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Autor: Callataÿ, Godefroid de

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Godefroid de Callataÿ*

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

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Abstract: Recent scholarship has brought important new insights into the chronology of the writing and dissemination of the *Rasā'il Ikhwān al-Ṣafā'* ('Epistles of the Brethren of Purity'). This new chronological perspective prompts us also to reappraise the pioneering role of the Ikhwān with regard to the problem of classifying knowledge. The first part of this paper will be devoted to this issue. We shall re-examine the tripartite division of science as purposefully designed by the Ikhwān in Epistle 7, as well as another classification in the form of an allegorical fable as found in Epistle 26, and which the Ikhwān have derived from Persian literature. The second part of our contribution will focus on the tenfold classification put forward by Maslama b. Qāsim al-Qurṭubī (d. 353/964), now correctly identified as the genuine author of the *Ghāyat al-ḥakīm* ('The Aim of the Sage') and the *Rutbat al-ḥakīm* ('the Scale of the Sage') and, in all likelihood, as the scholar through whom the *Rasā'il Ikhwān al-Ṣafā'* were first introduced into al-Andalus.

Keywords: classification of the sciences, Ikhwān al-Ṣafā', Maslama b. Qāsim al-Qurṭubī, *Rutbat al-ḥakīm*, *Ghāyat al-ḥakīm*

It is commonly assumed that encyclopaedias are unoriginal works. In his introductory essay on 'encyclopaedic activities in the Islamic world', Joseph van Ess emphatically claimed, for instance, that 'the examples are good altogether for showing

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***Corresponding author: Godefroid de Callataÿ**, Oriental Studies, Université catholique de Louvain, Collège Erasme Place Blaise Pascal, 1, Louvain-la-Neuve, 1348, Belgium.
E-mail: godefroid.decallatay@uclouvain.be

one thing: what we should never expect from any encyclopaedia, whether medieval or modern, is originality'.¹ Having had the *Ikhwān al-Ṣafā'* at the centre of my scientific preoccupations for more than twenty years now, I feel I can affirm, with much the same degree of straightforwardness, that this judgment is not correct.

1 *Ikhwān al-Ṣafā'*

As I have recently argued elsewhere,² the corpus of writings known as *Rasā'il Ikhwān al-Ṣafā'* ('Epistles of the Brethren of Purity') certainly qualifies as one of the best (if not the best) representatives of the encyclopaedic genre in pre-Mamlūk Islamic literature. It is substantial in size, impressively panoramic in scope, insistently dedicated to the teaching of scientific knowledge, obsessively concerned with its inner organization, and overtly eclectic in its use of a wide range of sources. In a word, this corpus fulfils all the criteria most usually acknowledged to define what an encyclopaedia should be. And yet, I would personally never call the *Rasā'il* an unoriginal compilation. Of course, the originality of this work is not so much to be sought for in the cutting-edge quality of its information (although there are indications that the authors did have quite innovative views on certain scientific issues in particular)³ as in the synthesis ultimately achieved and, to an even greater extent, in the ideological bias that lies behind their encyclopaedic project. Far from being mere compilers of sources, the *Ikhwān al-Ṣafā'* were genuine philosophers with their own convictions, their own ethical principles, and their own spiritual aspirations. Their endeavour to put forward a vision of the universe as coherent as possible is perceptible in every part of the work, as is also the constant effort of the authors to re-work and to re-interpret their sources to suit this aim.⁴ In fact, the reading of the *Rasā'il* would rather leave the impression that behind every assertion or comment, and even behind every quotation or reference, there is a firm resolution to make it correspond to a very precise programme and ideological commitment. This re-elaboration of material into a new synthesis is definitely an original process. In my view, it is also what makes the *Rasā'il* such a fascinating subject of exploration.

¹ Van Ess 2006: 13.

² de Callataÿ 2016.

³ On this, see for instance; de Callataÿ 2008a.

⁴ Baffioni 2008.

Browsing through the *Rasā'il Ikhwān al-Ṣafā'*, it would appear at once to any reader that 'putting the House of Wisdom in order' must have been one of the authors' most important concerns. As mentioned above, the Ikhwān never seem to have tired of organizing the knowable in a consistent manner. Epistle 7 ('On the Scientific Arts') contains a classification of the sciences of its own which has for long been acknowledged as one of the finest examples in medieval Islamic literature.⁵

It is a three-fold system, which in the spectrum of sciences distinguishes between the 'propaedeutical' or 'educational' (*al-'ulūm al-riyāḍiyya*), the 'religious and conventional' (*al-'ulūm al-shar'iyya alwaḍ'iyya*) and the 'philosophical and real' (*al-falsafiyya al-ḥaqīqa*). The former are defined as 'sciences of education' (*'ilm al-ādāb*) that have been established for the improvement of life in this world. Under this heading the Ikhwān list nine sciences (or groups of sciences), namely: (1) writing and reading; (2) language and grammar; (3) calculation and operations; (4) poetry and prosody; (5) auguries and auspices, and the like; (6) magic, talismans, alchemy, mechanical devices and the like; (7) professions and crafts; (8) sale and purchase, trades, cultivation, and breeding; (9) the study of campaigns and history.

As opposed to this first group, the sciences making up the latter two groups have the common goal of addressing the human souls not only in this world but also, and more importantly, in the Hereafter. The group of religious and conventional sciences includes six kinds of disciplines, namely: (1) science of revelation; (2) science of interpretation; (3) narratives and reports; (4) jurisprudence, norms and laws; (5) recollection, exhortations, asceticism and mysticism; (6) interpretation of dreams. The group of philosophical and real sciences is subdivided into four categories of sciences: (1) mathematical; (2) logical; (3) physical; (4) divine. Each of these four categories is in turn divided into a number of individual disciplines, making the presentation of the philosophical group by far the largest and the most elaborate part of the description. The mathematical sciences are those of the *quadrivium*: arithmetic, geometry, astronomy, and music. The logical sciences are poetics, rhetoric, topics, analytics, and sophistry. The natural sciences are the science of corporeal principles, the science of the heaven and the world, the science of coming-to-be and passing-away, the science of atmospheric events, and then the three sciences of minerals, plants and animals respectively. Finally, the divine sciences are the knowledge of the Creator, the

⁵ See for instance Rosenthal 1973: 77–101; Marquet 1973: 295–313; Baffioni 1991; Biesterfeldt 2000: 90–92; Biesterfeldt 2002: 67–68.

science of spiritual beings, the science of psychic beings, the science of governance (itself subdivided into five branches), and the science of the Return.

