The author is identified as the traditionist Abū Muḥammad Qāsim b. Muṭarrif b. 'Abd al-Raḥmān al-Qaṭṭān, whose biography is given in Ibn al-Faraḍī, *Tārīkh*, 616, no. 1074. Or he may be Qāsim b. Muṭarrif al-Ṭulayṭūlī mentioned by Ibn Ḥajar al-'Askalānī, *Lisān al-mīzān*, ed. 'A. Abū Ghudda (Beirut 2002), 6:383, no. 6133. According to Ibn Ḥajar, he went to Egypt (to al-Qulzum), where he studied under the religious scholar Khayr b. 'Arafa (d. 283/896-97). Ibn Ḥajar also says that Maslama b. Qāsim was in some way a disciple of Qāsim b. Muṭarrif. It is by no means certain that the two Qāsim are one and the same person. Ibn al-Faraḍī says that Qāsim was a Cordoban born in Málaga whereas Ibn Ḥajar says that he was from Toledo. The list of Qāsim's teachers differs in the two sources. He lived long enough to know Maslama al-Majrīṭī because his *Kitāb al-hay'a* mentions astronomical observations made by «Maslama b. Aḥmad» at a date that is most uncertain (on the date, see Samsó, *On Both Sides*, 504-5). According to M. Comes, «Ibn Muṭarrif al-Qaṭṭān, Qāsim», in *Biblioteca de al-Andalus*, ed. Jorge Lirola Delgado and José Miguel Puerta Vilchez (Almería 2004-12), 4:304, in which there is an extensive discussion of the dating of Qāsim b. Muṭarrif, he may have lived between 261/875 and 364/975.

73. J. Casulleras, «The Contents of Qāsim ibn Muṭarrif al-Qaṭṭān's *Kitāb al-hay'a*», in *The Formation of al-Andalus, Part II: Language, Religion, Culture and the Sciences*, ed. Maribel Fierro and Julio Samsó (Aldershot 1998), 339-58.

*The Rational Sciences in the Caliphate: 'Abd al-Raḥmān III and the Influence of al-Ḥakam*

Ibn Juljul says that the sciences flourished again in al-Andalus under 'Abd al-Raḥmān III<sup>74</sup>. The author seems to suggest that, after the troubles of the first *fitna*, Cordoban society and the court stabilized and their economic situation improved; this positively influenced scientific practice<sup>75</sup>. The attitude of the caliph toward the controversial sciences was contradictory. Astrology was still absent from the palace but the sons of the caliphs received a good education<sup>76</sup> and most of the royal preceptors, including Maslama b. Qāsim, knew the rational sciences<sup>77</sup>. The followers of Ibn Masarra were persecuted by the caliph, not for practicing astrology or philosophy, but in relation to complex religious issues that were only indirectly connected with the rational sciences. There was only one case of persecution for the practice of controversial disciplines, that of Idrīs b. Maytham (or al-Haytham)<sup>78</sup>. Al-Zubaydī (d. 379/989) says that he knew logic, had read the books of the ancients (*awā'il*), was an expert in arithmetic (*ḥisāb*) and astrology (*tanjīm*), and that he was accused of deviating from the religion (*kāna yurmā bi-l-khurūj 'an al-milla*). Al-Zubaydī therefore relates that he was accused of practicing the rational sciences, although not explicitly. We do not know anything more about this persecution, which may have been a local phenomenon in which the ruling dynasty or the religious scholars of Cordoba were not involved<sup>79</sup>. Finally, it should be noted that, in

74. Ibn Juljul, *Ṭabaqāt al-aṭibbā'*, 97–98.

75. Forcada, «Books», 74–76.

76. See, for example, Ibn Ḥayyān, *Muqtabis V*, ed. P. Chalmeta (Madrid 1979), 15–16: 'Abd al-Raḥmān was the most educated prince of the Umayyads and his sons were even more educated. The passages only mention religious and literary matters (*ḥadīth, sunna, ādāb*) but the training included the scientific disciplines.

77. Forcada, «Books», 71.

78. Al-Zubaydī, *Ṭabaqāt al-naḥwiyyīn*, ed. M. A. Ibrāhīm (Cairo 1973), 306–7, no. 286, names him Idrīs b. Maytham; al-Ḥumaydī, *Jadhwat al-muqtabis*, ed. B. A. Ma'rūf and M. B. 'Awwād (Tunis 2008), 239, no. 313, Idrīs b. al-Haytham; see more on him in M. L. Ávila et al., *Prosopografía de los ulemas de al-Andalus*, <https://www.eea.csic.es/pua/> (Granada, s.a.), ID 2127 (consulted 25 January 2023).

79. Al-Zubaydī, who is the original source from whom other biographers quote, says that Ibn Maytham/al-Ḥaytham moved from Seville to Cordoba but

the ruined remains of Madīnat al-Zahrā', traces of the practice and symbolic use of the most controversial disciplines have been found<sup>80</sup>.

Although 'Abd al-Raḥmān III was an active and learned caliph, the flourishing of the sciences is closely associated with the figure of his son, al-Ḥakam II. Šā'id al-Andalusī (d. 462/1070) says that al-Ḥakam, while still a prince, promoted the importation of books to al-Andalus, imitating the most enlightened kings, particularly the 'Abbāsids<sup>81</sup>. Šā'id dates this process "to the end of the first part of the fourth/tenth century," which roughly coincides in time with the proclamation of the Umayyad caliphate (316/929) and the building of the palace city of Madīnat al-Zahrā' (started in 325/936), when the future al-Ḥakam II was about twenty years old. Coincidence or otherwise, after 325/936, Maslama b. Qāsim returned from his long travels in search of knowledge. Perhaps it is no coincidence that some of the most important elements that make up the history of the sciences during the reign of 'Abd al-Raḥmān III occurred in the period when prince al-Ḥakam exerted a decisive influence on the cultural life of the dynasty. Among these elements, we can cite the following.

(1) The revision of the Arabic translation of Dioscorides' *Materia Medica* was the most important scientific project of the caliphate of 'Abd al-Raḥmān III and is a unique example of international and interfaith collaboration<sup>82</sup>.

(2) The appearance at court of a man of science as notable and influential as Ḥasday b. Shaprūt (d. ca. 364/975) led the process of creating a scientific and philosophical culture in the Jewish community and collaborated with the Umayyads and their relations with the Jews of Kairouan and other communities<sup>83</sup>.

does not specify where he was accused. The date of the birth and death of the author are not included in any source. However, since al-Zubaydī includes him in the sixth and last generation of Andalus grammarians, it is likely that most of his life coincided with the caliphate of 'Abd al-Raḥmān III.

80. M. Acien, «Materiales e hipótesis para una interpretación del salón de 'Abd al-Raḥmān III al-Nāsir», in *Madīnat al-Zahrā'*. *El Salón de 'Abd al-Raḥmān III* (Córdoba 1995), 179-95; S. Calvo Capilla, «The Reuse of Classical Antiquity in the Palace of Madīnat al-Zahrā' and Its Role in the Construction of Caliphal Legitimacy», in *Muqarnas* 31 (2014), 1-33.

81. Šā'id al-Andalusī, *Ṭabaqāt al-umam*, 162; Forcada, «Books», 73-76.

82. Samsó, *Los ciencias*, 111-15.

83. Balty-Guesdon, *Médecins*, 182-88; S. Stroumsa, «Between Acculturation and Conversion in Islamic Spain: The Case of the Banū Ḥasday», in *Méditer-*

(3) The *qibla* of the mosque of Madīnat al-Zahrā', built by 'Abd al-Raḥmān III, seems to have been oriented by an expert in mathematical astronomy<sup>84</sup>; he also might have been an astrologer.

Al-Ḥakam II is considered the wisest ruler in the history of al-Andalus and is associated with a library that was thought to have had as many volumes as the library of Alexandria<sup>85</sup>. As indicated, the education of the princes was a matter of the great importance at the court, and al-Ḥakam was renown for his special passion for learning and collecting books. An intellectual biography of al-Ḥakam II has not yet been written<sup>86</sup> and the sources, besides Ṣā'id al-Andalusī, offer scant information about the caliph's contribution to the development of the sciences of the ancients. However, there is some evidence regarding the caliph and the controversial disciplines. For example,

(1) The historian Ibn 'Idhārī (fl. late seventh/thirteenth to early eighth/fourteenth centuries)<sup>87</sup> explains that al-Ḥakam possessed a knowledge of the future (*'ilm al-ḥidhān*)<sup>88</sup> that enabled him to know

*ranea: International Journal for the Transfer of Knowledge* 1 (2016), 11-36; A. López López, «Ibn Ḥasday, Abū l-Faḍl», in *Biblioteca de al-Andalus*, ed. Jorge Lirola Delgado and José Miguel Puerta Vilchez (Almería 2004-12), 3:303-9.

