



Translation Movement and Acculturation in the Medieval Islamic World

Labeeb Ahmed Bsoul

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*Dedicated to my beloved sisters, Khawlah, Lamya', Amal,
Maryam, and to Dr. Maisam Wahab*

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CHAPTER 1

Introduction: Roles Experienced by the Translation Movement

A prominent phenomenon in Islamic civilisation is Islam's profound absorption of Arab culture and the heritage of other nations, particularly bordering nations. As Islam spread and its polity expanded to integrate with other civilisations, Muslims were motivated to translate the ancient sciences in their search for understanding and advancement. Islamic teachings motivated the Muslims to contribute to human progress and to acculturate the positive achievements of other civilisations. A Qur'ānic verse reads:

O mankind! We have created you from a male and a female, and made you into nations and tribes, that you may know one another. Verily, the most honourable of you with Allah is that (believer) who has *At-Taqwā* [i.e., one of the *Muttaqīn* (pious – see V.2:2)]. Verily, Allah is All-Knowing, All-Aware. Q. 49:13

In addition, Muslims were obligated to seek knowledge and dedicate time and energy to further their understanding. It was—and remains—a key objective of young and growing states to expand their knowledge and to consolidate their learning by establishing the pillars of science and knowledge.¹

¹Travis Zadeh (2011). *Mapping frontiers across medieval Islam: geography, translation, and the 'Abbāsid Empire* London: I.B. Tauris, p. 24.

Thus, the Arabs began the longest and largest translation process known to the ancient civilisations. It began during the late first/seventh century of the Umayyad dynasty and reached the height of its glory and prosperity during the Abbasid caliphate of Hārūn al-Rashīd (r. 170/786–193/809) and his son and successor al-Ma'mūn (r. 198/813–218/833). It did not stop until the middle of the fifth/eleventh century and included the heritage of multiple civilisations: Persian, Indian, Chinese, Greek, Egyptian, Byzantine, and others.²

Translation flourished and expanded since it was promoted by Abū Ja'far al-Manṣūr (r. 136/754–158/775), the first caliph to order the translation of books from non-Arabic languages ('ājamī') into Arabic, including the book *Kalīlah and Dimna*,³ the book of *Sind-hind*, Aristotle's *Organon*, and the works of other ancient Greek scholars such as the *Almagest* of Ptolemy, Nicomacheus of Gerasa's *Archimedes doctrine*, and the *Elements* of Euclid.⁴ Translation remained an important phenomenon and received special patronage from the Abbasid caliphs who came after Abū Ja'far al-Manṣūr. They established dedicated official institutions supported directly by the state. Perhaps the most famous example of such patronage was the "House of Wisdom"/*Bayt al-Hikma* in Baghdad, which contained numerous halls and spacious rooms attributed to its founders, such as the library of caliph Hārūn al-Rashīd and the library of al-Ma'mūn, which contained collections of rare scientific books.⁵

This movement consisted of numerous scientific activities. The translators would translate the various books into Arabic, and scribes made copies that were translated and stored in libraries. The books were bound and decorated, and detailed indices were prepared. The House of Wisdom was

² Toorawa Shawkat M. (2010). *Ibn Abī Tāhir Tayfūr and Arabic Writerly Culture: A Ninth-Century Bookman in Baghdad* London: Routledge, pp. 46–50; Travis Zadeh (2011). *Mapping frontiers across medieval Islam: geography, translation, and the 'Abbāsid Empire*, pp. 20–21.

³ Zaydān, Jurjī (2013). *Tārīkh Ādāb al-Lughah al-'Arabiyya* Cairo: Mu'asasat Hindāwī, pp. 525–527.

⁴ al-Mas'ūdī, Abū al-Ḥasan 'Alī ibn al-Husain (d. 346/957). *Murūj al-Dhahab wa Ma'ādin al-Jawhar* ed. Yūsuf al-Baqā'ī Beirut: Dār Ihyā' al-Turāth al-'Arabī, 2002, vol. 5: 303.

⁵ Toorawa Shawkat M. (2010). *Ibn Abī Tāhir Tayfūr and Arabic Writerly Culture: A Ninth-Century Bookman in Baghdad*, p. 14; Nājī Ma'rūf (1975). *Asālat al-Hadārah al-'Arabiyya* Beirut: Dār al-Thaqāfah, pp. 437–438; Zaydān, Jurjī (2013). *Tārīkh Ādāb al-Lughah al-'Arabiyya*, pp. 396–397.