I have already stressed in another study that this classification of science is revolutionary in several important respects.⁶ First, it must have been quite innovative on the Ikhwān's part to group disciplines within the field of '*ādāb*' and to consider this group as a kind of pre-requisite to the other two groups. Besides, and this is of course something that has much greater implications for our concern, the Ikhwān also seem to have been pioneering in the very fact of, say, 'putting on a par' these latter two groups, namely that of the 'religious and conventional sciences' on the one hand and, on the other hand, that of the 'philosophical and real sciences'. As far as we can infer from extant sources, al-Kindī (d. after 870 CE) did not conceive the division of science in the same way. What he did was to distinguish between a human way of acquiring knowledge, based on reasoning and requiring painful effort, and a divine one, which only the prophets can lay claim to by receiving divine, and effortless, inspiration. As for al-Fārābī (d. 950 CE), even if we were to assume that he predates the Ikhwān – an assumption increasingly difficult to sustain today⁷ –, he does not appear to have held the same view as the Ikhwān either.

In the same previous study, I have also proceeded to the comparison of the purposefully-designed classification in Epistle 7 with the sequence of *rasā'il* as they have come down to us in manuscripts, a comparison which the following phrase at the end of Epistle 7 explicitly invites us to do:

We have produced an epistle for each branch of the above-mentioned sciences and mentioned in them some of those meanings, to awaken the negligent and guide the beginners, excite the interests of the students and serve as a path for those who learn.⁸

The passage itself does not allow one to decide whether 'the above-mentioned sciences' (*hādhihi l-'ulūm allatī taqaddama dhikru-hā*) correspond to the sciences of all three groups or only to those of the last one. The comparison with the actual corpus makes it clear, however, that by this expression the authors meant

⁶ See de Callataÿ 2008b. A shorter version of this study may be found in de Callataÿ 2005, where it appears as Chapter 4 ("Encyclopaedism").

⁷ See Hamdani 2011. It is now generally agreed among scholars that the Ikhwānian corpus is the result of a stratified process extended over several generations and that its inception took place at the beginning of the tenth century, if not earlier. That it was known in al-Andalus already by the first half of the tenth century has been demonstrated in various of my recent publications, in particular de Callataÿ 2013; de Callataÿ 2014.

⁸ Ikhwān al-Ṣafā' 1957: I/274. My critical edition, with English annotated translation, of this epistle, is forthcoming in the "Epistles of the Brethren of Purity" at Oxford University Press in association with The Institute of Ismaili Studies.

‘the philosophical sciences’ only. Now, in spite of a clear resemblance in the overall structure, the comparison of the two systems also shows various and sometimes profound dissimilarities which, if need should be, confirm that the corpus as we read it today is the result of a complex and certainly very long process of compilation, as well as of a transmission which remains largely elusive to modern scholarship. Was Epistle 7 one of the first to be written? Were its authors the same *Ikhwān al-Ṣafāʾ* as those who, presumably, decided at some unspecified stage to assemble this collection of about fifty epistles as it is preserved in manuscripts? Besides, given the gap of several centuries between the oldest extant manuscript of the *Rasāʾil* and the supposed time of redaction of the work, how can we discriminate between what was genuinely part of the work and what was interpolated by later transmitters? These questions, and many others posed in turn of the *Rasāʾil*, cannot be given any satisfactory answer, of course.

This said, I shall not enter again here into the detail of the comparison between the classification from Epistle 7 and the arrangement of epistles in manuscripts, but should nevertheless like to insist on one particular thing. When browsing through the Brethren’s encyclopaedia, one should never lose sight of the fact that this work presents itself as a synthesis in which the philosophical and the religious composites, in other words the two main poles found side-by-side in their classification, are already merged with one another in the most inextricable manner. That the authors chose to organize this material according to philosophical principles is, I would argue, only due to the fact that ‘dividing science’ is fundamentally and typically a philosophical issue, and one for which the *Ikhwān* (and many intellectuals of their time) could make use of a long and rich tradition.⁹ This surely helps us to understand why we should not expect to find any *risāla* devoted as such to, say, ‘the science of revelation’ or ‘the science of recollection, exhortations, asceticism and mysticism’, although it is patent to any reader of the *Rasāʾil* that the corpus includes much material from both. As these two examples show, most religious sciences are dealt with in the corpus, and some of them even to a very large extent, yet the reader will find them dealt with from a different perspective, as a result of them being constantly mingled with philosophical ideas. This process is also very original in my view.

Surely enough, a multitude of oddities remain unexplained in the arrangement of the *Rasāʾil* as provided by the manuscripts, and this will hold even truer if one seeks also to incorporate the first group of propaedeutical sciences.

⁹ See in particular Hein 1985.

Whereas some of these mundane sciences or practices, like campaigns and history, are almost completely absent from the corpus, others, such as magic or alchemy, seem to have been deemed worthy of the highest consideration. The epistle ‘On magic, incantations, and the evil eye’ has been placed at the very end of the divine sciences. It occupies therefore the last position of the whole collection, and there are reasons to believe that it was indeed considered the ultimate goal in the progression towards the most ineffable wisdom.¹⁰

Now, there is another passage in the *Rasā'il* concerned with the problem of organizing human knowledge in a coherent manner, and this is found in Epistle 26 (‘On Man as a Microcosm’). Unlike that of Epistle 7, this classification is not part of a purposefully-devoted discussion of this issue but of an allegorical fable, which may explain why it has received so little attention thus far. In this passage, the Ikhwān tell the story of ‘a king amongst the kings, a wise amongst the wise, a lord amongst the lords’ who was resolute to give the best education to his children, this being an absolute pre-requisite for anyone to enter the king’s own *majlis*. To achieve this, he ordered the building of a palace (*qaṣr*) for his children and, inside this palace, a scientific *majlis*. On the walls of this *majlis*, the king wrote all the sciences he wanted to teach them, and everything in which he wanted their souls to be educated. As for the sciences, we are told that they were of six different kinds, each group occupying one particular place of the *majlis*. The text reads:

- (1) On the highest part of the *majlis*’s cupola (*fī a'lā qubbat al-majlis*), the king represented the form of the spheres and explained the modalities of their revolutions, the zodiacal signs with their ascensions and, similarly, for the planets and their movements he explained their significations and rules.
- (2) In the courtyard (*ṣaḥn*) of the *majlis*, he represented the Earth with its divisions and climes, mountain ridges, seas, mainlands and rivers, and he explained the frontiers of the countries, the cities, the routes and the provinces.

