

Article

The Theology of Multilingualism and the Making of the Islamic Cosmopolis

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Abstract

Specialists in multilingualism have long debated the role played by religious conceptualisations of linguistic diversity in fostering or hindering specific language practices and policies. With regard to Western societies, the myth of Babel has frequently been associated with the emergence of negative attitudes towards linguistic diversity. Conversely, Islamic civilisation developed a positive theology of language diversity, grounded in Qur'anic hermeneutics and Islamic prophetology, that not only accepted the multiplicity of human tongues as a divine sign but actively justified their adoption as vehicles of knowledge and power. The present contribution investigates the contours of what may be termed an 'Islamic theology of multilingualism': the epistemological framework that legitimised the use of multiple languages, including vernaculars bereft of any former written tradition, in education, literary composition, and administration. Drawing on textual passages from the Qur'an, the Ikhwān al-Ṣafā', al-Fārābī, al-Mubashshir, and Ibn 'Arabī, the article argues that Islamic prophetology—by positing a universal prophecy that adapts to the linguistic and cultural conditions of each human group—provides the theological foundation for a theory of vernacular as *locutio naturalis*, and that this framework is a key element in the making of the Islamic cosmopolis.

Keywords: Islamic multilingualism; Islamic prophetology; language diversity; vernacular; *locutio naturalis*; Islamic cosmopolis; Qur'anic hermeneutics; Islamic linguistic thought

1. Introduction

Specialists in multilingualism have often raised the issue of the role played by different religious conceptualisations of linguistic diversity in fostering or hindering specific language practices and policies. With regard to Western societies, the myth of Babel has frequently been associated with the emergence of negative attitudes towards linguistic diversity (Pollock 2006, pp. 476–77; Hamilton and Silleras-Fernandez 2022, p. 11). Conversely, as far as Islamic civilisation is concerned, scholars have frequently pointed out the development of a positive theory of language diversity as part of the overall providential vision of ethnic and cultural differences within Islam (Borst 1957, p. 326).

This difference is not merely a matter of doctrinal emphasis. It has far-reaching consequences for the way in which linguistic diversity was managed, legitimised, and celebrated across the vast territories of the premodern Islamic world. Islamic civilisation is, in the formulation of William Chittick, 'clearly logocentric' (Chittick 1989, chap. XV), and the role played within it by language is, as Pierre Lory observed, 'complètement axial' (Lory 2004, p. 8).

Yet this logocentrism does not entail monolingualism. The Qur'anic conception of revelation simultaneously privileges Arabic as the language of the Qur'an and recognises



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the divine origin of earlier revelations, each addressed to distinct communities within their own linguistic horizons, thereby grounding a theological affirmation of the dignity and legitimacy of linguistic plurality. As Islam addressed peoples of diverse languages and cultures, the universality of its message could not be confined to Arabic alone. At the same time, Arabic retained its privileged status as the language of the Qur'an, Islamic thought, interpretation, and religious expression developed across a plurality of linguistic worlds.

The present contribution investigates the contours of what may be termed an 'Islamic theology of multilingualism'. By this expression, we mean the epistemological framework—grounded in the hermeneutic engagement with the Qur'anic verses dealing with language diversity and tightly intertwined with the tenets of Islamic prophetology—that justified the adoption of the multiple languages encountered by the expanding Islamic civilisation as vehicles of knowledge and power. Within such a framework, a theory of vernacular as *locutio naturalis*—to use an expression dear to Dante—makes its way and becomes the fundamental rationale for the transformation of several vulgar languages, bereft of any former written tradition or linguistic prestige, into full-fledged languages employed in education, literary composition, and administration. Moreover, the Islamic prophetological framework provides a symbolic interpretation for the existence of different languages and paves the way for the broader Islamic vision of ethnic, cultural, and religious diversity which is a key element in the making of the Islamic cosmopolis (Borrut 2024, p. 168; Ricci 2011, pp. 1–4; MacLean 2012, pp. 1–2; on the multilingual poetics of the premodern Islamic world(s), see also Rashwan (2024a) and the studies gathered in Rashwan et al. 2024).

The article proceeds as follows. Section 2 examines the Qur'anic foundations of the Islamic theology of multilingualism. Section 3 analyses the role of prophetology in articulating the multilingual structure of revelation and key textual witnesses to the Islamic theology of multilingualism, from the Ikhwān al-Ṣafā' to Ibn 'Arabī. Section 4 explores the doctrine of vernacular as *locutio naturalis* and its role in the vernacularisation of Islamic knowledge and in the making of the Islamic cosmopolis. Section 5 offers conclusions.

2. The Qur'anic Foundations: Language Diversity as Divine Sign

The starting point for any analysis of the Islamic theology of multilingualism must be the Qur'an itself. The Holy Book of Islam contains what may be regarded as an explicit theology of linguistic and ethnic diversity, and it does so in terms that are strikingly positive. As Umberto Eco has noted, in the Qur'an the *confusio linguarum* is 'regarded not as a curse but as a natural event' (Eco 1995, p. 352).

One of the most theologically significant passages in this regard is Qur'an XXX:22, which presents the variety of human tongues and colours as a sign (*āya*, pl. *āyāt*) of God:

وَمِنْ آيَاتِهِ خَلْقُ السَّمَاوَاتِ وَالْأَرْضِ وَالاخْتِلَافُ اَللِّسِنَتِكُمْ وَالْوَاوِكُمْ اِنَّ فِي ذٰلِكَ لَاٰيَاتٍ لِّلْعٰلَمِيْنَ

And of His signs is the creation of the heavens and earth and the variety of your tongues and hues [*ikhṭilāf alsinati-kum wa-alwāni-kum*]. Surely in that are signs for all living beings (Qur'an XXX:22).¹

The term *āya*, which also designates a verse of the Qur'an, is used here in the sense of a cosmic sign, or rather a symbol, pointing to the Creator. The variety of tongues is placed alongside the creation of the heavens and the earth as evidence of God's power and wisdom. This placement is theologically significant: linguistic diversity is not a problem to be resolved but a reality to be contemplated and understood as a manifestation of the divine will. A further and complementary Qur'anic passage underscores this dimension by framing ethnic and linguistic differentiation as an opportunity for mutual knowledge:

يَا أَيُّهَا النَّاسُ اِنَّا خَلَقْنٰكُمْ مِنْ ذَكَرٍ وَاُنْثٰى وَجَعَلْنٰكُمْ شُعُوْبًا وَّقَبَاۗٔلَ لِتَعَارَفُوْا

O mankind, We have created you male and female, and appointed you races and tribes [*shu 'ūban wa-qabā'il*], that you may know one another (Qur'an XLIX:13).