84. Samsó, *On Both Sides*, 139-40, and below, section 7.

85. É. Lévy-Provençal, *Histoire de l'Espagne musulmane, Tome III. Le siècle du Califat de Cordoue* (Paris 1967), 493-50; D. Wasserstein, «The Library of al-Ḥakam al-Mustanir and the Culture of Islamic Spain», in *Manuscripts of the Middle East* 5 (1990-1), 99-105; C. Sánchez-Moliní, «Las bibliotecas y al-Andalus», in *El Saber de al-Andalus. Textos y Estudios II*, ed. J. Carabaza Bravo and A. T. Mohamed Essawy (Seville 1999), 87-89.

86. M. Martínez Antuña, *La Corte literaria de Alhaqen II en Córdoba* (San Lorenzo del Escorial 1929), is still a good approach to the subject; for a recent summary, see M. G. al-Wasif, «al-Mustanšir al-Ḥakam», in *Biblioteca de al-Andalus*, ed. Jorge Lirola Delgado and José Miguel Puerta Vilchez (Almería 2004-12), 6:590-98.

87. Ibn 'Idhārī, *Bayān*, ed E. Lévi-Provençal and G. S. Colin (Paris 1949-51), 2:257-58.

88. Ibn 'Idhārī, *Bayān*, 2:257, has *naẓar bi-l-ḥadathān* and mentions the procedure described by M. Marín, «*'Ilm al-nuṣūm* e *'ilm al-ḥidhān* en al-Andalus», in *Actas del XII congreso de la UEA (Málaga 1984)* (Madrid 1986), 509-35, at 514: foreknowledge of future events is sometimes gained through the interpretation of external signals that exist in the body of the person to whom these facts are attributed. Al-Ḥakam reads the future in the body al-Manšūr; see also J. Samsó, «Astrology, Pre-Islamic Spain and the Conquest of Al-Andalus», in *Revista del*

that al-Manṣūr would usurp the power of the dynasty and build the palace of Madīnat al-Zāhira<sup>89</sup>. Ibn 'Idhārī mentions that al-Manṣūr likely took note of al-Ḥakam's predictions and acted in accordance with them. This part of the story may have an element of truth behind it because it was said that al-Manṣūr continued to consult astrologers after persecuting those who practiced astrology. Clearly, this is a fabricated story that indicates that posterity attributed something more to the caliph than mere erudition. The text is symbolically important because it connects the toughest critic of the controversial sciences with its most conspicuous promoter of the same.

(2) There are several references to astrology, alchemy, and philosophy which are, in general, more objective.

- The caliph had a personal astrologer, Aḥmad b. Fāris<sup>90</sup>, who was especially well established in the court in the 360s/970s<sup>91</sup>, and around him the caliph's astrology began to flourish<sup>92</sup>.

- Al-Ḥakam II tried to hire the services of 'Abdallāh al-Sarī, a mathematician who knew alchemy, but he did not accept to work for the court<sup>93</sup>.

- Ibn Juljul gave a detailed description of the death of Ḥunayn b. Ishāq, which he claimed to have taken from a minister of al-Ḥakam

*Instituto Egipcio de Estudios Islámicos* 23 (1985-86), 79-94; and J. Samsó, «Fue Mūsā ibn Nuṣayr un astrólogo», in *Medievalia* 9 (1990), 231-36, on other figures to which this knowledge (or power) is attributed.

89. This is the palace al-Manṣūr built for himself and his personal court. Ibn 'Idhārī explains that al-Ḥakam knew that there was a particular spot of land on which a palace would be built from which al-Andalus would be ruled and tried to seize it for himself.

90. M. Forcada, «Astrology and Folk Astronomy: The Mukhtasar min al-Anwā' of Aḥmad ibn Fāris», in *Suhayl* 1 (2000), 107-205; and M. Forcada, «Ibn Fāris, Aḥmad», in *Biblioteca de al-Andalus*, ed. Jorge Lirola Delgado and José Miguel Puerta Vilchez (Almería 2004-12), 3:149-50.

91. Al-Umawī l-Qurṭubī, *al-Mustaw'ib al-kāfī*, ed. Yūsuf al-Samadī (Rabat 2019), 217: al-Ḥakam, in 358/968-69, ordered Ibn Fāris to check if Canopus is visible from the shore of Málaga. Ibn Ḥayyān, *Muqtabis VII*, ed. 'A. R. 'Alī l-Ḥajjī (Beirut 1965), 112: in 1 Rabī' al-Awwal 363 (30 November 973), 'Abd al-Karīm, the son of Aḥmad b. Fāris became a valet of the court at the request of his father. Ibn Bassām, *al-Dhakhīra fī maḥāsīn ahl al-jazīra*, ed. I. 'Abbās (Beirut 1979), 4:79; Ibn al-Abbār, *al-Ḥulla*, 1:270; Ibn Sa'īd, *al-Mughrib fī ḥulā l-Maghrib*, ed. Sh. Ḍayf (Cairo 1955), 1: 212-13; Ibn Fāris cast the natal horoscope of al-Muẓaffār, Almanzor's son, born in 364/975.

92. J. Vernet, *El islam de España* (Madrid 1993), 180; Forcada, «Astrology in al-Andalus», 153-54.

93. Ṣa'īd al-Andalusī, *Ṭabaqāt al-umam*, 166.

II, who learned of it from the caliph himself<sup>94</sup>. If al-Ḥakam knew these details about Ḥunayn's death, we can assume that he was also well acquainted with his work, which mostly consisted of the translation of medical and philosophical treatises.

• Less convincing than the previous data, but nonetheless appealing is a letter purportedly written by an emperor of Byzantium to al-Ḥakam II. The emperor states that he sent books on philosophical subjects to a high courtier of the caliph<sup>95</sup>. This letter appeared in a manuscript on the cosmological treatise attributed to Apollonius (Ar. Balīnūs) of Tyana entitled *Kitāb sirr al-khālīqa* or *Kitāb al-ʿilal*. The letter was likely spurious but it fits well in the context of the time: books were sent from Byzantium to al-Andalus, as demonstrated by the revision of the Arabic translation of Dioscorides' *Materia Medica* mentioned above; moreover, the treatises attributed to Apollonius of Tyana and, among them, the *Kitāb sirr al-khālīqa*, are cited in the *Rutbat* and *Ghāyat al-ḥakīm*<sup>96</sup>. *Kitāb sirr al-khālīqa* is a pseudepigraphic treatise possibly written in the time of al-Ma'mūn (r. 198–218/813–33)<sup>97</sup>; thus, it is almost impossible that it was one of the treatises alluded to in the letter. Even if we assume that the letter was added to the manuscript accidentally, it is difficult to take it at face value. However, the fact that an unknown forger thought that some readers may believe what the letter said indicates that al-Ḥakam and his circle had a reputation for having knowledge of the controversial disciplines and that this was well established.

(3) Third, we can cite the introduction of the sciences of the ancients by 'Abd al-Raḥmān II. The account of this event, which is mentioned in the fifth/eleventh century by the historian Ibn Ḥayyān<sup>98</sup>, stems from the historian al-Ḥasan b. Mufarrij (b. 343/954–

94. Ibn Juljul, *Ṭabaqāt al-aṭibbā'*, 69–70.

95. S. M. Stern, «A Letter of the Byzantine Emperor to the Court of the Spanish Umayyad Caliph al-Ḥakam», in *Al-Andalus* 26 (1961), 37–42.

96. E. J. Holmyard, «Maslama al-Majrīṭī and the Rutbatu'l-Hakim», in *Isis* 6 (1924), 299–300; Maslama b. Qāsim, *Ghāyat al-ḥakīm*, 107 and 110.

97. Van Bladel, *The Arabic Hermes*, 170–71.

98. Ibn Ḥayyān, *Muqtabis II/1*, ed. M. 'A. Makkī (Riyadh 2003), 278. Another version of this passage appears in Ibn Faḍlallāh al-ʿUmarī, *Masālik al-abṣār fī mamālik al-amṣār*, ed. K. S. al-Jubūrī and M. al-Najm (Beirut 2010), 24:366. On these texts, see M. Forcada, «Al-Mu'taman ibn Hūd in Context: Kingship and Philosophy in al-Andalus (10th–11th Centuries)», in *SI* 118 (2023), 13–18; and Forcada, «Books», 55. In summary, 'Abd al-Raḥmān II funded his astrologer,



5 or 348/959-60, d. after 430/1038-9), who quotes from an almost unknown author from the first half of the fourth/tenth century named Muḥammad b. Ḥaṣṣ b. Faraj. Al-Ḥakam contributed to recovering the memory of his predecessor. Ibn Ḥayyān transmits from Ibn al-Faraḍī a text written by al-Ḥakam II himself in which he explains that ‘Abd al-Raḥmān II was knowledgeable in the literary and religious disciplines and “philosophy, astronomy, and astrology”<sup>99</sup>. The passage, which seems to refer more to al-Ḥakam himself than to his ancestor, links the caliph with a Cordoban tradition of studying the ancient sciences. It seems as though some Cordobans strove to recover the memory of a society, after the first *fitna*, in which the sciences of the ancients flourished; and that this memory was revitalized after the second *fitna* or after the expurgation of al-Ḥakam II’s library. It is worth noting that the narrative about ‘Abd al-Raḥmān II strongly resembles the stories about the activities of the ‘Abbāsīd caliph al-Ma’mūn.