¹⁰ Epistle 52 (‘On Magic’) exists in two versions, which appear to have circulated independently from one another. The short version has now been published in: de Callataÿ/Halflants 2011. The long version is currently being prepared by Godefroid de Callataÿ, Bruno Halflants and Sébastien Moureau as part of the same project. For a discussion of these two versions with respect to the rest of the *Rasā'il*, and in particular to Epistle 49 (‘On the Spiritual Beings’), see my introduction to *On Magic I* (de Callataÿ/Halflants 2011: 5–10).

- (3) On the front part (*ṣadr*) of the *majlis*, he recorded the science of medicine and the natural sciences, and he represented the plants, the animals and the minerals according to their species, genres and particularities, with an explanation of their properties, usefulness or harmfulness.
- (4) On another side (*fī-l-jānib al-ākhar*), he recorded the crafts and the professions, and explained the modalities of cultivation and breeding; he [also] represented the cities and the markets, with an explanation of the rules of sale and purchase, profit and trade.
- (5) On another side, he recorded the science of religion and confessions, of Laws and traditions, and he explained what is permitted and what is forbidden, the statutes and decrees.
- (6) On another side, he recorded [the science of] governance and the administration of the kingdom, and he explained the modalities of the collection of taxes, and of secretary and chancellery matters; he [also] explained the wages of soldiers, the protection of the community and its borders by armies and auxiliary troops.¹¹

Faithful to their habit of explaining the role played in a system by each one of its components, the Brethren conclude the story as follows:

In these six kinds of sciences the king's children trained. This is the allegory that the Sages have devised: the wise king is God Most-High; the small children are human kind; the palace [as it is] built is the entire sphere; the *majālis* [as they are] made perfect are the form of man; the education [as it is] represented is the marvel of man's bodily structure; the sciences [as they are] recorded are the faculties of the soul and the soul's knowledge.¹²

The 'House of Wisdom' as described by the Ikhwān in this part of Epistle 26 is thus a six-fold classification. From the spatial indications contained in the passage, we are invited to imagine this *majlis al-ilm* in the form of a cubic structure around a courtyard and surmounted by a hemispherical cupola. Understandably, this cupola is meant to correspond to the science of the stars (astronomy/astrology), whereas the soil of the square courtyard is occupied by geography. As for the four walls surrounding the courtyard, we may perhaps conjecture the following repartition, although the indications of the text are not sufficiently precise to determine the respective positions of each wall with absolute certainty:

Let us briefly comment on this representation. Conspicuously absent from the discussion are the logical sciences and metaphysics, that is, the second and

¹¹ Ikhwān al-Ṣafā' 1957: II/460–461.

¹² Ikhwān al-Ṣafā' 1957: II/461.

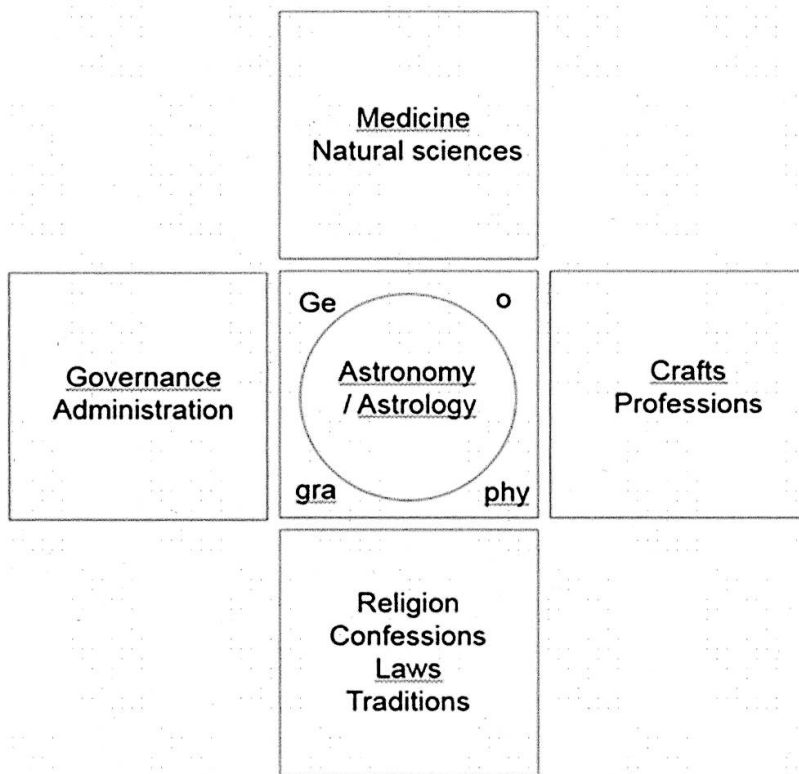


Figure 1: The six-fold classification of knowledge in Epistle 26 of the Ikhwān al-Ṣafā'.

the fourth groups of the philosophical sciences in the classification of Epistle 7. Out of the quadrivium making up the first group, in other words the mathematical sciences, only astronomy is mentioned, but it is complemented here with geography, its little sister and its earthly replica, and it will be recalled here that an epistle on geography was indeed inserted between astronomy and music in the first section of the *Rasā'il*.¹³ The natural sciences, in particular those concerned with the three domains, have their own wall. They share it here with medicine, which was curiously not mentioned in Epistle 7 and to which no epistle is specifically devoted in the corpus. The religious sciences do receive their own wall as well, although it may be observed that they correspond only in part to those mentioned in Epistle 7. In fact, it is perhaps for the group of propaedeutical sciences that the present description and the classification of Epistle 7 show the greatest level of resemblance, with various sub-branches referred to by the same appellations. To these mundane sciences and practices are devoted the two remaining walls of the *majlis*. What is also worth noting is the concluding assertion that education (*ādāb*) is linked to the structure of

¹³ On this Epistle, see now Sánchez/Montgomery 2015. The epistle on geography is one of the very few for which we possess a Latin translation; see Gautier-Dalché 1989.

man's body and that sciences (*'ulūm*) correspond to the faculties of the human soul. This tallies well with the organizing principles at work in the classification of Epistle 7: whereas *adab* disciplines are useful only for the time a soul is attached to a body in this ephemeral existence, true knowledge is what allows a soul to ascend back to its divine origin and this process is not limited by the corporeal life of this world.