The Qur'an is equally explicit in affirming that linguistic pluralism reflects a divine choice, not a divine punishment. Had God willed it otherwise, all of humanity would have been made into a single community:

وَلَوْ شَاءَ اللَّهُ لَجَعَلَكُمْ أُمَّةً وَاحِدَةً وَلَكِنْ لِيَبْلُوَكُمْ فِي مَا آتَاكُمْ فَاسْتَبِقُوا الْخَيْرَاتِ إِلَى اللَّهِ مَرْجِعُكُمْ جَمِيعًا

If God had willed, He would have made you one nation [*umma wāhida*]; but that He may try you in what has come to you. So be you forward in good works; unto God shall you return, all together (Qur'an V:48).

The fact that linguistic diversity is thus inscribed within the providential design of creation constitutes the theological bedrock upon which the Islamic theology of multilingualism rests. Consequently, the existence of different languages [*ikhtilāf al-alsina*] is considered in Islam as part of God's providential design and one of His signs. The variety of tongues is not an accident of history, nor the aftermath of a catastrophic punishment. It is, from the outset, a dimension of the sacred order of the created world. This Qur'anic foundation has far-reaching implications: every language, being part of God's providential design, is in principle worthy of respect and capable of serving as a vehicle for truth.

3. Prophetology and the Islamic Theology of Multilingualism

If the Qur'an grounds the legitimacy of linguistic diversity in the order of creation, Islamic prophetology extends this legitimacy into the domain of revelation itself. The key passage in this regard is Qur'an XIV:4, which declares that every messenger was sent speaking the language of his own people:

وَمَا أَرْسَلْنَا مِنْ رَّسُولٍ إِلَّا بِلِسَانٍ قَوْمِهِ لِيُبَيِّنَ لَهُمْ

And We have sent no Messenger save with the tongue of his people [*bi-lisāni qawmi-hi*], that he might make all clear to them (Qur'an XIV:4).

This verse establishes a structural principle of profound importance: divine revelation is not monolingual. Every people, every community, received its prophet speaking in its own language. The implication is that 'every human language might have been a vehicle of God's message sometime in the history of the speakers of that language' (Syed 1986, p. 79).

The scope of this principle is further expanded by two additional Qur'anic passages. First, the Qur'an acknowledges that not all prophets and messengers are mentioned within its pages:

وَلَقَدْ أَرْسَلْنَا رُسُلًا مِنْ قَبْلِكَ مِنْهُمْ مَنْ قَصَصْنَا عَلَيْكَ وَمِنْهُمْ مَنْ لَمْ نَقْصُصْ عَلَيْكَ

We sent Messengers before thee; of some We have related to thee, and some We have not related to thee (Qur'an XL:78).

This verse suggests that the Qur'an presents only a partial account of divine revelation, leaving open the existence of many other prophetic figures beyond those explicitly named. This notwithstanding, the universality of prophethood is emphasized in the following passage:

وَلَقَدْ بَعَثْنَا فِي كُلِّ أُمَّةٍ رَسُولًا

We sent forth among every nation [*umma*] a Messenger [*rasūl*] (Qur'an XVI:36).

These verses, taken together, imply that the number of prophets sent across the history of humanity is vast. According to a celebrated *ḥadīth* reported by Ibn Hibbān (d. 965), the total number of prophets (*anbiyā'*, sing. *nabī*) amounts to the extraordinary figure of 120,000,

of whom 313 are considered messengers (*rusul*, sing. *rasūl*) who brought new sacred laws (*sharīʿa*) (al-Fārsī 2014, p. 453, *ḥadīth* 361). It is worth noting that Islamic prophetology draws a technical distinction between *nabī*, ‘prophet’, and *rasūl*, ‘messenger’: every *rasūl* is a *nabī*, but not every *nabī* is a *rasūl*; a *rasūl* is specifically a prophet who brings a new divine law (*sharīʿa*) for his community.

The theological consequence of these principles is remarkable. If every *umma* received a messenger, and every messenger spoke the language of his people, then the plurality of human languages is a structural feature of the economy of revelation itself. Every language, in principle, carries within it a trace of prophetic speech. The multiplicity of tongues is thus the echo, dispersed across the face of the earth, of the multiplicity of divine messengers. This prophetological framework also provides a model for understanding how truth—conceived in Islamic thought as fundamentally one—can be expressed through a variety of linguistic and religious forms without losing its essential unity. Thus, within Islamic thought, the diversification of languages and that of religions become symbolically intertwined. Language diversity (*ikhtilāf al-alsina*) and religious diversity are parallel phenomena, both rooted in the same providential logic of divine accommodation to human difference.

A further dimension of the prophetological principle of linguistic accommodation is illuminated by the Qur’anic expression that immediately follows the statement that every messenger was sent speaking the language of his people: *li-yubayyina la-hum*, ‘that he might make all clear to them’ (Qur’an XIV:4). The phrase connects directly to the Arabic root *b-y-n*, which carries the meanings of clarity, evidence, and intelligible distinction. This suggests that the very purpose of the linguistic adaptation of revelation is *bayān*—perspicuity, or the capacity of a message to be genuinely understood by those to whom it is addressed. As the Andalusian theologian Ibn Ḥazm (d. 1056) formulated this principle: *wa-innamā wuḍiʿat al-lughāt li-l-bayān*, ‘languages were instituted for nothing other than [the purpose of] clarification’ (Ibn Ḥazm 2016, p. 313). Commenting on this view, Roger Arnaldez noted that in the Qur’anic perspective *bayān* must be regarded as an intrinsic characteristic of language as such: ‘D’une façon générale, l’éclaircissement (*bayān*) est lié à la fonction de langue’ (Arnaldez 1956, p. 74). No language, consequently, is constitutively opaque or incapable of serving as a vehicle of divine clarification: every tongue, precisely by being a tongue, participates in the universal vocation of *bayān*.