All in all, there is much more information on the relationship between al-Ḥakam II and the controversial disciplines than there is between him and the uncontroversial disciplines. Therefore, there is little doubt that al-Ḥakam II’s vast erudition included matters such as astrology, philosophy, and alchemy, which were practiced by a significant number of scholars, and that they were tolerated, if not promoted, by his father. Al-Ḥakam II was not alone. His brother ‘Abdallāh was as learned as he was. It is rightly said that initiatives such as the revision of the translation of *Materia Medica* or establishing the library of al-Ḥakam II were devised to affirm the political status of Cordoba and al-Andalus in relation to other centers of power<sup>100</sup>, particularly Baghdad and Kairouan. However, there may be other reasons. Fierro speaks of the impulse toward “Umayyad esotericism,” in which Maslama b. Qāsim was a central author, intended to counter Fāṭimid esotericism<sup>101</sup>. The image of a caliph

poet, and courtesan ‘Abbās b. Nāṣiḥ to bring books from Baghdad on astronomy, astrology, music, medicine, and other disciplines of the ancients; ‘Abd al-Raḥmān II, the crown prince, disseminated them among the people of Cordoba.

99. Ibn Ḥayyān, *Muqtabis II/1*, 279; and Forcada, «Astronomy», 10.

100. Wasserstein, «The Library», 101-3; and Balty-Guesdon, *Médecins*, 158-75.

101. Fierro, «Plants»; and Fierro, «Heresy and Political Legitimacy in al-Andalus», in *Heresy and the Making of European Culture: Medieval and Modern Perspectives*, ed. Andrew P. Roach and James R. Simpson (Farnham 2013), 52-76.

(and a state) endowed with the widest possible knowledge, both religious and rational, may have been thought to counterbalance, on a symbolic level, the presumption of omniscience attributed to the Shī'ī imam. In this regard Fierro says that “ ‘Abd al-Raḥmān III may have allowed ‘Abd Allāh – and perhaps others among his sons – to be initiated in the wisdom Maslama was an expert on as a way of ensuring that his successor could rival the Fatimid caliph’s”<sup>102</sup>. However, ‘Abdallāh tried to use his reputation to rise up against his father and so he was executed in 338/950 or 339/951<sup>103</sup>. The persecution of the Masarrīs and other scholars started immediately afterward; Fierro considers it a consequence of ‘Abdallāh’s rebellion, which forced the caliph to reconsider his attitude toward the controversial disciplines and make concessions to the orthodox<sup>104</sup>. Thus, according to Fierro, the *fitna* alluded to by Maslama would have been in this period<sup>105</sup>. Although Maslama was not persecuted, he belonged to the wrong party; while no source says that he was a Masarrī, he could identify with them. Regardless of whether the *fitna* alluded to by Maslama is this one or the “first *fitna*”<sup>106</sup>, the execution of ‘Abdallāh was a decisive turning-point in Maslama’s life. He was not al-Ḥakam’s man since the caliph profoundly disliked his religious works. Ibn Ḥajar (773–852/1372–1449), one of the best sources on Maslama b. Qāsim<sup>107</sup>, mentions in this regard that Maslama held (in his *Kitāb al-ṣila*) an opinion about al-Karābīsī’s beliefs on the createdness of the Qur’ān that was contrary to al-Ḥakam’s opinion, and that “the caliph criticized this [opinion] of Maslama and said obscenities about the truth of Maslama through-

102. Fierro, «Plants», 138–39.

103. The death of ‘Abdallāh is a curious chapter in the secret and «esoteric» history of the Umayyads, as shown in Fierro «Plants», 139–43. ‘Abd al-Raḥmān III executed ‘Abdallāh personally.

104. Fierro, «Bāṭinism», 109.

105. Fierro «Bāṭinism», 98–99; and Fierro, «Plants», 130–31.

106. Fierro’s hypothesis is a good solution to the problem posed by the *fitna* and makes sense in the biography of Maslama. However, Maslama says that he began the *Rutbat al-ḥakīm* after the *fitna*, and the execution of ‘Abdallāh and the writing of the book were almost concurrent. Maslama refers to a span of time that started with the *fitna* when the «mediocre philosophers» monopolized the discourse of rational sciences. A process of this kind needs some time, the period between the first *fitna* and the middle of the fourth/tenth century.

107. Ibn Ḥajar, *Lisān*, 8:61–62, no. 7737; and Fierro, «Bāṭinism», 89.

out his book”<sup>108</sup>. After the execution of ‘Abdallāh, al-Ḥakam acquired his books<sup>109</sup>; thus he took symbolical possession of the intellectual legacy of his brother. It is no coincidence that Maslama began to write the *Rutbat al-ḥakīm* in 339/950, the same year ‘Abdallāh was executed. There are two possible interpretations of this fact. First, together with the library of his brother, al-Ḥakam acquired the services of his staff, including Maslama, despite al-Ḥakam’s poor opinion of Maslama. Second, Maslama retired to private life and devoted his time to organizing his notes and previous works on alchemy, in order to write *Rutbat al-ḥakīm*<sup>110</sup>. Whatever the case, Maslama’s life and work was respected by the Umayyads and he was able to live in peace surrounded by his disciples. Alchemy and magic were, after all, matters that, like astrology, most interested the powerful, if kept in secret.

### *The Rational Sciences in the Caliphate: The Public Light*

We have very scarce evidence that directly associates ‘Abd al-Raḥmān III to the controversial disciplines. As we have seen, the religious politics of ‘Abd al-Raḥmān III were a complex game in which the caliph tried to maintain a balance between several parties<sup>111</sup>. In order to achieve his goals, the caliph had to satisfy the religious scholars with measures and public gestures, such as the proclamation of the Mālikī school as the official school of the state, the persecution of the disciples of Ibn Masarra (Masarrīs), and the public display a degree of discretion with respect to the controversial disciplines. In many aspects, including religion, the governance of al-Ḥakam follows the lines established by his father, but in the field of the sciences, he took a step further by allowing the sciences

108. Ibn Ḥajar, *Lisān*, 3:198. On the doctrines of al-Karābīsī that are the subject of this discussion, see A. Osman, *The Zāhirī Madhhab (Third/Ninth-Tenth/Sixteenth Century): A Textualist Theory of Islamic Law* (Leiden 2014), 29–30; and N. Hurvitz, *The Formation of Hanbalism: Piety into Power* (New York 2002), 152–57.

109. Ibn al-Abbār, *al-Ḥulla*, 1:201.

110. Maslama b. Qāsim, *Rutbat al-ḥakīm*, 21: the author says that he wrote the book on the basis of preceding works.

111. Moreover, see M. Fierro, ‘Abd Al-Rahman III. *The First Cordoban Caliph* (London 2005), 125–31; and Fierro, «Heresy», 60–70.

of the ancients a greater presence in public life. The policy in favor of all rational sciences, including those considered controversial, initiated during the caliphate of ‘Abd al-Raḥmān III, was clearly reaffirmed during the caliphate of al-Ḥakam II. As noted, “Umayyad esotericism” and, in general, the promotion of the rational sciences, may have been a good strategy in terms of foreign politics, but it was equally effective, or even more so, in domestic politics. Having both religious and rational knowledge was an affirmation of the caliph’s moral and symbolic authority over the experts in both areas; this was particularly important vis à vis the religious scholars, since most of the experts in rational sciences served the ruling power directly or indirectly. It makes sense that, in the projects of dynasty (namely, better political strategy), caliphs took policy positions similar to those of al-Ma’mūn of Baghdad, who tried to impose rational discourse in religious matters. There are two indications of this.

The first is the vindication of ‘Abd al-Raḥmān II, as mentioned earlier, in which al-Ḥakam II participated. The emir was described by many authors, including al-Ḥakam II, as a ruler who knew the rational and the religious disciplines as well as the experts did. The implicit message seems to be the claim of an Andalusī al-Ma’mūn who disseminated rational knowledge. The second and most important indication is the orientation of mosques, in which al-Ḥakam II challenged the old procedures of establishing the *qibla* with the methods of mathematical astronomy<sup>112</sup>. The stories reported by al-Maqqarī and al-Wansharīsī regarding the reform of the *qibla* of the Great Mosque of Cordoba are particularly eloquent<sup>113</sup>. Al-Ḥakam wanted to move the *qibla* of the Cordoba mosque to the east because astronomers said that the old one was misaligned to the west<sup>114</sup>. In response, religious scholars, particularly a certain “Abū Ibrāhīm”<sup>115</sup>, told him that the traditions must be respected and that a change in

112. M. Rius, *La alquibla en al-Andalus y al-Magrib al-Aqṣà* (Barcelona 2000), 174; and Samsó, *On Both Sides*, 141–43.

113. See the translation of the texts in Samsó, *On Both Sides*, 141.

114. Al-Maqqarī, *Nafh*, 1:561–62, says, in addition, that ‘Abd al-Raḥmān III did the same in the mosque of Madīnat al-Zahrā’.