All in all, and in spite of some common features, this classification is at times seriously at variance with that of Epistle 7. How can this be accounted for? As is well-known, the Ikhwān were fond of allegorical fables, which they adapted, or else fabricated, to serve their philosophical objectives and didactic purposes. The 'Case of the Animals versus Man Before the King of the Jinn', which occupies the greatest part of Epistle 22 ('On Animals') is certainly the most famous example of a fable which the Brethren appear to have created on their own (albeit incorporating various elements from previous literature), but many others could equally be mentioned.¹⁴ For a great number of these allegories, in particular when they feature kings, it is patent that the Ikhwān were generally content with taking up their material, eventually to re-arrange it, from Iranian or Indo-Iranian traditions.¹⁵ The story of the king who built a decorated *majlis al-'ilm* for his sons, which the Ikhwān affirm to have taken from some 'Sages', is no exception. It is found, in very much the same details, in the Persian *Sindbādnāma*, where it constitutes an important part of the general plot.¹⁶ *Sindbādnāma* is originally a work of Middle Persian literature which had already made its entry into the Arabic world by the beginning of the eighth century, when it was versified in Arabic by Abān al-Lāhiqi (d. c. 815 AD).¹⁷ The Ikhwān could have read the story either in Persian or in Arabic, since they unquestionably knew both languages.¹⁸ In the end, it would appear that, in addition to transforming a cube into a cube plus an hemispherical dome, the only original part in the Brethren's version is the concluding section, with its clearly superimposed Neoplatonic scheme of interpretation.

¹⁴ On Epistle 22, see now Goodman/Mac Gregor 2010. For various other examples of allegorizing narratives purposefully invented by the Ikhwān, see Almutawa 2013.

¹⁵ On this, see in particular Netton 2002: 89–94.

¹⁶ See Al-Zāhīrī al-Samarqandī 1948: 337–340. *Sindbādnāma*, ed. A. Ateş, Istanbul, 1948: 337–340. A French translation of the passage was provided by Bogdanovic 1975: 53. According to this version of the story, the edifice was in the form of a cube, with its six faces devoted respectively to: (1) astronomy/astrology; (2) good manners; (3) medicine; (4) music; (5) geometry; (6) governance.

¹⁷ Zakeri 2012: 47.

¹⁸ In the *Riassunto* he gave of the *Rasā'il*, Alessandro Bausani suggested that the authors could have been Persian natives; see Bausani 1978: 11.

2 Maslama b. Qāsim al-Qurṭubī (d. 964 CE)

Maslama b. Qāsim al-Qurṭubī is a scholar who had remained virtually unknown to modern scholarship until the year 1996. In that year Maribel Fierro published an important article in which she suggested, after a thorough exploration of the sources at hand, that this intriguing Sunnī traditionalist with esoteric aspirations was the genuine author of both the *Rutbat al-Ḥakīm* ('the Scale of the Sage') and the *Ghāyat al-Ḥakīm* ('the Aim of the Sage').¹⁹ Twenty years later, it appears that Fierro's proposal has reached a very large consensus among scholars. Since I have recently dealt myself with this 'other' Maslama in a wide range of studies, focusing on his pioneering role in the reception of the *Rasā'il Ikhwān al-Ṣafā'* in al-Andalus as well as on the chronological implications that this has for the emergence of philosophy in the Iberian Peninsula, I shall refer the reader interested by these issues to those publications,²⁰ and devote the rest of the present contribution exclusively to the issue of Maslama's classification of the sciences, with an attempt at identifying potential sources of inspiration.

Above all, it is important to recall for which purpose and with which conception in mind Maslama wrote these 'twinning' books. As he makes it clear himself in both prologues, alchemy and magic should be considered, in this order, the last two sciences of the *curriculum scientiarum* of 'the Sage', that is, in other words, the truly accomplished philosopher. To these two sciences lead, as if by way of a philosophical ladder, all the rest of the sciences and this is the reason why he called (1) alchemy (to which the *Rutbat al-ḥakīm* is dedicated) and (2) (astral) magic (to which the *Ghāyat al-ḥakīm* is dedicated) the 'two conclusions' (*natījatān*) of philosophy. In agreement with this view, Maslama b. Qāsim al-Qurṭubī wrote the *Rutba* first, between 339/950 and 342/953, and then, almost immediately after, the *Ghāya*, between 343/954 and 348/959. Maslama died shortly after this date, in 353/964.

In the prologue of the *Rutba* is found a reference to 'the ten sciences which the Ancients have mentioned and which they have made indispensable, since whoever fully grasps them also fully grasps everything (*al-'ulūm al-'ashara allatī dhakarāt-hā l-awā'il wa-ja'alat-hā 'ulūm^{an} ḍarrūriyya man aḥāṭa bi-hā fa-qad aḥāṭa bi-jāmi' al-ashyā'*).'²¹ Maslama does not identify these sciences by their names in this passage, but refers again to them a few lines further as:

¹⁹ Fierro 1996.

²⁰ See, in addition to the already quoted article 'Magia en al-Andalus', de Callataÿ 2014–2015; de Callataÿ/Moureau 2016a; de Callataÿ/Moureau 2016b; de Callataÿ/Moureau 2017.