The anonymous authors of the famous medieval Islamic encyclopaedia known as the *Rasāʾil Ikhwān al-Ṣafāʾ* (‘Epistles of the Brethren of Purity’, tenth century) addressed the question of linguistic diversity directly in Epistle 31, whose full title reads: ‘On the reasons of the difference in languages, speech, sounds, graphic figures and writings’ (Ormsby 2021, p. 107). From the very beginning of this treatise, the Ikhwān al-Ṣafāʾ relate the variation in languages to that of opinions, beliefs, and religions, establishing what they call the investigation of the *ʿilal ikhtilāf al-lughāt* (‘reasons behind the diversification of languages’):

إِنَّ مَعْرِفَةَ عِلَلِ اخْتِلَافِ اللُّغَاتِ وَالْأَصْوَاتِ وَرُسُومِ الْخُطُوطِ وَالْكِتَابَاتِ، وَكَيْفِيَّةِ مَبَادِي الْمَذَاهِبِ، وَاعْتِقَادَاتِ
الْأَرْءَاءِ وَالذِّيَّانَاتِ، وَأَصْلِ تَكْوِينِهَا وَمَبْدِئِهَا وَظُهُورِهَا وَمُنْتَشِئِهَا وَتَرْيِبِهَا وَنُمُوِّهَا وَكَثْرَتِهَا [...] لَا تَكُونُ إِلَّا بَعْدَ النَّبَيِّانِ
وَالْإِضْطِحَاحِ عَنِ الْأَصْلِ الَّذِي تَفَرَّعَتْ عَنْهُ هَذِهِ الْأُمُورُ

Know that knowledge of the causes of the diversity of languages [*ʿilal ikhtilāf al-lughāt*]—[namely,] how the principles of the different schools of thought [*al-madhāhib*] arose with their agreements [*al-iʿtiqādāt*], their opinions [*al-ārāʾ*], their religions [*al-diyānāt*] and the basis of their development; their beginnings, their emergence, their genesis and their increase together with their flourishing and their multiplicity; [...]—such knowledge cannot be known except after explanation and elucidation of the root-cause [*aṣl*] from which these matters branched

out [*tafarra* 'at] (Ikhwān al-Ṣafā' 1985, vol. III, pp. 84–85; translated by Ormsby 2021, pp. 50, 108).

The Ikhwān al-Ṣafā' locate the origin of this diversity in the adaptation of the sons of Adam to the different astrological, environmental, and climatic conditions of the regions (*aqālīm*, sing. *iqlīm*) they inhabited after their dispersion across the earth. Each people (*qawm*), settled in its own region and under the influence of its governing star (*kawkab min al-kawākib al-sab'a al-mudabbirāt*), developed its own language and its own sacred legislation according to:

مِزَاجَ طَبَائِعِهِمْ، وَأَهْوَايَةِ بُلْدَانِهِمْ، وَمَوَادِّ أَغْذِيَّتِهِمْ، وَمَا أُوجِبَتْ لَهُمْ دَلَالِيلُ مَوَالِيدِهِمْ، وَمَا تَوَلَّاهُمْ مِنَ الْكَوَاكِبِ فِي وَضْعِ
أَصْلِ تِلْكَ اللُّغَةِ فِي الْإِبْتِدَاءِ الْوَضْعِيِّ وَالْمُنْهَاجِ الشَّرْعِيِّ، وَمَا تَقَرَّعَ مِنْ ذَلِكَ الْأَصْلِ، وَمَا يَنْقَسِمُ مِنْ ذَلِكَ النَّوْعِ

the mixture of their natures, their climate, their food-stuffs, and what the signs at their birth and the governance of the stars over them made necessary for them when their language [*al-lugha*] was originally established [*waḍ'*] and laid down; as well as their juridical [sacred] procedures [*al-minhāj al-shar'i*]

(Ikhwān al-Ṣafā' 1985, vol. III, pp. 114–15; translated by Ormsby 2021, pp. 76, 142).

Each language is therefore the expression of the peculiarities of a specific human group and somehow encapsulates its particular vision of reality. The same logic applies to religions and sacred laws. In this framework, as the fourteenth-century Arab poet Ṣafī al-Dīn al-Hillī (d. 1349) memorably expressed it, every *lisān* ('language') identifies with an *insān*, a human being or rather a particular portion of mankind:

يَقْدَرُ لُغَاتِ الْمَرْءِ يَكْتُرُ نَفْعُهُ/فَتِلْكَ لَهُ عِنْدَ الْمَلِمَاتِ أَعْوَانُ
تَهَافَّتَ عَلَى جَفْظِ اللُّغَاتِ مُجَاهِدًا/فَكُلُّ لِسَانٍ فِي الْحَقِيقَةِ إِنْسَانُ

A man's worth is measured by the languages he knows/and these are for him in adversity a succour/so dedicate yourself to language learning with commitment and passion/for in reality every language is a humanity [*fa-kullu lisānin fi l-ḥaqīqati insān*] (al-Hillī 1962, p. 669).

This remarkable verse encapsulates the positive valorisation of multilingualism within the Islamic tradition. Each language does not merely express a culture: it embodies a humanity, a specific mode of being human in the world. The acquisition of multiple languages is therefore not a purely technical skill but a form of knowledge that broadens one's understanding of the human condition.

The great philosopher Abū Naṣr al-Fārābī (d. 950) provides another important articulation of the parallel between linguistic and religious diversity in his celebrated work *al-Madīna al-Fāḍila* ('The Perfect State'). As Richard Walzer notes in his commentary, for al-Fārābī 'the various religious groups differ just as languages vary, although they all reproduce, in symbolic form, one and the same metaphysical truth' (al-Fārābī 1985, p. 477).

This parallel between languages and religions is of the utmost importance for the Islamic theology of multilingualism. If languages are, like religious traditions, different symbolic expressions of a single underlying reality, then the plurality of human tongues does not threaten the unity of truth but rather enriches our apprehension of it. The famous parable of the grapes in Rūmī's *Masnavi* illustrates this principle with great clarity. Four men from different countries quarrel over how to spend a coin, each proposing to buy what he calls by a different name—*angūr* (Persian), *inab* (Arabic), *üzüm* (Turkish), *staffyli* (Greek)—not realising that all four words designate the same fruit. The mystic who knows all four languages, remarks Rūmī, can unite what ignorance has divided (Rūmī 2007, pp. 216–17). Plurilingualism here is not just an intellectual accomplishment; it is a practical instrument of reconciliation and unity.