115. He may be identified with Abū Ishāq Ibrāhīm b. Masarra al-Tujībī, d. 352/963, Ávila et al., *Prosopografía de los ulemas de al-Andalus*, ID 2152. It is worth noting that Ibn Farḥūn, *al-Dhībāj al-mudhhib*, ed. M. al-Aḥmadī Abū Nūr (Cairo 1972), 1:296–97, no. 1, says that al-Ḥakam held Abū Ishāq in high esteem even though (or because) he had little fear of the kings.

the *qibla* would be a heretical innovation (*ibtidāʿ*). In al-Wansharīsī's version, it was the "people" (*ʿāmmat al-nās*) who opposed the change<sup>116</sup> and, in both texts, al-Ḥakam avoided escalating the tension and he did not change the *qibla*. Shortly after acceding to the throne<sup>117</sup>, the caliph brought the sciences of reason to public light regarding the particularly delicate issue of the *qibla*, arguing implicitly, but clearly, that reason should guide religion. Despite opposition, the caliph insisted and did not surrender to the religious scholars. A few years after the episode of the Great Mosque, al-Ḥakam II sent his astrologer Aḥmad b. Fāris to Malaga to check whether Canopus (Suhayl), whose rising point in winter determined the direction of the *qibla* according to folk procedures, that the religious scholars accepted with few qualms, was really visible from al-Andalus<sup>118</sup>. Aḥmad b. Fāris discussed the case with the religious leaders of the city. Thus, the caliph did not hesitate to send the man who cast his horoscopes to solve a religious problem. As shown by this and other similar anecdotes about Aḥmad b. Fāris and the stories of al-Ḥakam and the controversial matters, the caliph not only supported the normalization of astrology but he also supported debates about rational disciplines. There is an interesting text on this written by al-Zubaydī<sup>119</sup> about his teacher, the linguist Abū ʿAbdallāh al-Rabāḥī (d. 358/969).

He attentively read the books of the theologians, which he mastered, and studied logic (*manṭiqiyyāt*), in which he was proficient. He did not follow, however, any theological school nor [did he] opt for

116. Aḥmad al-Wansharīsī, *al-Miʿyār al-muʿrib*, ed. M. Ḥajjī (Rabat 1981), 1:118. Note that other chronicles mention the participation of the people and religious scholars in opposition to astrology, philosophy, or magic. See al-Maqqārī, *Nafh*, 1:221 and 3:185–86, on the purpose of expurgating al-Ḥakam's library; Ibn Ḥayyān, *Muqtabis II/1*, in several passages analyzed in Forcada, «Astronomy», 38–42, on the reason for persecuting the astrologers and philosophers who worked for ʿAbd al-Raḥmān II. Since these episodes are unrelated, we can reasonably surmise that there is some truth behind these stories.

117. As is well known, al-Ḥakam began to renovate the Great Mosque in 350/961.

118. M. Forcada, *Ibn ʿĀṣim (m. 403/1013): Kitāb al-anwāʾ wa-l-azmina, al-qawl fī l-ṣuhūr* (Madrid 1993), 82–86, and note 92 above.

119. It is worth noting that al-Zubaydī was an opponent of the controversial disciplines. He not only wrote a refutation of Ibn Masarra, but he was also al-Manṣūr's consultant in the case of the expurgation. Fierro, *Heterodoxia*, 162.

any of their principles. He decided for himself based only on what caught his attention at any one time, and *on what he preferred because of the presence [of an interesting person to debate with]*<sup>120</sup>. Although he reached pure error and blatant absurdity, he could neither refrain from it nor stop debating it. He discussed [it] with experts on *fiqh*, according to the method of argumentation and [also discussed] with physicians and astrologers their subtle concepts and elevated questions, [and dared to] discuss [it] with anyone who had spent a long time studying this science<sup>121</sup>.

Al-Rabāḥī<sup>122</sup> was one of the librarians of al-Ḥakam II and also the teacher of two sons of ‘Abd al-Raḥmān III, al-Mughīra and al-Ḥakam. In addition, he taught grammar to numerous disciples, including several who were associated with the rational sciences and Mu‘tazilī theology.

(1) Ibn Juljul, with whom he learned Sībawayh’s *Kitāb* in 358/968<sup>123</sup>.

(2) ‘Alī b. Sulaymān al-Zahrāwī, a religious mathematician and doctor, and a disciple of Maslama al-Majrīṭī<sup>124</sup>.

(3) Muḥammad b. Faḍlallāh b. Sa‘īd<sup>125</sup>, a follower of Ibn Masarra and a Mu‘tazilī who was the nephew of the well-known al-Mundhir b. Sa‘īd al-Ballūṭī (d. 355/966), one of the most outstanding judges

120. Or, *wa-yu’tthiruhu (yu’aththiruhu) bi-l-ḥaḍra*. Here I have tentatively translated the equivocal clause. It must be understood from the context that al-Rabāḥī chose the subjects and the doctrines he studied and discussed rather arbitrarily, following the inspiration of the moment. The next lines of the text suggest that what al-Rabāḥī most liked were discussions with other scholars. The Spanish translation in F. Velázquez Basanta, «al-Rabāḥī, ‘Abd Allāh», in *Biblioteca de al-Andalus*, ed. Jorge Lirola Delgado and José Miguel Puerta Vilchez (Almería 2004-12), 7:137, interprets the passage as «or preferred it [the subject] due to the presence of [God]», which is a possible alternative.

121. Al-Zubaydī, *Ṭabaqāt al-naḥwiyyīn*, 310.

122. On the life and works of this author, see D. A. H. Deheidell, «El gramático andalusí Muḥammad ben Yahyā al-Rabāḥī», in *Miscelánea de Estudios Árabes e Islámicos* 51 (2002), 3-17; and Velázquez Basanta, «al-Rabāḥī».

123. Ibn al-Abbār, *al-Takmila li-Kitāb al-Ṣila*, ed. ‘A.S. al-Harrās (Casablanca 1990), 4:47, no. 3119.

124. Ṣa‘īd al-Andalusī, *Ṭabaqāt al-umam*, 171; Ibn al-Abbār, *al-Takmila*, 3:321, no. 2671; and see additional references in Ávila et al., *Prosopografía de los ulemas de al-Andalus*, ID 6502.

125. Ibn al-Abbār, *al-Takmila*, 2:38, no. 1058; Fierro, *Heterodoxia*, 155; and Ávila et al., *Prosopografía de los ulemas de al-Andalus*, ID 10263.

and religious scholars of the epoch who was believed to be a Mu‘tazilī<sup>126</sup>.

(4) Muḥammad b. Fathūn b. Mukram al-Tujībī, a grammarian who fled Cordoba during the second *fitna*. He was the brother of Sa‘īd b. Fathūn<sup>127</sup>, a philosopher who was persecuted in the campaign against Ibn al-Ifṭīlī<sup>128</sup>.

(5) Muḥammad b. ‘Āṣim al-‘Āṣī<sup>129</sup>, a linguist, expert in logic<sup>130</sup>, and a victim of the campaign against Ibn al-Ifṭīlī.

Al-Ḥakam II’s library transcended the caliph’s private sphere<sup>131</sup> and, consequently, his librarians, did as well. Al-Rabāḥī’s closeness to power makes him a good example of the affinities of the ruling power. Due to his broad intellectual profile, al-Rabāḥī appears to be a kind of alter ego of his lord al-Ḥakam. The debates on theology, law, medicine, and astronomy, in which heterodox opinions were expressed, reflected activity in intellectual circles close to power that the ruling power not only tolerated but encouraged. The substrate of these exchanges was a well-trained, multifaceted, and curious class of learned people who spoke about many subjects with little or no hindrance. Another story reflects a radically opposite attitude. It was transmitted by al-Ḥumaydī and referred to a Mālikī religious scholar, Abū ‘Umar Aḥmad b. Muḥammad b. Sa‘dī (active at the end of the fourth/tenth century), who born in Seville and moved to the Maghrib<sup>132</sup>. The text was first discussed by Dozy<sup>133</sup>, who translated

126. Fierro, *Heterodoxia*, 140ff. Al-Mundhir was a Zāhirī scholar but not a Mu‘tazilī.

127. Fierro, *Heterodoxia*, 161–65, esp. 163; and Balty-Guesdon, *Médecins*, 240–46, esp. 242–43.

128. See above note 2.

129. Ibn Bashkuwāl, *Kitāb al-Ṣila*, ed. I al-Abyārī (Cairo and Beirut 1989), 3:700–1, no. 1041; see additional references in Ávila et al., *Prosopografía de los ulemas de al-Andalus*, ID 9195.

130. Fierro, *Heterodoxia*, 163; and Balty-Guesdon, *Médecins*, 243–44.

131. Wasserstein, «The Library», 101.

132. Al-Ḥumaydī, *Jadhwa*, 161–62, no. 185; see another biography in al-Ḍabbī, *Bughyat al-multamis*, ed. I. al-Abyārī (Cairo and Beirut 1989), 1:199–201, no. 342, who borrows the text from al-Ḥumaydī. Ibn Bashkuwāl, *al-Ṣila*, 1:69–70, no. 67 places the story around 380/990; more references on the nephew of al-Sa‘dī, Aḥmad b. Muḥammad al-‘Āmirī appear in ‘Abd al-Malik al-Marrākushī, *al-Dhayl wa-l-takmila*, ed. I. ‘Abbās et al. (Tunis 2012), 1:594–95, no. 628, but do not provide further information.