²¹ *Rutba*, ms. Istanbul, Ragıp Paşa, 965, fol. 50v.

the propaedeutical sciences by which minds exercise themselves in the pursuit of the subtleties of the sciences (*al-‘ulūm al-riyāḍiyya allatī tarūḍu l-adhhān li-taqīfa ‘alā laṭā‘if al-‘ulūm*). Indeed, these propaedeutical sciences yield to the science of philosophy, which is for the Ancients the knowledge of the upper phaenomena, and they have not mentioned any other science behind that one (*thumma hādhihi l-riyāḍiyya tantiju ‘ilm al-falsafa allatī hiya ‘inda-hum ma‘rifat al-athār al-‘ulwiyya wa-lam yadhkurū ba‘da dhālika ‘ilm^{an} ghayr^{an}*). Indeed, they have explained in their writings that these sciences, when they are mastered, are indications of the secrets of the world, which they call the secrets of nature (*inna-hum sharḥū fī awḍā‘i-him anna hādhihi l-‘ulūm idhā uḥkamāt dallat ‘alā asrār al-‘ālam wa-hiya allatī yusammūna-hā asrār al-ṭabī‘a*), and since it is this way, it is inevitable that these sciences which they call the secrets of nature are the conclusions to those above-reported sciences (*fa-idhā kāna hākadhā fa-lā maḥalla an tilka llatī sammūhā asrāran ṭabī‘iyya hiya natā‘ij hādhihi l-‘ulūm al-mutaqaddama al-dhikr*).²²

In other words, beyond the ten propaedeutical and ‘exoteric’ sciences, there is another kind of science concerned with the very secrets of nature, and this is the knowledge of ‘the upper phaenomena’ – an expression traditionnally used to refer to Aristotle’s *Meteorologica* but which in the present context appears to signify that the secret influence of the heavenly beings should be regarded as the culmination of the philosophical process.²³ This other type of knowledge, more subtle than the rest, is unique, although the end of the passage suggests that it can effectively be referred to in the plural as *esoterica*. Indeed, a few pages later in the same prologue is found the unequivocal affirmation that:

There are two conclusions. The Ancients called the first one of them “*kīmiyā*” and they called the other one “*sīmiyā*”. These are the two sciences of the Ancients, of which one can profit. Whoever has not achieved them is no sage until he masters them, and he who masters [only] one of them is [only] half a sage. Both share [the quality of] being subtle. For “*kīmiyā*” is the knowledge of earthly spirits and the advantageous extraction of their subtleties; the other is [the science] called “*sīmiyā*”, and is the *tarjih* (literally, ‘the fact of giving the preponderance to something’), the [art of] talismans and of syllogisms,

²² *Rutba*, ms. Istanbul, Ragıp Paşa, 965, fol. 51r.

²³ On this specific sense of the expression, see Lewin 1986–1987, here p. 737: ‘In the Arab tradition of the Meteorology, starting from Ibn al-Biṭrīq, down to Ibn Rushd, the doctrine vaguely indicated by Aristotle (339a 20–21) of the influence of the Spheres on the sub-lunar world is interpreted in conformity with the astrological theory expounded for example in the Book of the Treasure of Alexander (...). According to this theory, “the world below follows the world above, and the individual bodies of the former are subject to those of the latter, because the air is contiguous (*muttaṣil*) to the exterior of all the bodies and to the Spheres as well”. As noted by Lewin, the theory that meteors are the result of influences from the supra-lunar world is found, among various other works, in Epistle 19 of the *Rasā’il Ikhwān al-Ṣafā*’, that is, the one specifically devoted to ‘the Meteors’ (*al-āthār al-‘ulwiyya*). See now Baffioni 2014: 225–228.

and this is the science of the superior spirits and of how to call down their powers advantageously.²⁴

As said before, the detail of Maslama's classification of the sciences is not found in the *Rutba*, which corresponds to the first of the two conclusions, but it occurs in the last *maqāla* of the *Ghāya*, that is almost at the end of the second conclusion. It seems appropriate to start by quoting the passage in full:

With perseverance – May God fortify you – and training in sleepness as in wakefulness (*wa-l-riyāḍa fī-l-nawm wa-l-yaqza*) [there are] people who have managed to arrive at the point where they can apprehend the two lofty conclusions (*min idrāk al-naṭijatayn al-rafi'atayn*), after having mastered the ten sciences, five of which are a pre-requisite for the legislators, and five for the philosopher (*ba'da iḥkām al-'ulūm al-'ashara allatī l-khamsa min-hā ḍaruriyya ma'rifatu-hā bi-wāḍi'i l-nāmūs wa-l-khamsa min-hā ma'rifatu-hā ḍaruriyya bi-l-faylasūf*):

- (1) First comes the science of agriculture (*filāḥa*), pasture (*ri'āya*) and navigation (*malāḥa*), which are of prime necessity for the foundation of cities and the prosperity of civilisation therein; it is indispensable to have a previous knowledge and a preliminary science of these issues, as well as of the books written about them.
- (2) Then comes the science of commandment of the armies (*qawd al-juyūsh*), war strategies (*makāyid al-ḥurūb*), taming of animals (*riyāḍat al-dawābb*), veterinary medicine (*bayṭara*), and falconry (*bazdara*).
- (3) Then comes the civic science (*'ilm al-madanī*), which is in charge of the urban matters such as grammar (*naḥw*), language (*lughā*), good manners (*adab*), fundamentals [of jurisprudence] (*uṣūl*), [religious] duties (*farā'id*), knowledge and understanding of what the relevant religious community ordains (*ma'rifat aḥkām tilka l-milla wa-tafaqquh fī-hā*), the genres of writing (*kitāba bi-aṣnāfi-hā*), chancellery (*ṣinā'at al-wathā'iq*); to this category pertains in fact all that is useful in cities for the development of a particular religious community.
- (4) Then come all the political sciences (*al-siyāsiyāt bi-jumlati-hā*). Some of them are general, such as the policies of cities (*siyāsāt al-mudun*) altogether; some are in between the general and the specific, such as the policy of a particular city (*siyāsāt madīna mā*) for what is specific to it; some occupy an intermediate status, such as the policy of a household (*siyāsāt al-manzīl*); some are particular, such as the policy of man for himself (*siyāsāt al-insān nafsi-hi*).
- (5) Then comes the science of ethics (*al-'ilm al-akhlāqī*), and the books written about it.
- (6) Then come all the mathematical sciences (*al-'ulūm al-riyāḍiyya bi-jumlati-hā*), and they are of four kinds:
 1. arithmetic (*al-'adad*), consisting of commercial transactions (*al-mu'āmalāt*), algebra (*al-jabr*), and the science of inheritance (*al-farā'id*);
 2. geometry (*al-handasa*), both theoretical and practical (*'ilmiyya wa-'amaliyya*), consisting of surface measuring (*al-misāḥa*), the science of fractions (*taksīr*), weight lifting (*raf' al-athqāl*), ballistics (*'amal al-majānīq*), ingenious devices

²⁴ *Rutba*, ms. Istanbul, Ragıp Paşa 965, ff. 52rv. For a discussion of this other passage, see de Callataÿ/Moureau 2016b.