A further and particularly striking textual witness to the Islamic theology of multilingualism is provided by the historian al-Mubashshir (d. 1097) in his *Kitāb mukhtār al-ḥikam*

wa-mahāsin al-kalim ('Selected Maxims and Aphorisms'). In this work, different historical religions are presented as adaptations, operated by the antediluvian prophet Idrīs (the Islamic Enoch), of the primordial religion of humanity (*dīn al-qayyim*) to the particular conditions of different human groups. According to the account preserved by al-Mubashshir, Idrīs addressed the peoples of the entire earth in seventy-two languages:

وَدَعَا الْخَلَائِقَ مِنْ أَهْلِ سَائِرِ الْأَرْضِ إِلَى الْبَارِي عَزَّ وَجَلَّ بِأَتْنَيْنِ وَسَبْعِينَ لِسَانًا، وَأَتَاهُ اللَّهُ الْحِكْمَةَ فَكَلَّمَهُمْ بِلُغَتِهِمُ
الْمُخْتَلَفَةِ وَعَلَّمَهُمْ وَأَدَّبَهُمْ [...] وَأَقَامَ لِكُلِّ إِقْلِيمٍ سُنَّةً تَلِيْقُ بِهِمْ وَتُقَارِبُ آرَاءَهُمْ

In seventy-two languages he [Idrīs] called the people of the entire earth's population to worship the Creator, the Mighty and High. God granted him wisdom (*al-hikma*) so that he spoke to them in their different languages, taught them and educated them. [...] he established for each region (*iqḷīm*) a model of religious practice (*sunna*) for them to follow which corresponded to their views (al-Mubashshir 2018, pp. 12–14; translated by van Bladel 2009, p. 186).

The connection in this passage between the seventy-two languages in which Idrīs spoke and the different religious practices he established for different peoples is striking and directly relevant to the Islamic theology of multilingualism. Each human group receives both a sacred law appropriate to its conditions and a message delivered in its own tongue. The linguistic and the religious accommodations are parallel and inseparable.

It is furthermore noteworthy that, for the Sufi master al-Dabbāgh (d. 1719), Adam's original language—the *suryāniyyah*—remained intact among his descendants until the time of Idrīs (al-Lamaṭī 2002, p. 184; O'Kane and Radtke 2007, pp. 426–27). The dispersion of the sons of Adam across the different regions of the earth, and their adaptation to different environmental conditions, then brought about the fragmentation of the primordial tongue into the variety of human languages. The loss of the original language was simultaneously a loss of knowledge—'an awesome science was lost because of ignorance of the meanings of the letters and knowledge of their secrets' (al-Lamaṭī 2002, pp. 183–84; O'Kane and Radtke 2007, p. 426)—but also the condition for the emergence of the rich diversity of human tongues and religious traditions.

The most philosophically rich articulation of the Islamic theology of multilingualism is to be found in the writings of the great Andalusian Sufi master Ibn 'Arabī (d. 1240), known as *al-shaykh al-akbar* ('the Greatest Master'). For Ibn 'Arabī, the plurality of languages is directly connected to the plurality of divine names and the inexhaustible richness of divine reality. In the Chapter of Hūd of his *Fuṣūṣ al-Ḥikam* ('The Ringstones of Wisdom'), he issues a famous warning against the epistemological dangers of exclusive attachment to a single religious or linguistic perspective:

فَإِيَّاكَ أَنْ تَتَّقِدَ بَعْدَ مَخْصُوصٍ وَتَكْفُرَ بِمَا سِوَاهُ فَيَقُوتَكَ خَيْرٌ كَثِيرٌ، بَلْ يُقُوتُكَ الْعِلْمُ بِالْأَمْرِ عَلَى مَا هُوَ عَلَيْهِ، فَكُنْ فِي
نَفْسِكَ هَيُولَى لِنُورِ الْمُعْتَقَدَاتِ كُلِّهَا، فَإِنَّ اللَّهَ تَعَالَى أَوْسَعُ وَأَعْظَمُ أَنْ يَحْصُرَهُ عَقْدٌ دُونَ عَقْدٍ

Beware lest you bind yourself with a specific belief [*ʿaqd makḥṣūṣ*] and reject others, for much good [*khayr kathīr*] will escape you. Indeed, the knowledge of reality as it is will escape you [*al-ʿilm bi-l-amr ʿalā mā huwa ʿalay-hi*]. Be then, within yourself, a hyle for the forms of all belief, for God is too vast and too great to be confined to one belief to the exclusion of another

(Ibn 'Arabī 2024, p. 199; translated by Dagli 2004, p. 101).

Ibn 'Arabī develops this theme most explicitly in his *Risālat al-anwār* ('Epistle of Lights'), where he articulates a vision of spiritual realisation as a journey through the languages of all prophetic revelations. The text reads:

[عَلَيْكَ الَّذِي لَطَرِيْقُهُ مُنَاسِبَةٌ سَالِكِ كُلِّ وَغَايَةُ سِيَرِهِ مِنْ وَكُلِّ لُغَتِهِ، بِغَيْرِ يُنَاجِي مَنْ وَمِنْهُمْ بِلُغَتِهِ يُنَاجِي مَنْ فَمِنْهُمْ سَلَكٌ،]
 نُوجِي بِلُغَتِهِ، آيَةً لُغَةٍ كَانَتْ، فَإِنَّهُ وَارِثٌ لِبَنِي ذَلِكَ اللِّسَانِ، وَهُوَ الَّذِي تَسْمَعُهُ عَلَى أَلْسِنَةِ أَهْلِ هَذِهِ الطَّرِيقَةِ أَنْ فُلَانًا
 مُوسَوِيٌّ وَعِيسَوِيٌّ وَإِبْرَاهِيمِيٌّ وَإِدْرِيسِيٌّ، وَمِنْهُمْ مَنْ يُنَاجِي بِلُغَتَيْنِ وَثَلَاثٍ وَأَرْبَعٍ فَصَاعِدًا. وَالْكَامِلُ مَنْ يُنَاجِي بِجَمِيعِ
 اللُّغَاتِ، وَهُوَ الْمُحَمَّدِيُّ خَاصَّةً

For each traveller [on the path of knowledge and spiritual realization], the journey's end depends on the road he has taken. Some will be spoken to in their own language [*bi-lughati-hi*], others in a language which is different from theirs [*bi-ghayr lughati-hi*]. Each will be the heir of the prophet who corresponds to the language [*lisān*] he has had spoken to him. [...] But there are some among them who will be spoken in two languages, or three, or four, and so on [*bi-lughatayni, wa-thalātha wa-arba' fa-ṣā'idan*]. Perfect [*al-mukammal*] among them is he who is spoken in all languages [*bi-jamī' āl-lughār*]: this is the exclusive privilege of the Muḥammadan [*al-muḥammadī khāṣṣatan*] (Ibn 'Arabī 2001, p. 129; translated in Chodkiewicz 1993, p. 170).