133. R. Dozy, review of E. Renan’s *Averroès et l’averroïsme*, in *Journal Asia-*

it in his review of the famous book by Renan, *Averroès et l'Averroïsme*, and was then addressed by other scholars<sup>134</sup>, who were misled by it on occasion<sup>135</sup>.

Al-Ḥumaydī explains a dialogue between al-Sa'dī and his teacher in Kairouan, Ibn Abī Zayd al-Qayrāwānī (d. 386/996), who was one of the most influential Mālikī religious scholars of his time<sup>136</sup>. The teacher asked the disciple about a meeting of rationalist theologians (*ahl al-kalām*) that he attended in Baghdad. Al-Sa'dī explained to him, with deep contempt, that he had been invited to a session of theologians (*ahl al-kalām*) in Baghdad in which orthodox Muslims (*ahl al-sunna*) sat together with heretical Muslims (*ahl al-bid'a*), Zoroastrians (*mājūs*), eternalists (*dahriyya*)<sup>137</sup>, heretics (*zanādiqa*), Jews, Christians, and all kinds of infidels. He goes on to say that one of these infidels stated that they had met to debate, but no one could use arguments borrowed from the Qur'ān and the *sunna*, because only rational arguments would be admitted. Al-Sa'dī swore that he would not attend a session like this again. Just as interesting as this account is the response of Abū Zayd al-Qayrāwānī, who was shocked that Muslims had seen such things.

*tique*, fifth series, vol. 2 (1853), 90-96; al-Ḥumaydī's text is translated into French on p. 93.

134. Fierro, *Heterodoxia*, 164-65, quotes Asín Palacios and Makkī and gives Asín's translation of al-Ḍabbī's version; see M. Asín Palacios, *Algazel. Dogmática, moral, ascética* (Zaragoza 1901), 116-18.

135. D. A. Macdonald, *Development of Muslim Theology, Jurisprudence and Constitutional Theory* (London 1903), 194, gives a most fantastic version of Dozy's text without mentioning him; he imagines that the Andalusī traveler, not mentioned by name, attended a meeting of the Ikhwān al-Ṣafā'. An echo of this version may be seen in M. Kacimi, «La relación de Maslama al-Maḡrībī con las obras *Rasā'il Ijwān al-Ṣafā'*, *Risālat al-ḡāmi'a*, *Rutbat al-Hakīm* y *Gāyat al-ḥakīm*», in *Anaquel de Estudios Árabes* 25 (2014), 31-32. On this basis, some authors speculate about a journey of Maslama al-Maḡrībī (that he confuses with al-Sa'dī) in the course of which he brought the *Epistles* of the Ikhwān to al-Andalus.

136. On him, see M. Muranyi, «Ibn Abī Zayd al-Qayrawānī», in *EI*<sup>3</sup>. On his influence in al-Andalus, see M. Fierro, «The Polemic about the *Karāmāt al-Awliya'* and the Development of Ṣūfism in al-Andalus (Fourth/Tenth-Fifth/Eleventh Centuries)», in *BSOAS* 55 (1992), 236-49; and J. M. Fórneas, «Recepción y difusión en al-Andalus de algunas obras de Ibn Abī Zayd al-Qayrawānī», in *Homenaje al profesor Darío Cabanelas Rodríguez O.F.M.* (Granada 1987), 1:315-44.

137. Lit., those who believe in the eternity of the world, therefore, followers of Aristotle.



Religious scholars are losing themselves and with them [we are losing] the sanctity of Islam and its truths. How can Muslims tolerate the debate between Muslims and infidels? This should not be done between [orthodox] Muslims and heretical Muslims [“innovators,” *ahl al-bid‘a*], who accept Islam and the Prophet. These heretics who profess Islam must be invited to return to the *sunna* and the consensus of the community and, if they do so, let them be accepted; if they refuse, let their heads be cut off. The infidels must be invited to Islam and, if they accept, [it is better that] we stay away from them and, if they refuse but pay the *jizya*, it is lawful to accept them but we must stay away from them. It is absolutely unlawful for them to forbid [Muslims] from arguing according to our books and our prophets. From God we come, and to Him we will return<sup>138</sup>!

The session described by al-Sa‘dī is consistent with the cosmopolitan atmosphere of Būyid Baghdad as described by Kraemer<sup>139</sup>; the reaction of al-Sa‘dī is also consistent with the attitude of those in the religious sectors who led the expurgation of al-Ḥakam’s library. There is no evidence that meetings such as the one described by al-Sa‘dī were frequent in al-Andalus, though the story about the debates of al-Rabāḥī suggests that there was something of this kind<sup>140</sup>. The expurgation of al-Manṣūr’s library provides evidence that most religious scholars of al-Andalus considered that the concessions to heterodox discourses had gone too far.

*The Exchange of Knowledge in the Disciplines: Alchemy in the Circle of Maslama*

Exchange and debate also took place between the scholars devoted to the rational disciplines, though the evidence is scant. The nineteenth-century historian Conde mentioned sessions on natural philosophy, mathematics, and astronomy held in the homes of “wazīr Izā ben Ishaq and Chalaf ben Abēs el Zahrawi,” whom he considered

138. I translate al-Ḥumaydī’s version, which is slightly more complete.

139. J. L. Kraemer, *Humanism in the Renaissance of Islam: The Cultural Revival During the Buyid Age* (Leiden 1992).

140. See, moreover, the considerations of Fierro, *Heterodoxia*, 164–65.

the doctors of ‘Abd al-Raḥmān III<sup>141</sup>. The information is problematic because, first, it is impossible for al-Zahrāwī to have been a physician of ‘Abd al-Raḥmān III<sup>142</sup> and, second, there is no record of ‘Īsā b. Ishāq having been a minister and a physician. Yaḥyā b. Ishāq, however, was a physician and minister and has tentatively been identified as ‘Īsā b. Ishāq<sup>143</sup>. Since no one has found Conde’s source and Dozy criticized the reliability of his work, some consider this passage erroneous. Or, Conde may have borrowed from an authentic yet imprecise source. We have much more information about what we could refer to as a “vertical exchange,” that is, the acquisition and transmission of knowledge in the disciplines themselves through a dense network of teacher-disciple connections. We have the most data for medicine, followed by mathematics, astronomy/astrology, and finally, logic<sup>144</sup>.

Ibn Juljul and his disciple Ibn Jānah (d. ca. 432/1040)<sup>145</sup>, the physicians who speak about physicians, scientists, and philosophers, show the existence of a medical community whose members were well prepared and highly interconnected with one another, with the Umayyad ruling power, and with foreign centers of knowledge such as Baghdad, Kairouan, and Fuṣṭāṭ/Cairo. All in all, Ibn Juljul and Ibn Jānah describe a cosmopolitan medical community in which Jews and Christians also participated. We may presume a similar situation with respect to, at least, astronomers/astrologers, most of whom formed part of a remarkable community centered around Maslama al-Majrīṭī, the astronomer and mathematician who became the direct or indirect teacher of several generations of astronomers and astrologers<sup>146</sup>. These scholarly communities were by no means strict

141. J. A. Conde, *Historia de la dominación de los árabes en España* (Madrid 1820), 1:427–28. The passage also says that they healed poor patients free.

142. Ibn Jānah, *Kitāb al-talkhīs*, ed. G. Bos, F. Käs, M. Lubke and G. Mensching (Leiden 2020), 1:168. The editors conclude that al-Zahrāwī must have been active during the first decades of the fifth/eleventh century.

143. A. C. López López, «Ibn Ishāq al-wazīr/al-ṭabīb», in *Biblioteca de al-Andalus*, 3:533–39, on 538, accepting the veracity of Conde’s story. On Yaḥyā b. Ishāq, see Ibn Jānah, *Kitāb al-talkhīs*, 121–27.

144. See the tables of Balty-Guesdon, *Médecins*, 734–41.

145. In *Kitāb al-talkhīs*, Ibn Jānah provides interesting data about the authors of the late Umayyad period. The works from classical and Muslim authors are a good base for assessing the transfer of knowledge to al-Andalus; see particularly Ibn Jānah, *Kitāb al-talkhīs*, introduction, 139–64.

146. Samsó, *Las ciencias*, 80–84.

categories with no overlap. Many professional physicians stand out for their knowledge of other disciplines, and professional astronomers and astrologers also learned medicine. Logic, the transversal discipline par excellence, inasmuch as it trained the minds of the students of rational sciences, was frequently studied by scholars in several areas such as medicine, language, or mathematics<sup>147</sup>. Maslama al-Majrīṭī, who taught the exact sciences and logic, was a key figure in the scientific activity of the late fourth/tenth century, and an intellectual son of al-Ḥakam II's time<sup>148</sup>.