- working with water and air (*al-ḥiyāl al-mā'iyya wa-l-hawā'iyya*), burning mirrors (*al-marāyā al-muḥarriqa*), and optics (*al-manāẓir*);
3. the science of the stars (*al-nujūm*), consisting of [solid] geometry (*al-handasa*), astronomy (*al-hay'a*), value distribution (*ta'dīl*), and financial judgements (*al-qaḍā'*) under which [the science of] multiplications (*al-tarbīḥ*) [is found];
 4. music (*al-mūsīqā*), consisting of rhythm (*al-iqā'*) and prosody (*al-'arūd*).
- (7) Then comes the science of logic (*'ilm al-manṭiq*), as contained in eight books, which the first sage supplied us with, illuminating our perceptions.
 - (8) Then comes the science of medicine (*'ilm al-ṭibb*) in its entirety, both as a [proper] science such as when it deals with universalities (*al-'ilm bi-kulliyyāti-hi*), and as a practice when it comes to its applications; in this section fall pharmacology (*al-ṣaydala*) and chirurgery (*ṣinā'at al-yad*) in the form of surgeries (*jirāḥāt*) and eye therapy (*'ilāj al-'ayn*).
 - (9) Then comes the science of nature (*al-'ilm al-ṭabī'ī*), as is contained in a number of books which the sage wrote down. After him, [certain] men busied themselves with the commentaries of these books, and devoted most of their energies to reach this objective. One is *The Book of Physics* (*kitāb al-samā' [al-ṭabī'ī]*), then [we find] *The Book of Heaven and the World* (*kitāb al-samā' wa-l-'ālam*), *The Book of Coming-To-Be and Passing-Away* (*kitāb al-kawn wa-l-fasād*), *The Book of the Upper Phaenomena* (*kitāb al-athār al-'ulwiyya*), *The Book of Minerals* (*kitāb al-ma'ādīn*), *The Book of Plants* (*kitāb al-nabāt*), *The Book of Animals* (*kitāb al-ḥayawān*), *The Book of the Soul* (*kitāb al-naḥs*), *The Book of Sense and Perception* (*kitāb al-ḥiss wa-l-maḥsūs*), *The Book of Health and Illness* (*kitāb al-ṣiḥḥa wa-l-maraḍ*), *The Book of the Local Motions of Animals* (*kitāb ḥarakat al-ḥayawān al-makāniyya*). Whoever looks at these books and encompasses scientifically what they contain will encompass scientifically the science of nature in the most possible accomplished way.
 - (10) Then comes the science of metaphysics (*'ilm mā ba'da l-ṭabī'a*), which the sage supplied with thirteen treatises. In these treatises, he has enabled the reader to reach what he had wished, and provided him with hope and desire.

It is with right, dear reader, that those two conclusions are the conclusions of these sciences, since nobody will grasp, encompass, discover – yes, I am saying 'discover' – those [conclusions] except who has genuinely acquired these sciences and verified their correctness, and this one is the accomplished philosopher. Maybe, dear reader, will you wake up from the sleepiness of negligence ...²⁵

Here is thus at last the full exposition of the tenfold classification alluded to by Maslama in the prologue of the *Rutba*. It is a curious system, in fact, which immediately strikes the modern reader by its explicitly endorsed distribution in two groups of five sciences, one said to be a pre-requisite for 'the legislators', and the other for 'the philosopher'. The contrasted use of the plural in the first case and of the singular in the second is, I would assume, quite telling in itself, for it suggests that the first group of sciences remains forever dependent on the

²⁵ *Ghāyat al-ḥakīm* 4.5 in Ritter, ed. 1933: 333–335.

situation of a particular community of people, whereas the sciences making up the second group can truly be considered universal.

Let us examine how the two groups are constituted. The ‘philosophical group’ is presented in a very classical manner. The sequence “mathematics – logic – physics – metaphysics” faithfully reproduces the *ordo disciplinarum* as we find it in the *Rasā’il* as well as in the *Epistle of the Number of the Books of Aristotle* by al-Kindī, to name only two of the most famous examples. The only ‘novelty’ with respect to these compositions is the adjunction of medicine, which is notoriously absent in these two classifications but regularly mentioned in association with the natural sciences, as we have just seen with the *majlis* simile in the *Rasā’il*, or even considered one of them. The group of ‘legal sciences’ is clearly more problematic, as it appears to combine elements of distinct provenance. Whereas the second half of the group – especially the political sciences and ethics – suggests a possibly direct influence from Aristotle’s conception of practical philosophy, the first half seems to mix together a few properly-called legal sciences, such as the fundamentals of jurisprudence and the religious duties, and a large collection of disciplines that would be best qualified as *adab*, and which the Ikhwān indeed range among the group of educational sciences.

As for the emphasis on governance, particularly noticeable in the second and the fourth subdivisions of those ‘legal sciences’, it seems to me much reminiscent of the tradition of Pseudo-Aristotelian works in the style of the *Sirr al-asrār*, with their typical blend of disciplines designed to guarantee the complete and successful education of the prince.²⁶ In fact, this connection with the mirror for princes literature makes much sense as soon as one remembers that Maslama b. Qāsim al-Qurṭubī should himself be regarded as a genuine man of court, at least at a certain stage in his life. The evidence for this we infer for sure from the fact that, some time after his return from his long *riḥla* in the East, Maslama had amongst his students ‘Abd Allāh, who was the son of the caliph ‘Abd al-Raḥmān III. It appears that ‘Abd Allāh was accused of conspiring against his father, which led to his execution in 951 CE, possibly in the form of a symbolic sacrifice and by the hand of the caliph himself, as was recently argued by Maribel Fierro.²⁷ As for Maslama, what is definitely worth observing is that his life does not appear to have ever been put in jeopardy, although his esoteric bias is frequently denounced in medieval sources. Clearly enough, an important distinction must be made between the trenchant criticism of bāṭinism

²⁶ On this aspect, see in particular Forster 2006, here 68–81 (“Staatsorganisation und Kriegsführung”). See also Coulon 2013: 337–338.