This passage is remarkable for several reasons. First, it transposes the prophetological principle of linguistic accommodation into the domain of metaphysical realisation: the Sufi traveller inherits the spiritual station of the prophet whose language he has received. Here, inheritance denotes a form of spiritual succession through which the traveller participates in, and actualises, a particular mode of relation to the divine Reality represented by that specific prophet. Second, it establishes a hierarchy of perfection in which the capacity for multilingualism marks a higher degree of spiritual and epistemological attainment. The perfect knower is not the one who speaks a single sacred language, however exalted, but the one who has access to all the languages of all the prophetic revelations. Third, this privilege of universal linguistic comprehension is identified with the specifically Muḥammadan spiritual type: the one who embodies the universality and totality of the prophetic function.

The theological basis for this claim is developed at length in the *al-Futūḥāt al-makkiyya*, where Ibn 'Arabī grounds the Muḥammadan perfection of multilingualism in the doctrine of *jawāmi' al-kalim*, the synthesis of all words:

وَلَمَّا كَانَتْ الدَّوْلَةُ فِي الْآخِرَةِ لِمُحَمَّدٍ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، الْمَوْثَى جَوَامِعِ الْكَلِمِ، وَهُوَ الْأَصْلُ، فَإِنَّهُ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ
 أَعْلَمَ بِمَقَامِهِ، فَعَلِمَهُ وَأَدَمَ بَيْنَ الْمَاءِ وَالطِّينِ لَمْ يَكُنْ بَعْدُ

Since the dominion in the Afterlife belongs to Muḥammad, upon whom be the peace and blessings of God, who was given the gift of the synthesis of words, and this is the foundation, he knew his own station while Ādam was still between the water and the clay, not yet created (Ibn 'Arabī 1911, vol. II, p. 88).

Because Muḥammad's reality is the origin and completion of the prophetic function, all the languages of the prophets fall within the compass of the Muḥammadan reality.

This spiritual polyglot is what Ibn 'Arabī calls the *walī kāmīl*, the perfect saint, who 'invokes God in every spiritual station and in every language': *al-walī al-kāmīl yad'ū Allāh bi-kull maqām wa-lisān* (Ibn 'Arabī 1911, vol. III, p. 167). The Muḥammadan saint is free to invoke *bi-kull lisān*, in any language, because he has been commanded to believe in all the messengers and in all that was revealed to them, and his spiritual station is therefore not limited to any single prophetic tradition. But this universality is not merely the sum of all the particular stations; it is rather, as Ibn 'Arabī specifies in a further passage of the *Futūḥāt*, what he describes as the *maqām lā maqām*, the 'station of no-station': the one who *jama'a l-maqāmāt, thumma kharaja 'an-hā ilā lā maqām*, 'has gathered all the spiritual stations, then transcended them to reach the station of no-station' (Ibn 'Arabī 1911, vol. I, p. 223). The perfect polyglot, who has passed through and assimilated all the languages of all the

prophetic revelations, embodies precisely this ‘station of no-station’: having gathered all perspectives, he is no longer confined to any one of them.

The metaphysical foundations of this position can be explored in the study of the science of letters (*‘ilm al-hurūf*) and its doctrine of the multiple states of the Word (*marātib al-kalām*). The science of letters, as Lory has argued, represents ‘un prolongement naturel’ of the interest in Qur’anic language within Islamic civilisation (Lory 2004, p. 11) and provides, in the words of Denis Gril, a ‘métalinguistique et une métaphysique énonçant les principes de la production du langage’ (Gril 2008, p. 196). Within this framework, God’s Word (*kalām Allāh*) descends from an original unmanifest and metacosmic state through the three worlds of spiritual (*‘ālam al-arwāh*), imaginal (*‘ālam al-khayāl*), and physical (*‘ālam al-ajsām*) manifestation, eventually taking the shape of human language, as expressed in the *Futūḥāt al-Makkiyah*:

فَعَنِ الْحُرُوفِ اللَّفْظِيَّةِ يُوجَدُ عَالَمُ الْأَرْوَاحِ، وَعَنِ الْحُرُوفِ الرَّقْمِيَّةِ يُوجَدُ عَالَمُ الْجَسَنِ، وَعَنِ الْحُرُوفِ الْفِكْرِيَّةِ يُوجَدُ
عَالَمُ الْعَقْلِ فِي الْخَيَالِ

And from the uttered letters arises the world of spirits, and from the written letters arises the world of sensation, and from the mental letters arises the world of the intellect in the imagination (Ibn ‘Arabī 1911, vol. II, p. 123; author’s translation).

This cosmological vision of language lends metaphysical depth to the Islamic theology of multilingualism: every human tongue, however humble, participates in the descent of the divine Word into the multiplicity of creation.

The doctrine of the multiple levels of existence (*marātib al-wujūd*) further illuminates why multilingualism carries epistemological weight in Ibn ‘Arabī’s framework. Both the word and the world, in their coming into being, proceed through multiple ontological and cosmological levels of existence. The multiple levels of existence are thus related to the multiple levels of the meanings that can be discovered behind both linguistic and cosmological phenomena (Chittick 1989, p. 14).

4. The Making of the Islamic Cosmopolis

The theological framework described in the preceding sections does not remain at the level of abstract doctrine. It has a direct and momentous practical consequence: it provides the epistemological foundations for the legitimation of vernacular languages—languages deprived of classical prestige and of any former written tradition—as worthy vehicles for the transmission of Islamic knowledge.