In this context, the marginal disciplines were alchemy and magic. Virtually the only textual evidence about the teaching and transmission of alchemy at this time appeared in a polemic text, the *Risāla* on alchemy by Ibn Bishrūn, which Ibn Khaldūn inserted in the sections on alchemy mentioned above<sup>149</sup>. According to Ibn Khaldūn, Ibn Bishrūn was a disciple of Maslama al-Majrīṭī and the addressee of his *Risāla* was Ibn al-Samḥ (d. 426/1035), who was also a disciple of Maslama and one of the most outstanding astronomers and mathematicians in the history of al-Andalus<sup>150</sup>. The difficulty of identify-

147. Forcada, «Books», 78–81 and the bibliography given there.

148. Ṣaʿīd al-Andalusī, *Ṭabaqāt al-umam*, 166; Ibn al-Abbār, *al-Takmila*, 1:68, no. 20; al-Marrākushī, *al-Dhayl wa-l-takmila*, 1:547, no. 521. Maslama learned mathematics, astronomy, and astrology from Abū Bakr b. ʿAbs, who, according to Ṣaʿīd al-Andalusī, taught at the time of al-Ḥakam II. This dating is consistent with what we know about the man who taught Maslama inheritance calculations, ʿAbd al-Ghāfir al-Faraḍī; Ibn Bashkuwāl, *al-Ṣila*, 1:483, no. 819; Ávila et al., *Prosopografía de los ulemas de al-Andalus*, ID 4820. The dates of his life and death are unknown but ʿAbd al-Ghāfir al-Faraḍī learned from three religious scholars who passed away around the middle of the fourth/tenth century, Qāsim b. Aṣḥagh (d. 340/951), Ibn al-Mushtarā (d. 337/948), and Aḥmad b. Khālīd, who may be identified with Aḥmad b. Khālīd al-Tamīmī (d. 330/941) or Aḥmad b. Khālīd b. al-Jabāb (d. 322/934); on them, see, respectively, Ávila et al., *Prosopografía de los ulemas de al-Andalus*, IDS 7567, 3797, 932, and 934. ʿAbd al-Ghāfir al-Faraḍī was therefore active by the middle of the fourth/tenth century and so it is likely that Maslama was a student during the last part of the caliphate of ʿAbd al-Raḥmān III and the beginning of al-Ḥakam's epoch. Strong evidence that this was the case is given by Maslama's table of stars, which says that he observed the stars at the end of 367/978; Paul Kunitzsch, «Two Star Tables from Muslim Spain», in *Journal for the History of Astronomy* 11 (1980), 193.

149. Ibn Khaldūn, *al-ʿIbar*, 697–706.

150. M. Comes, «Ibn al-Samḥ, Abū l-Qāsim», in *Biblioteca de al-Andalus*, ed. Jorge Lirola Delgado and José Miguel Puerta Vilchez (Almería 2004–12), 5:227–30; Fierro, *Historia de los autores*, Astronomía, ID 3068; Samsó, *On Both Sides*, esp., 262–64, 376–78.

ing this Ibn Bishrūn<sup>151</sup> and the controversy about the authorship of the *Rutbat* and *Ghāyat al-ḥakīm* led Rosenthal to conclude that Ibn Bishrūn's *Risāla* was pseudepigraphic<sup>152</sup>. Fierro thought the treatise might have been written by a disciple of Maslama b. Qāsim named Ibn Bishrūn, who addressed it to a Shāfi' scholar named Abū Sulaymān 'Abd al-Salām b. al-Samḥ b. Nabil b. 'Abdallāh b. Yaḥyun b. Ḥārith b. 'Abdallāh b. 'Abd al-'Azīz al-Hawwārī l-Shāfi'ī (303–70/915–80 or 387/997)<sup>153</sup>. However, there are no sources that indicate that this religious scholar was a disciple of Maslama, nor that he had any knowledge of alchemy, magic, or any rational science. In fact, Ibn Khaldūn's narrative regarding Ibn Bishrūn and Maslama al-Majrīṭī's circle is perfectly reasonable if we consider an anonymous note found in one manuscript of *Rutbat al-ḥakīm* (Ragıp Paşa 963), which Rosenthal mentioned without further analysis<sup>154</sup>. The following are the essential elements of the note.

- (1) The attribution to Maslama al-Majrīṭī of the authorship of the *Epistles* of the Ikhwān, *Ghāya*, *Rutba*, and *Tārīkh al-falāsīfat al-'arab*<sup>155</sup>;
- (2) A reference to Ibn al-Samḥ, Ibn al-Ṣaffār, al-Zahrāwī, al-Kirmānī, Ibn Khaldūn, and Abū Bakr b. Bishrūn being disciples of Maslama al-Majrīṭī; and
- (3) An assertion that Ibn Bishrūn said that there was a strong personal conflict between Ibn al-Samḥ and Maslama, and that the former left the latter for another teacher, Abū Muḥammad 'Abdallāh al-Sūsī<sup>156</sup>.

151. See Samsó, «Ibn Bišrūn, Abū Bakr», in *Biblioteca de al-Andalus*, ed. Jorge Lirola Delgado and José Miguel Puerta Vilchez (Almería 2004–12), 2:670–71, for a summary of the various theories that have been put forth.

152. F. Rosenthal, *Ibn Khaldūn: The Muqaddimah, an Introduction to History* (New York 1958), 3:230 n. 969.

153. Fierro, «Bāṭinism», 101.

154. The note is edited, translated into English, and analyzed in G. De Callatay and S. Moureau, «Again on Maslama», Ibn Qāsim al-Qurṭubī, the Ikhwān al-Ṣafā' and Ibn Khaldūn: New Evidence from Two Manuscripts of *Rutbat al-Hakīm*, in *al-Qanṭara* 37 (2016), 356–67.

155. Maslama b. Qāsim himself says that he wrote this work; *Ghāyat al-ḥakīm*, 144, 176, *Rutbat al-ḥakīm*, 18, mentioned as *Kitāb ṭabaqāt falāsīfa al-'arab*.

156. The conflict is described in the following terms: «There has been between Ibn al-Shamkh [sic] and Maslama a profound dissension, because this one had treated him roughly, and he [= Ibn al-Samḥ] had left him for Abū Muḥammad al-Sūsī. This is reliable information as it was reported by Ibn Bishrūn and others»; trans. De Callatay and Moureau, «Again on Maslama», 357.

Abū Muḥammad ‘Abdallāh al-Sūsī is the essential clue to unravel the problem posed by Ibn Khaldūn. Although apparently not mentioned by Ṣā’id al-Andalusī<sup>157</sup>, al-Sūsī was an outstanding physician of the late fourth/tenth century, and widely quoted in the fifth/eleventh century<sup>158</sup>. According to Ibn al-Abbār, al-Sūsī was a Maghribī who migrated to al-Andalus. He died in Cordoba during the ransacking of 403/1013 mentioned above. He wrote the *Kitāb al-mujarrabāt* that might have been the source of most of the quotes alluded to earlier (see note 158). Moreover, Ibn al-Abbār mentions that al-Sūsī was an expert in *ḥikma*, that is, wisdom in the broad and esoteric sense of the word. In the biography of Ibn al-Samḥ, Ibn al-Abbār says (in much the same way Ibn Bishrūn, according to the note of Ragıp Paşa 963) that Ibn al-Samḥ left Maslama for al-Sūsī<sup>159</sup>, although Ibn al-Abbār does not allude to a personal conflict but only says that Ibn al-Samḥ “chose the opinion” of al-Sūsī<sup>160</sup>. What Ibn al-Abbār says about Ibn al-Samḥ and al-Sūsī in connection with Ibn Khaldūn’s narrative, leaves little room for doubt that the author of MS Ragıp Paşa 963 did not fabricate what Ibn Bishrūn says about Maslama al-Majrītī, al-Sūsī, and Ibn al-Samḥ. Otherwise, too many fabrications coincided in this case: first, the pseudepigraphic treatise was written by another author in the name of Ibn Bishrūn to create an alchemical and magical circle around Maslama al-Majrītī; and second, the words in the note attributed to Ibn Bishrūn were not his<sup>161</sup>. It is

157. We should consider the possibility that Ṣā’id mentioned him, who was ‘Abdallāh b. Muḥammad al-Sarī mentioned above in note 93. I tend to believe that they are one and the same person. It is very easy to confuse *wāw* for *rā*’ and sometimes the *sin* appears horizontally and is easy to overlook. Besides, it is unlikely that there were, in the same epoch, two experts in alchemy or *ḥikma* named ‘Abdallāh b. Muḥammad whose *nisba* begins with «al-S.»

158. Ibn al-Abbār, *al-Takmila*, 3:302, no. 868; Fierro, *Historia de los autores*, Medicina, ID 4692. See also Balty-Guesdon, *Médecins*, 219, 259, and 634, no. 119, which states that Ibn Wāfid’s *Kitāb al-wisād* quotes al-Sūsī; Ibn Jānah, *Kitāb al-talkhīṣ*, 158, in which the editors mention that al-Sūsī is not only cited in Ibn Jānah *Kitāb al-talkhīṣ* but also in the ‘*Umda* by Abū l-Khayr.

159. Ibn al-Abbār, *al-Takmila*, 1:170–1, no. 550.

160. It is worth noting that the stories about al-Sūsī and Ibn al-Samḥ given by Ibn al-Abbār are consistent with one another. In the entry about al-Sūsī, he says that al-Sūsī died in the ransacking of 403/1013; in the entry about Ibn al-Samḥ, he says that the latter left Cordoba during the second *fitna*, the reason is obvious.