²⁷ See Fierro 2012, here 128 and 141–143.

as passed on by some later religious scholars and what would rather appear as a resolutely more conciliatory attitude from the ruling classes.²⁸

Turning back to our tenfold system, where did Maslama take it from? Or did he invent it? In a footnote to their German translation of the *Ghāya*, Hellmut Ritter and Martin Plessner described this tenfold classification as ‘ein Unikum’ in Arabic literature.²⁹ They did mention two other examples of tenfold classifications, yet immediately ruled out that these could be somehow closely related to the present system. One will not detain us here for long, since it does, indeed, not seem to be comparable to our classification in any other than a loose and far-fetched way. I refer here to the Pseudo-Avicennian alchemical *De anima*, for which we may now use Sébastien Moureau’s brand new critical edition. This voluminous treatise, the Andalusī Latin adaptation and compilation of three lost Arabic works, provides us with a classification of the sciences in two groups, made respectively of four and six disciplines.³⁰ The first group includes the following sciences, which the author refers to as ‘mothers’ (*matres*): (1) dialectics; (2) geometry; (3) [the science of] natures; (4) the science of the firmament. The second group consists of the six following sciences, called ‘daughters’ (*filiae*): (5) algorism; (6) arithmetic; (7) the theory of medicine; (8) music; (9) astronomy; (10) philosophy, this last being defined as ‘the science which pervades the whole world’ (*quae habitat totum mundum*) and also identified as ‘the magisterium’. For each one of these sciences, the

28 I understand *bāṭinīs* here in the general sense of people concerned with the esoteric interpretation of the Qur’ān, whether it be in line with *ṣūfism* or with other specific trends of Islamic thinking such as *ismā’ilism*. Much remains to be investigated on this general issue. In particular, current scholarship is in need of a better assessment of the role played by the tenth-century rulers in al-Andalus in the reception of ‘unorthodox’ material eventually derived from *Ismā’īlī* or *Ismā’īlī*-like milieus. On the hypothesis that the decoration of the palatial city of *Madīnat al-Zaḥrā’* was inspired by elements taken from the *Ghāyat al-ḥakīm*, see Acién Almansa 1995, in particular p. 188 (where the passage on the ten sciences is explicitly referred to). The point was taken over by Maribel Fierro, who notes: ‘What Acién suggested regarding the possible influence of the *Ghāyat al-ḥakīm* in the vegetal decoration of the Hall was the relationship established in that work between stars and plants. Plants play a prominent role in the *Ghāya* because of their connection with the stars and planets, their use in different kinds of filters and enchantments, and also because of their place in the chain of creation and in the chain of scientific knowledge. In fact, the first science is agriculture and the last is metaphysics that only the consummate philosopher is able to master, thus becoming like God within the limits of human capacity (Fierro 2012, here, p. 131).

29 Ritter/Plessner 1962, here 349, n. 1: ‘Die folgende Aufzählung von Wissenschaften und Wissenschaftsgruppen erscheint als ein Unikum in der umfangreichen Einteilungsliteratur, sowohl was das Prinzip der Einteilung als auch was die Reihenfolge betrifft’.

30 See Moureau 2016: I/ 41–46. For the passage on the classification of the sciences, see II/ 622–627.

author explains in which sense it is useful for the practice of alchemy. In spite of a certain similarity in both the structure and the perspective – two groups of sciences, ten in all, as a pre-requisite to a more subtle and secret science –, it must be acknowledged that the comparison of this classification with that of the *Ghāya* does not lead us very far.

The other tenfold classification mentioned by Ritter and Plessner is more interesting for our purposes. The *Ādāb al-falāsifa*, a most influential compilation of aphorisms traditionally attached to the name of the celebrated scholar and translator Ḥunayn Ibn Ishāq (d. 260/873), includes an edifying story about the way Aristotle is said to have secretly learnt the different branches of knowledge from his master Plato and then publicly demonstrated his incomparable mastering of them all.³¹

The story is alleged to have taken place at the time of the king Rufiṣṭānīs, in one of these golden houses which, according to the custom of ‘the Greek kings and others’ (*al-mulūk min al-yunāniyyīn wa-ghayri-him*), were built for the kings’ sons and which, in exactly the same manner as in the previously mentioned *Sindbādnāma* and the *Rasā’il Ikhwān al-Ṣafā’*, were decorated with all sorts of pictures in order for the princes to be educated in the different branches of philosophy and *adab*. Rufiṣṭānīs had appointed ‘Plato the Sage’ (*aflātūn al-ḥakīm*) to teach his own son Niṭāfūris, but this latter was a retarded and most stupid pupil. Among Plato’s disciples there was also the orphan, and miserably dressed, Aristotle, who was just the opposite. While, day after day, Plato taught Niṭāfūris wisdom in vain, Aristotle was able to understand whatever lessons the master gave and to memorize his teaching thoroughly, but this he did in secret, leaving Plato completely unaware of his improvements. This lasted for some time, until it was decided, again in agreement with the usual practice, to celebrate the end of the prince’s apprenticeship by a sumptuous ceremony in which he would climb the stairs of a pulpit and demonstrate his mastering of philosophy and good conduct before all the dignitaries. As expected, and to Plato’s great dismay, Niṭāfūris proved unable to utter a single word of his master’s wisdom. To dispel any doubt about Plato’s qualifications, the other disciple now climbed the pulpit and showed in the most patent way that he had himself been thoroughly instructed by the same master, which prompted everyone in the audience to praise both Plato and Aristotle for their respective genius. It would be too long to reproduce here the numerous philosophical maxims which Aristotle is reported to have started his speech with according to the same source, but it is definitely worth quoting