This process of vernacularisation of Islamic teaching unfolds with particular intensity in the late thirteenth and early fourteenth centuries, directly contemporary with Dante’s elaboration of his conception of the vulgar tongue in the *De vulgari eloquentia*. The parallel between the two cultural contexts is illuminating. In both cases, the ennoblement of the vernacular is grounded in a theology of primordial language: the claim that the vulgar tongue, despite its apparent lowliness, is the natural and original language of humanity.

For Dante, the vernacular is the *locutio naturalis*: ‘the language originally used by the human race’, ‘natural to us’, superior in nobility to the artificial *grammatica* of the learned (DVE I, I, 4). Within the Islamic tradition, a structurally analogous doctrine is elaborated around the concept of the *suryāniyyah*, the primordial language of Adam, which, though lost to ordinary human consciousness, continues to infuse every language that descended from it. As al-Dabbāgh’s disciple al-Lamāfī reports: the traces of the Adamic language pervade ‘all languages the way water is diffused within wood’ (*fī jamī‘i al-lughātī saryāna al-mā‘i fī al-‘ūdi*; al-Lamāfī 2002, p. 183; O’Kane and Radtke 2007, p. 425). Moreover, traces of this primordial tongue survive in the speech of infants, who access it naturally as long as they are nursing, before being shaped by the conventions of their particular cultural

and linguistic environment (al-Lamaṭī 2002, p. 184; O’Kane and Radtke 2007, p. 428). The *suryāniyyah* is thus related to the *fiṭrah*, the ‘primordial nature’ upon which, according to both Qur’an XXX:30 (*fiṭrat Allāh allatī faṭara l-nāsa ‘alay-hā*) and a celebrated *ḥadīth* (*mā min mawlūdīn illā yūladu ‘alā l-fiṭrati*, *Ṣaḥīḥ al-Bukhārī* 1358), all human beings are born. The *suryāniyyah* is therefore the language of man’s original, unfallen state, the *locutio naturalis* of Islamic linguistic thought.

The Islamic proponents of vernacular composition made this argument explicit. The Bengali poet Ābdul Hākīm (d. 1690), justifying his decision to compose religious texts in the local language, appeals directly to the prophetological principle of linguistic accommodation: God sent prophets to every people in their own tongue; therefore, no language is intrinsically profane or unworthy of carrying the divine message (d’Hubert 2019, p. 104).

As Roger Arnaldez noted, the doctrine of the Adamic language as surviving within every sacred language means that ‘pour toute langue qui détient un dépôt révélé, la langue adamique représente une norme idéale, selon laquelle il faut comprendre les textes pour saisir la vérité pure qu’ils contiennent’ (Arnaldez 1956, p. 47). The inner reality of every language, however popular or ‘vulgar’, connects it to the primordial Word. This theological claim is what makes possible the progressive transformation of languages like Turkish, Punjabi, Sindhi, Bengali, and many others into vehicles of Islamic learning and literary culture (Schimmel 1982, pp. 135–69; Orsini 2023, pp. 14–16). In both Dante’s linguistic theology and the Islamic one, the vernacular is defended not merely on pragmatic grounds but on the deeper claim that the vulgar tongue participates in the dignity of the primordial language.

The theological and philosophical framework described in the preceding sections has direct and far-reaching implications for the political and cultural dimension of the premodern Islamic world. The concept of the ‘Islamic cosmopolis’—the vast and cosmopolitan civilisational space created by the expansion of Islam across the Afro-Eurasian world—presupposes precisely the kind of tolerant and integrative attitude towards linguistic and cultural diversity that the Islamic theology of multilingualism provides (Borrut 2024, p. 168; Ricci 2011, pp. 1–4; MacLean 2012, pp. 1–2).

The Islamic cosmopolis is not a monolingual empire. From its earliest centuries, the Islamic world was characterised by an extraordinary degree of multilingualism (Rashwan 2024a, pp. 605–7). Arabic, Persian, Syriac, Greek, Hebrew, and later Turkish, Urdu, Bengali, Swahili, and many other languages coexisted within a single civilisational framework. The Islamic theology of multilingualism provides a clear and coherent justification for this linguistic plurality: because every language is potentially a vehicle of prophetic speech, no language is in principle excluded from the Islamic civilisational project. Because linguistic diversity is an *āya* of God’s creative power, it is to be respected and celebrated, not suppressed. Because the perfect knower (*al-mukammal*) is the one who has access to all the languages (*bi-jamī ‘āl-lughāt*) of all the prophetic revelations, multilingualism is an epistemological and spiritual virtue, not merely a practical necessity.

The practical consequences of this theological orientation are visible in the linguistic policies of the early Islamic empire itself. As Petra Sijpesteijn has demonstrated, the caliphate did not attempt to impose a wholesale Arabic-only administration but instead ‘opted for the active maintenance of a multilingual administration’, preserving and even investing in pre-existing multilingual infrastructures for centuries after the establishment of Arab rule. This approach, Sijpesteijn observes, reflected ‘the awareness that governing many different peoples, with diverse customs and practices, was best accomplished in a variety of languages’ (Sijpesteijn 2024, p. 78). The management of the resulting civilisational plurality operated, in Antoine Borrut’s formulation, through ‘two main competing cosmopolitan strategies, assimilation and subordination’ (Borrut 2024, p. 179): where as-

simulation sought to eliminate cultural differences, subordination instead recognised them and organised them within a coherent civilisational framework. The Islamic theology of multilingualism provided the conceptual basis for the latter strategy, legitimating the on-going plurality of languages as a positive expression of the divine design rather than a problem requiring a solution.

Recent scholarship on the workings of the early Islamic Empire has underscored that this linguistic plurality was a structural feature of the Islamic civilisational project from its very origins. The five regions studied in the research project on the early Islamic Empire—Ifriqiya, al-Shām, the Jazīra, Fārs, and Khurāsān—were selected precisely because of “the diversity of their people, languages, religions and cultures” (Heidemann 2020, p. 12), a diversity that the caliphate had to accommodate and govern without recourse to linguistic or religious uniformity. The resulting civilisational space has been aptly described, with specific reference to a later phase of its history but with implications reaching back to its earliest foundations, as “an intellectual and civilizational zone that transcended political borders, territorial confines, and cultural particularities” (Alavi 2015, p. 6): a definition that captures the deep structural compatibility between the Islamic theology of multilingualism and the civilisational project of the Islamic cosmopolis.