161. De Callatay and Moureau, «Again on Maslama», 360, say that the Ibn Bishrūn of the note is not the same as the one mentioned in the *Muqaddima*. It

possible that there were two concurrent forgeries, but it is less plausible. Therefore, it is most plausible that Ibn Bishrūn was actually a disciple of Maslama al-Majrīṭī, because it is affirmed by two independent sources, Ibn Khaldūn and Ibn Bishrūn (via the note of MS Ragıp Paşa 963). Ibn Bishrūn's authorship of the *Risāla* is equally plausible, since there would be no reason to question Ibn Khaldūn if Ibn Bishrūn was reliably associated with the circle of Maslama al-Majrīṭī. It is not impossible that Maslama al-Majrīṭī wrote *Ghāyat* and *Rutba*, but it is difficult to believe because he was seemingly too young<sup>162</sup> at the time when both works were written, between 339/950 and 342/953 in the case of *Rutba* and between 346/957 and 348/960 in the case of *Ghāya*<sup>163</sup>. The solution to this puzzle might be that Maslama al-Majrīṭī was a disciple of Maslama b. Qāsim in the fields of magic and alchemy and that he taught these matters to some of his disciples, together with other disciplines. The lack of information, likely due to the secrecy that protected the practice of magic and alchemy, and the fame acquired by al-Majrīṭī and his disciples in more popular and less secret disciplines such as astrology, astronomy, and mathematics may provide a good explanation as to why posterity may have mistaken Maslama b. al-Qāsim for Maslama al-Majrīṭī. Actually, the note in MS Ragıp Paşa 963 contains relevant evidence about this confusion. First, it says that al-Majrīṭī wrote extensively on religion, and this is absolutely true in the case of Ibn Qāsim but is untrue with respect to al-Majrīṭī, who, as far as we know, only wrote one treatise about inheritance calculations<sup>164</sup>. Moreover, it says that Maslama al-Majrīṭī traveled widely, a fact that is probably not true with regard to al-Majrīṭī, because we do not know of sources that indicate that he ever left al-Andalus, but it is absolutely true in the case of Ibn Qāsim. The note says, moreover, that al-Ḥakam granted his favor to Maslama; this is problematic in the case of Ibn Qāsim, as we have seen before, and only possible in the case of al-Majrīṭī. This might be a reflection of his disciples'

is possible but it seems unlikely that such an uncommon name coincides in the same context.

<sup>162</sup>. See above note 148.

<sup>163</sup>. Maslama b. Qāsim, *Ghāyat al-ḥakīm*, 1; Maslama b. Qāsim, *Rutbat al-ḥakīm*, 21.

<sup>164</sup>. Ibn Bashkuwāl, *Kitāb al-ṣila*, ed. I. Al-Abyārī (Beirut and Cairo 1989), 3:899, no. 1372.

familiarity with kings: most of them served the Ṭāʾifa (“Party Kings”), and Ibn al-Khayyāt was the astrologer of the caliph Sulaymān al-Mustaʿīn (r. 400/1009 and 403-7/1013-16) and other Umayyad rulers<sup>165</sup>. The same confusion occurs in the biography of Maslama al-Majrīṭī by al-Burzulī (d. 841/1438)<sup>166</sup>.

The hypothesis that one Maslama was a disciple of the other fits well with a good number of historical facts and textual evidence.

(1) It explains why Maslama al-Majrīṭī is so frequently related to the authorship of the *Ghāya*, *Rutba*, and the *Rasāʾil* (*Epistles*) of the Ikhwān al-Ṣafāʾ, since at least Ibn Sabʿīn (613-14 to 688-9/1217-8 to 1270-1)<sup>167</sup>.

(2) It overcomes one of the main problems posed by al-Majrīṭī’s authorship of *Ghāyat al-ḥakīm*, namely that, according to Willy Hartner, the author of the work had a poor knowledge of astronomy<sup>168</sup>.

(3) It coincides with what we know about the teachers of Maslama<sup>169</sup>: while Maslama al-Majrīṭī was learning astronomy from Abū Bakr b. ʿAbs and *farāʾiḍ* (division of inheritance) from Ibn Ghāfir toward the beginning of the caliphate of al-Ḥakam II or slightly earlier, he also could have been learning alchemy and magic from Maslama b. Qāsim.

(4) It is consistent with Ṣāʾid al-Andalusī’s mention of al-Kirmānī, al-Majrīṭī’s disciple, who brought the *Epistles* of the Ikhwān from the Mashriq to Zaragoza toward the middle of the fifth/eleventh century<sup>170</sup>: Maslama taught al-Kirmānī the *Epistles* and so he knew the importance of the work well.

(5) It is consistent with the testimony of Ibn Bishrūn. In the *Risāla* reproduced by Ibn Khaldūn, Ibn Bishrūn mentions a long

165. Above section 7.

166. Kacimi, «La relación», 35, according to al-Burzulī, *Jāmiʿ masāʾil al-aḥkām*, ed. M. Ḥ. al-Hila (Beirut 2002), 6:418.

167. For a list of works and manuscripts, see Kacimi, «La relación», 32-37. R. Forster and J. Müller, «The Identity, Life and Works of the Alchemist Ibn Arfaʿ Raʾs», in *al-Qanṭara* 41 (2020), 383-84, mention two manuscripts of *Shudūr al-dhahab* by Ibn Arfaʿ Raʾs (d. 593/1197) written in the tenth/sixteenth century that give Ibn Arfaʿ the *nisba* al-Majrīṭī.

168. Samsó, *Las ciencias*, 258; and W. Hartner, «Notes on *Picatrix*», in Hartner, *Oriens-Occidens* (Hildesheim 1968), 415-28.

169. Above, note 149.

170. Ṣāʾid al-Andalusī, *Ṭabaqāt al-umam*, 171-72.

conversation with Maslama (seemingly al-Majrīṭī) about an alchemical subject<sup>171</sup>. Ibn Bishrūn does not say in this fragment or in the rest of the *Epistle* that al-Majrīṭī wrote either the *Ghaya* or *Rutba*. The same happens in the case of the note in Ragıp Paşa 963. The attribution of authorship of the *Ghāyat* and *Rutba* to Maslama al-Majrīṭī is a statement of Ibn Khaldūn and the author of the note.

Astrology is an essential discipline for magic, especially talismanic magic, and is also important for alchemy. Neither Maslama nor his disciples were solely astronomers or astrologers. They were multifaceted scholars who, in at least seven cases, were also physicians<sup>172</sup>. In other words, the circle of Maslama al-Majrīṭī constituted an audience specially able to understand and practice disciplines as complex as magic and alchemy.

### *A Final Note on Magic and Alchemy in the Caliphate*

Though there is little data on magic and alchemy from the Umayyad era, it is the best documented period in the history of al-Andalus<sup>173</sup>. Besides the references found in historical and bibliographical sources, three works have been passed down to us: the two treatises by Maslama and a short tract on talismans and lunar mansions written by an otherwise unknown Abū ‘Alī b. al-Ḥātim, active in 327/939<sup>174</sup>. The work is known by the title of its Latin translation,

171. Ibn Khaldūn, *al-Ibar*, 704. The fragment deals with a well-known subject, the egg as a metaphor for alchemy. Maslama b. Qāsim, *Rutbat al-ḥakīm*, 36, explains this issue briefly but the two texts are unrelated to one another.

172. Forcada, *Ética*, 171 and 239-40.

173. Latin translations of Arabic magical and alchemical texts show that magic and alchemy were circulating in al-Andalus later, in the sixth/twelfth and seventh/thirteenth centuries; see J. P. Boudet, «The Transmission of Arabic Magic in Europe (Middle Ages – Renaissance)», in *Micrologus* 28 (2020), 143-65 (about magic); and Sébastien Moureau, «*Min al-Kīmiyā’ ad Alchimiam*: The Transmission of Alchemy from the Arab-Muslim World to the Latin West in the Middle Ages», in *Micrologus* 28 (2020), 87-141 (about alchemy).

174. K. Lippincott and D. Pingree, «Ibn al-Ḥātim on the Talismans of the Lunar Mansions», in *Journal of the Warburg and Courtauld Institutes* 50 (1987), 57-81; K. Lippincott, «More on Ibn al-Ḥātim», in *Journal of the Warburg and Courtauld Institutes* 51 (1988), 188-90; M. Oliveras, «*El De imaginibus caelestibus* de Ibn al-Ḥātim», in *al-Qanṭara* 30 (2009), 171-220. We return to this treatise later.