31 Badawī 1985: 48–55.

the end of the passage, since it is there that we are told that Plato's instruction to Aristotle consisted of ten sciences:

This is (1) the kind of education which the Sage teaches his disciple first (*wa ḥādha al-ṣanf min al-ādāb awwal mā yu'allimu-hu al-ḥakīm li-l-tilmīdh*), that is, in the first year, along with Greek writing (*al-khaṭṭ al-yūnānī*). Then he raises him from there to (2) poetry (*shī'r*) and (3) grammar (*naḥw*), and then successively to (4) arithmetic (*ḥisāb*), (5) geometry (*handasa*), (6) astronomy (*nujūm*), (7) medicine (*ṭibb*), (8) music (*mūsīqā*), and then, after that, he [the disciple] ascends to (9) logic (*manṭiq*) and to (10) philosophy (*falsafa*), which is the science of the upper phaenomena (*'ulūm al-āthār al-'ulwiyya*). These are the ten sciences which the disciple learns in ten years (*fa-ḥādhihi 'ashara 'ulūm yata'allamu-ha al-muta'allim fī 'ashara sinīn*). When Plato the Sage realized how scrupulously Aristotle had memorized what he had taught Niṭāfūris, he was pleased with his talents at memorizing and with his [other] natural qualities. And when he realized that the king had ordered him to choose him, he chose him and devoted his attention to him and taught him the sciences until he knew by heart the ten sciences (*ḥattā wa'ā al-'ulūm al-'ashara*). [And so Aristotle] became a sage philosopher in all that has been mentioned above (*wa-ṣāra faylasūfan ḥakīman jāmi'an li-mā taqaddama dhikru-hu*). (Badawī 1985: 55)

The provenance of this legend has retained the attention of various scholars in modern times. By the end of the nineteenth century, Anton Baumstark already dismissed the idea that it could have been inspired by a Greek or even a Syriac model and pointed towards Persia as the most probable place of origin.³² This line of interpretation, which is based upon elements such as the bizarre names of the king and the prince or the descriptions of lavish architectures, sculptures, and furniture, was followed more recently by Mohsen Zakeri, who also considers 'utterly Persian (...) the whole courtly "philosophers gatherings", which we find also in the Persian-Byzantine-Indian kings tale'.³³ As a matter of fact, if there is one work to which this section of the *Ādāb al-falāsifa* seems to echo with particular nearness, it is, again, the *Sindbādnāma*, as Zakeri himself observes in the same place: 'This recalls the famous *Sindbādnāma*, where the ten golden words, the essence and summary of all human wisdom originally written on the walls the palace of Āfrīdūn (Frētōn), were copied on the walls of wisdom and Sindbād was to teach them to the prince'.³⁴

A later, yet partly deformed, echo of the same tradition is found in *al-Majmū' al-Mubārak* ('The Blessed Collection'), the world chronicle of the thirteenth century Coptic historian Girgīs al-Makīn (d. 1273). In the section devoted

³² Baumstark 1898: 6–7.

³³ Zakeri 2004: 182.

³⁴ Zakeri 2004: 181.

to Alexander the Great, one comes across the following assertion, which I reproduce from Wallis Budge's translation of the Ethiopian version of the text:

Now there are some who say that Aristotle, the sage, the teacher of Alexander, taught the ten sciences of the earth and established them, and that he composed many treatises on the healing of the body, besides other well-known books.³⁵

From disciple Aristotle has now become a master, and there is no longer the mention that the instruction lasts for ten years, yet it is most likely that we are dealing with essentially the same story, as was already noted by Plessner.³⁶ As to the question of whether this tradition of ten sciences in line with the figure of Aristotle can be related to the tenfold system of the *Ghāya al-ḥakīm*, Plessner was also categorical, but in the opposite direction: 'Bei Ḥunain Ibn Ishāq, *Ādāb al-falāsifa*, I ii findet sich ebenfalls eine Aufzählung von 10 Wissenschaften, die der Schüler in 10 Jahren erlernen soll; sie ist mit der hier vorgeführten nicht verwandt'.³⁷

I would remain less assertive. Although the arrangement of sciences in the *Ādāb al-falāsifa* is a far cry from that of the *Ghāya*, I think that enough evidence has been adduced above to suggest that both may have been inspired by a common tradition which, just like the story of the decorated *majlis* in the *Rasā'il*, ultimately derives from an Iranian model. Although I would suspect that Pseudo-Aristotelian works may have played an important role in this process, tracing up the channels by which this Persian tradition reached authors such as the Ikhwān or Maslama is beyond the limit of the present contribution.³⁸

35 Wallis Budge 1896, 382. It is a pity that no edition of the Arabic version of this text has been established so far, for this would no doubt bring some fresh light on various important issues, and in particular on the numerous Pseudo-Aristotelian works which al-Makīn refers to by names or just alludes to in that part of the text. For an overview of the Aristotelian and Pseudo-Aristotelian works in Arabic literature, see in particular: Ryan/Schmitt (ed.) 1982; Krayer/Ryan/Schmitt (ed.) 1986, as well as the contributions of various scholars (most particularly Maroun Aouad, Rüdiger Amzen, Michel Cacouros, Cristina D'Ancona, Richard Taylor, Johannes Thomann, Mauro Zonta) as part of Goulet (ed.) 1989.

36 Plessner 1925: 918–919: 'wie ja überhaupt der Zusammenhang al-Makīns (und schon Eutychius) mit dieser Schrift [= *Ādāb al-falāsifa*] unverkennbar ist'.

37 Ritter/Plessner 1962: 349, n. 1.

38 In a complementary study to appear in the proceedings of the conference 'Classification of Knowledge in the Islamic West' (Madrid, 28–29 November 2016) convened by Maribel Fierro and Jan Thiele, I deal with some further aspects of this issue, taking into account other examples of tenfold classifications apparently not known to Plessner. My warmest thanks to one of the blind reviewers of the present contribution for pointing to me one of these references in Arabic literature, namely, the anonymous 11th century *Book of Curiosities* recently edited by Youssef Rapoport and Emily Savage-Smith (2014).

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