This theological framework made possible what Pollock (2006), in a different but related context, has called the ‘vernacularisation of culture’: the process by which local languages were progressively elevated to the status of vehicles for high culture, the literature, and administration (Pollock 2006, pp. 1–36). Pollock traced this process in the South Asian context through the transition from the Sanskrit cosmopolis—the transregional cultural space shaped by Sanskrit as a language of literary and political expression—to the ‘Vernacular Millennium’ beginning around the turn of the second millennium CE, when local speech forms were ‘newly dignified as literary languages’ and began to challenge Sanskrit for the work of poetry and polity (Pollock 2006, p. 1). The Islamic world’s vernacular revolution, though proceeding from distinct and specifically Islamic theological premises, displays structural analogies with this South Asian process that invite comparative reflection (on the comparative mentality of premodern Arabo-Islamic culture, see Rashwan 2024b). In the Islamic world, this process was explicitly justified by the prophetic argument: if every messenger spoke the language of his people (*bi-lisāni qawmi-hi*), and if every language is a potential vessel of divine revelation, then the composition of religious and literary texts in Persian, Turkish, Bengali, or Swahili is not a compromise but a theologically grounded cultural choice. As Bruce Lawrence has argued—drawing on Marshall Hodgson’s comparative Islamic history—“Islam is radically cosmopolitan in its origins” (Aljunied 2016, chap. xviii); and it is precisely the theological foundations identified in the preceding sections of this article that ground and explain this cosmopolitan vocation. Scholars like the Ikhwān al-Ṣafā’, al-Fārābī, Ibn ‘Arabī, and many others provided the intellectual tools with which Muslim thinkers could legitimate and celebrate this multilingual heritage, and their contributions constitute a central chapter in the history of ideas about language, diversity, and the sacred.

5. Conclusions

The present contribution has argued that the premodern Islamic world developed a coherent and sophisticated theology of multilingualism, grounded in Qur’anic hermeneutics and Islamic prophetology, that constitutes a central element in the making of the Islamic cosmopolis. This theology rests on three interconnected pillars.

The first is the Qur’anic affirmation of linguistic diversity as a divine sign (*āya*), part of the providential order of creation and a manifestation of God’s creative power. The *confusio*

linguarum, far from being a punishment for human hubris, is in the Islamic perspective a gift and an invitation to mutual knowledge and understanding.

The second pillar is the prophetological principle of linguistic accommodation: every messenger was sent speaking the language of his own people (*bi-lisāni qawmi-hī*), and every human community received its prophetic guidance in its own tongue. This principle implies that every human language is in principle a vehicle of divine revelation, and that the plurality of languages (*ikhtilāf al-alsina*) is a structural feature of the economy of salvation, not a regrettable deviation from an original monolingual ideal.

The third pillar is the mystical and philosophical elaboration of these principles by thinkers such as the Ikhwān al-Ṣafā', al-Fārābī, Ibn 'Arabī, and others, who developed a vision of multilingualism as an epistemological and spiritual virtue. For Ibn 'Arabī, the perfect knower (*al-mukammal*) is the one who has access to all the languages (*bi-jamī' āl-lughāt*) of all the prophetic revelations; plurilingualism is not merely a practical skill but a path towards the reintegration of the unity that underlies the diversity of human tongues and religious traditions.

These three pillars together constitute what we have called an 'Islamic theology of multilingualism'. This theology provided the intellectual and spiritual foundations for the legitimization of vernacular languages as vehicles of Islamic knowledge—the theoretical basis for a process of vernacularisation that, from the Mediterranean to South and Southeast Asia, transformed local tongues bereft of any former written tradition into full-fledged languages of culture, literature, and administration. It is a key element in the making of the Islamic cosmopolis: the vast, multilingual, and multicultural civilisational space that constitutes one of the most remarkable achievements of premodern human history.

Future research might profitably investigate the specific mechanisms by which this theological framework was transmitted and adapted across different linguistic and cultural contexts within the Islamic world, and the ways in which it interacted with local traditions and prestige hierarchies in shaping the multilingual landscapes of the premodern Islamic cosmopolis.

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¹ The translation used for Qur'anic passages, unless otherwise stated, is that of [Arberry \(2008\)](#).

References

- Alavi, Seema. 2015. *Muslim Cosmopolitanism in the Age of Empire*. Cambridge, MA: Harvard University Press.
- al-Fārābī, Abū Naṣr. 1985. *Al-Farabi on the Perfect State*. Edited and Translated by Richard Walzer. Oxford: Oxford University Press.
- al-Fārsī, 'Alā' al-Dīn ibn Balbān. 2014. *al-Iḥsān fī taqrīb ṣaḥīḥ Ibn Ḥibbān*. Cairo and Beirut: Dār al-ta'wīl.
- al-Hillī, Ṣafī al-Dīn. 1962. *Dīwān*. Edited by Butrus al-Bustānī. Beirut: Dār Ṣādir.
- Aljunied, Khairudin. 2016. *Muslim Cosmopolitanism: Southeast Asian Islam in Comparative Perspective*. Edinburgh: Edinburgh University Press.
- al-Lamaṭī, Aḥmad. 2002. *al-Ibrīz min kalām sayyidī 'Abd al-'Azīz al-Dabbāgh*. Beirut: Dār al-kutub al-'ilmiyyah.
- al-Mubashshir, ibn Fātik. 2018. *Kitāb mukhtar al-ḥikam wa-maḥāsīn al-kalīm*. Beirut: Dār al-kutub al-'ilmiyyah.
- Arberry, Arthur J. 2008. *The Koran*. Oxford: Oxford University Press.
- Arnaldez, Roger. 1956. *Grammaire et Théologie chez Ibn Hazm de Cordoue*. Paris: Vrin.