*De imaginibus*. Although there is no direct relation between the authors or the works, Ibn al-Ḥātim's treatise deals with a subject, namely talismans, that employ the powers of lunar mansions, and is addressed extensively in the *Ghāyat al-ḥakīm*. The main source of Ibn Ḥātim seems to be a treatise on talismans that coincides with one of the sections of the *Libro de las formas et de las imágenes* written in the scriptorium of Alfonso X the Wise, which is attributed to "Pliny". Christian posterity considered the treatises of Maslama's *Ghāyat al-ḥakīm*/*Picatrix* and Ibn Ḥātim's *De imaginibus* as a pair since both circulated in the same manuscript. Other treatises include the works attributed to Ibn Bishrūn, and others. The well-known writer Ibn Shuhayd (d. 426/1035), a member of the Cordoban aristocracy who served the dynasty, also deals with the subject. Even though he belongs, chronologically, to the transition between the era of the Umayyads and the time of the Ṭā'ifa ("Party Kings"), his mind was a product of the most refined culture of the Umayyads<sup>175</sup>. He refers to a story of an alchemical laboratory that was actually a workshop of counterfeiterers<sup>176</sup>. More importantly, there is an edited, yet virtually unknown treatise on magical recipes for *nīranjāt*<sup>177</sup> that is attributed to him<sup>178</sup>. Even though the work deals with the tricks

175. Fierro, *Historia de los autores*, *Fiqh* ID, 353, *Poesí*, ID 336, *Adab* ID 116, *Gramática* ID 107, *Medicina* ID 40, *Otros* ID 180.

176. Ibn Bassām, *al-Dhakhīra*, 1:220; Samsó, *Las ciencias*, 259–60.

177. According to Burnett, «Three Divisions», 50–51, the *nīranj* «is a magical practice that includes a combination of mixing and processing ingredients, invoking spiritual beings, burning incense (suffumigation), and making figurines in order to manipulate spiritual forces». Moreover, see Ch. Burnett, «Nīranj: A Category of Magic (Almost) Forgotten in the Latin West», in *Natura, scienze e società medievali. Studi in onore di Agostino Paravicini Bagliani* (Florence 2008), 37–66. *Ghāyat al-ḥakīm* deals extensively with *nīranjāt* but it seems that Ibn Shuhayd's treatise does not borrow from it.

178. Ibn Shuhayd, *Kitāb al-nāranjiyyāt*, ed. Š. M. al-ʿAzzāwī, [published as] «Kitāb al-nāranjiyyāt: al-Bāhir fī ʿajāʾib al-ḥiyāl li-Abī ʿĀmir Aḥmad b. ʿAbd al-Malik al-Andalusī Ibn Shuhayd», in *al-Turāth al-Shaʿbī* 6 (1975), 126–54. See an approach to this work in M. T. Garulo, *La literatura árabe en al-Andalus durante el siglo XI* (Madrid 1998), 93–95. *Kitāb al-nāranjiyyāt* preceded another treatise on the same topic entitled *Kashf al-dakk wa-īdāḥ al-shakk* (Discovery of the falsification and clarification of the doubt). I would like to thank Juan Manuel Gallego Luque for sharing with me his research on Ibn Shuhayd's treatise. He informed me that Ibn Shuhayd's *Kashf al-dakk* is quoted in *Kitāb al-mukhtār fī kashf al-asrār*, a treatise about charlatans written by the Syrian al-Jawbarī (fl. 619/1222); see the recent translation into English by H. Davies: Jamāl al-Dīn ʿAbd al-Raḥīm al-Jawbarī, *The Book of Charlatans*, ed. Manuela Dengler, trans. Humphrey Davies (New York 2020), 7 (sections 0.5 and 0.7).

that charlatans use to fool superstitious people, Ibn Shuhayd says in the introduction that there are *nāranjiyyāt* (*sic*) that use the properties of stones and drugs and are prepared according to correct methods. This means that, on the one hand, Ibn Shuhayd believes that there is “true” and “false” magic, and, on the other, that the practice of magic was relatively common in Umayyad society. Although the contents of the work seems too simplistic for a sophisticated spirit such as Ibn Shuhayd, the importance of the treatise should not be overlooked before it receives the careful study that it deserves. For the purposes of the present article, suffice it to say that Ibn Shuhayd and his treatise exemplifies the relevance that the esoteric sciences acquired during the Umayyad caliphate, a relevance that would not have been possible without the complicity of the court. The Umayyad caliphs invested generously in the services of doctors, astrologers, architects, accountants, and so on. It makes sense that they also wanted magicians and alchemists in their service, since magic and alchemy might have been deemed as useful as medicine or astronomy.

### *Conclusions*

During the transition between the third/ninth and the fourth/tenth centuries, the scientific and philosophical culture of al-Andalus entered a period of stagnation and decay due, on the one hand, to the harsh political and economic circumstances of the first *fitna* and, on the other hand, to the pressure of religious sectors, who condemned the practice of astrology and other controversial disciplines that had disappeared from the court. The era of ‘Abd al-Raḥmān III prompted the resurgence of the scientific and philosophical traditions. The new situation improved the standards of living of Cordobans and this, in turn, had a beneficial impact on scientific professions. With better revenues than his predecessors, ‘Abd al-Raḥmān III built a new state in which the sciences played an important role. First, they provided tangible services that were considered important by the dynasty. Moreover, they provided intangible but more invaluable assets such as prestige, influence, and symbolic power. The controversial disciplines were brought back to the palace discreetly. It would seem that Maslama b. Qāsim, the prince’s

teacher, taught in the court the most controversial of all scientific matters, alchemy and magic. However, since he belonged to the wrong party in the rebellion of ‘Abdallāh against ‘Abd al-Raḥmān III, it is possible that he wrote the *Rutba* and *Ghāya* for his followers and not for the caliphs. With one eye on the Fāṭimids and another on the religious scholars at home, ‘Abd al-Raḥmān III and his sons al-Ḥakam II and ‘Abdallāh improved the scientific activity of the court in order to strengthen the moral and symbolic authority of the dynasty. However, the caliph avoided direct association with them. Al-Ḥakam took a step ahead. As soon as he acceded to the throne, he tried to change the direction of the *qibla* of Cordoba’s Great Mosque according to the advice of the court experts (most probably astronomers who were also astrologers). Given that the caliph was by no means politically naïve, he probably said to his subjects that reason should guide religion. The religious scholars and the people refused to change the *qibla*, saying that this would be heresy, and the caliph backtracked on his decision. However, he insisted on allowing the practice of astrology in court circles and, in general, allowed a greater presence of polemical subjects in the public life of the learned classes. We can speculate that the caliph might have attempted to foster rational discourse among the learned classes to reproduce in the Andalusī context what al-Ma’mūn did in Baghdad and what ‘Abd al-Raḥmān II attempted to do, albeit unsuccessfully, a century earlier. There is significant evidence that the rational disciplines spread through the court during al-Ḥakam’s rule. Some of this evidence is anecdotal but significant and appealing: the court physicians/philosophers taught astronomy, medicine, and philosophy to the slave singers, in order to please the men of the Cordoban aristocracy, and these women were extraordinarily expensive. Further evidence can be seen in the way al-Manṣūr, in order to appease religious scholars, destroyed books on astrology and philosophy and persecuted those who studied and taught them.

From the middle of the fourth/tenth century onward, the Andalusīs consolidated their knowledge of most of the rational disciplines, particularly medicine, mathematics, astronomy, and astrology. It seems that philosophy lagged behind, although there was a general interest in logic. Circles of specialists consistently emerged; however, most scholars were multifaceted men who showed interest and proficiency in many disciplines. Alchemy and magic were also

important matters in this context, though a good portion of the scientific community had certain reservations about them. Although secluded in small and secret circles, there is more evidence of the practice of these disciplines dating from the time of the Umayyad caliphate and the period immediately afterward than from any other period in the history of al-Andalus. The narrative that connects the practice of magic and alchemy with Maslama al-Majrīṭī and his disciples is problematic. There seems to be more than an element of truth behind these traditions, despite it being chronologically unlikely, yet not impossible, that Maslama al-Majrīṭī wrote *Ghāyat al-ḥakīm* and *Rutbat al-ḥakīm*. The premise that one Maslama was the disciple of the other is a good explanation for many aspects of this history that still puzzle us.

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#### ABSTRACT

Miquel Forcada, *Rational and More Than Rational Sciences in the Umayyad Caliphate: Dialogue, Debate, and Confrontation*

The time of the Umayyad caliphate of Cordoba (early fourth/tenth century to early fifth/eleventh century) represents a crucial phase in the creation of the scientific and philosophical culture of al-Andalus. At the beginning of the fourth/tenth century, the economic and political situation of the Umayyad regime was weak and the rulers were largely unable to sponsor the arts and sciences. Due to the general instability of the time, the rulers needed the support of the religious scholars, and so the disciplines that most of these scholars rejected (namely astrology, philosophy, and rational theology) were banned from the court. The ascent of ‘Abd al-Raḥmān III (r. 300-50/912-61), who proclaimed the caliphate in 316/929, signified a new beginning for scientific and intellectual activity, which flourished until the end of the period, most particularly during the caliphate of al-Ḥakam II (350-66/961-76). There was intense activity in disciplines that appeared particularly controversial in the eyes of religious scholars, like astrology, magic, and alchemy. These and other disciplines made their mark in learned society and at the court. This article explores the political and intellectual considerations underlying this process and analyzes the extent of the practice of controversial disciplines in the context of the period, paying particular attention to the role played by Maslama b. Qāsim and Maslama al-Majrīṭī.

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