- Borrut, Antoine. 2024. Towards an Arabic Cosmopolis: Culture and Power in Early Islam. In *Navigating Language in the Early Islamic World. Multilingualism and Language Change in the First Centuries of Islam*. Edited by Antoine Borrut, Manuela Ceballos and Alison M. Vacca. Turnhout: Brepols, pp. 167–91.
- Borst, Arno. 1957. *Der Turmbau von Babel. Geschichte der Meinungen über Ursprung und Vielfalt der Sprachen und Völker. Band I*. Stuttgart: Anton Hiersemann.
- Chittick, William C. 1989. *The Sufi Path of Knowledge. Ibn al-‘Arabī’s Metaphysics of Imagination*. Albany: State University of New York Press.
- Chodkiewicz, Michel. 1993. *The Seal of the Saints: Prophethood and Sainthood in the Doctrine of Ibn ‘Arabī*. Translated by Liadain Sherrard. Cambridge: The Islamic Texts Society.
- Dagli, Caner K. 2004. *Ibn al-‘Arabī. The Ringstones of Wisdom (Fuṣūṣ al-Ḥikam)*. Chicago: Kazi Publications.
- d’Hubert, Thibaut. 2019. Persian at the Court or in the Village? The Elusive Presence of Persian in Bengal. In *The Persianate World. The Frontiers of a Eurasian Lingua Franca*. Edited by Nile Green. Oakland: University of California Press, pp. 93–112.
- Eco, Umberto. 1995. *The Search for the Perfect Language*. Translated by James Fentress. Oxford and Cambridge: Blackwell.
- Gril, Denis. 2008. La science des lettres. In *Les illuminations de la Mecque*. Edited by Michel Chodkiewicz. Paris: Éditions Albin Michel, pp. 163–282.
- Hamilton, Michelle M., and Nuria Silleras-Fernandez. 2022. Iberian Babel: An Introduction to Translation and Multilingualism. In *Iberian Babel: Translation and Multilingualism in the Medieval and the Early Modern Mediterranean*. Edited by Michelle M. Hamilton and Nuria Silleras-Fernandez. Leiden and Boston: Brill, pp. 1–14.
- Heidemann, Stefan. 2020. Introduction: Transregional and Regional Elites—Connecting the Early Islamic Empire. In *Transregional and Regional Elites—Connecting the Early Islamic Empire*. Edited by Hannah-Lena Hagemann and Stefan Heidemann. Berlin and Boston: De Gruyter, pp. 1–16.
- Ibn Ḥazm, ‘Alī ibn Aḥmad. 2016. *al-Iḥkām fī uṣūl al-aḥkām*. Beirut: Dār Ibn Ḥazm.
- Ibn ‘Arabī, Muḥyī al-Dīn. 1911. *al-Futūḥāt al-makkiyya*. 4 vols, Cairo: Dār al-kutub al-‘arabiyya al-kubrā.
- Ibn ‘Arabī, Muḥyī al-Dīn. 2001. *Rasā’il ibn ‘Arabī*. Beirut: Dār al-kutub al-‘ilmiyyah.
- Ibn ‘Arabī, Muḥyī al-Dīn. 2024. *Ibn al-‘Arabī’s Kitāb Fuṣūṣ al-Ḥikam wa-Khuṣūṣ al-Kalim. Edition Based on the Earliest Extant Manuscript*. Edited by Marco Aurelio Golfetto. Leiden and Boston: Brill.
- Ikhwān al-Ṣafā’. 1985. *Rasā’il Ikhwān al-Ṣafā’*. 4 vols, Qom: Maktab al-‘ilām al-islāmī.
- Lory, Pierre. 2004. *La Science des Lettres en Islam*. Paris: Éditions Dervy.
- MacLean, Derryl N. 2012. Introduction: Cosmopolitanisms in Muslim Contexts. In *Cosmopolitanisms in Muslim Contexts: Perspectives from the Past*. Edited by Derryl N. MacLean and Sikeena Karmali Ahmed. Edinburgh: Edinburgh University Press, pp. 1–9.
- O’Kane, John, and Bernd Radtke. 2007. *Pure Gold from the Words of Sayyidī ‘Abd al-‘Azīz al-Dabbāgh*. Leiden and Boston: Brill.
- Ormsby, Eric. 2021. *Epistles of the Brethren of Purity. On Life, Death, and Languages. An Arabic Critical Edition and English Translation of Epistles 29–31*. Oxford: Oxford University Press.
- Orsini, Francesca. 2023. *East of Delhi: Multilingual Literary Culture and World Literature*. New York: Oxford University Press.
- Pollock, Sheldon. 2006. *The Language of the Gods in the World of Men: Sanskrit, Culture, and Power in Premodern India*. Oakland: University of California Press.
- Rashwan, Hany. 2024a. Editor’s introduction: Beyond Arabic in premodern Islamic worlds. *Postmedieval: A Journal of Medieval Cultural Studies* 15: 605–30. [\[CrossRef\]](#)
- Rashwan, Hany. 2024b. Muqāranah: The Art of Comparison in Premodern Arabo-Islamic Poetics. *Publications of the Modern Language Association of America* 139: 172–83. [\[CrossRef\]](#)
- Rashwan, Hany, Rebecca Ruth Gould, and Nasrin Askari, eds. 2024. *Arabic, Persian, and Turkic Poetics: Towards a Post-Eurocentric Literary Theory*. Proceedings of the British Academy 266. Oxford: Oxford University Press.
- Ricci, Ronit. 2011. *Islam Translated: Literature, Conversion, and the Arabic Cosmopolis of South and Southeast Asia*. Chicago: University of Chicago Press.
- Rūmī, Jalāl al-Dīn. 2007. *The Masnavi. Book Two*. Translated by Jawid Mojaddedi. Oxford: Oxford University Press.
- Schimmel, Annemarie. 1982. *As Through a Veil. Mystical Poetry in Islam*. New York: Columbia University Press.
- Sijpesteijn, Petra M. 2024. The Early Islamic Empire’s Policy of Multilingual Governance. In *Navigating Language in the Early Islamic World. Multilingualism and Language Change in the First Centuries of Islam*. Edited by Antoine Borrut, Manuela Ceballos and Alison M. Vacca. Turnhout: Brepols, pp. 43–87.
- Syed, Syed M. 1986. Islamization of Linguistics. *American Journal of Islamic Social Sciences* 3: 77–87. [\[CrossRef\]](#)
- van Bladel, Kevin. 2009. *The Arabic Hermes. From Pagan Sage to Prophet of Science*. Oxford: Oxford University Press.

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