managed by directors, secretaries of translation, and book experts. It employed scientists and scribes from different religions, races, and cultures. With them were also copyists/paper manufacturers. Hence the House of Wisdom had diverse circles, each with its scholars, translators, and supervisors, who took charge of different aspects of translating, organising, binding, copying, and preserving the intellectual heritage.⁶ The paper factories multiplied, and there was a long street of copyist shops and publishing houses adjacent to the House of Wisdom, which contributed to the success of the translation movement and richness of Muslim culture. The organs of the translation movement were well-funded, such that we would be hard-pressed to find in ancient history a better example of the generosity enjoyed by the translation sector. Al-Ma'mūn rewarded each translator with an exorbitant amount of money for their work, and one of the caliphs is reported to have devoted the entire *kharāj*/land tax of Jordan to translation.⁷ It was not only the state that carried the burden of translation, but even ministers and scientists in the Abbasid era, who encouraged entire families to support the translation movement, such as the family of Jibrīl ibn Bakhtīshū⁸, and the family of Mūsā ibn Shāker.⁹ Muḥammad, Aḥmed, and al-Ḥasan (known as the sons of Mūsā ibn Shāker) were passionate about translation, and they spent large sums of money obtaining works in the ancient sciences. They dedicated much of their time in the House of Wisdom to reading and learning, and benefited greatly from the translated works of the Greeks.¹⁰

Aḥmed ibn Muḥammad, known as Ibn al-Mudabbir (d. 279/893), was famous in this field.¹¹ He was a man of letters and a poet who enriched

⁶ Andalusī, Ṣā'īd, Abū al-Qāsim ibn Aḥmad ibn 'Abd al-Rahmān (d. 462/1070). *Tabaqāt al-Umām*, ed. Ḥusain Mu'nis Cairo: Dār al-Ma'ārif, 1988, p. 100; Ibn al-'Abī, Gregorios al-Malī (d. 685/1286). *Mukhtaṣar Tārīkh al-Duwal* Cairo: Dār al-Āfāq, 2001, p. 236.

⁷ Ibn Abī Uṣaybi'a, Aḥmad ibn Qāsim (d. 668/1270). 'Uyūn al-Anbā' fī Tabaqāt al-Āṭibā', ed. Muḥammad Basil 'Uyun al-Sud Beirut: Dār al-Kutub al-'Ilmiyya, pp. 168, 171, 178–179, 220, 223, 236, 254, and 277–278.

⁸ Ibid., pp. 180–187.

⁹ al-Qaftī, Jamāl al-Dīn, Abū al-Ḥasan 'Alī (d. 646/1248). *Akhbār al-'Ulamā' bi Akhbār al-Hukamā'* Beirut: Dār al-Kutub al-'Ilmiyya, 2005, pp. 237–238.

¹⁰ Ibid.; Shawqī Ḥayf (1986). *Asr al-'Abbāsī al-Awal* Cairo: Dār al-Ma'ārif, pp. 112–114.

¹¹ Ibn Abī Uṣaybi'a, Aḥmad ibn Qāsim (d. 668/1270). 'Uyūn al-Anbā' fī Tabaqāt al-Āṭibā', p. 259; Ibn al-Naḍīm, Abū al-Faraj Muhammed ibn Ishāq (d. 380/990). *al-Fibrīṣ*, ed. Yūsuf 'Alī al-Ṭawīl Beirut: Dār al-Kutub al-'Ilmiyyah, 2010, p. 269.

his knowledge of literature by studying translations.¹² Ibrāhīm ibn Muḥammad ibn Mūsā, the writer and translator, was a physician who contributed to the transfer of medical knowledge from Greek into Arabic.¹³ These examples underscore how scientific activity characterised Abbasid society. Translation was a public responsibility and acculturating the positive achievements of other civilisations was practised widely.

It is worth mentioning that translation into Arabic was not confined to a single cultural pattern and was not limited to the heritage of a particular civilisation. It has expanded to encompass the sciences of several civilisations, such as Persian, Indian, Chinese, Egyptian, Greek, Byzantine, and others, thus providing the Arabs with rich material that enabled them to benefit from a synthesis of the sciences and cultures of various nations. The translation movement supported intellectual openness, the principle of pluralism and diversity that enabled them to benefit from compendia of the sciences and cultures of multiple nations. Its openness supported the practice of tolerance, humanity, communication, and acculturation. This is what Crowther referred to when he viewed Islam's openness to ancient civilisations as an important precedent for the establishment of human knowledge that excluded fanaticism and seclusion:

It was natural for them to reassure their military power and belief that they would build magnificent cities and the study of the culture of civilisations that condemned them. The Arab Muslims were a new nation without a previous scientific heritage, they read the intellectual heritage of the old with open minds without hindrances, and therefore stood the cultures of Greek, Latin, Indian and Chinese all for them on an equal footing. The result of this Muslim-ambition mindset is that they have already become the true founders of the concept of universality in knowledge or the unity of human knowledge, one of the most important features of modern science.¹⁴

This translation movement fed into Arabic cultures, especially the sciences, and led to rich human experiences, which freed the Arab Muslim mind from the imprisonment of myths and delusions. It supported

¹² Ibn Abī Uṣaybi‘a, Aḥmad ibn Qāsim (d. 668/1270). ‘Uyūn al-Anbā’ fī Ṭabaqāt al-Atṭibā’, p. 259; ‘Umar Farūkh (1981). *Tārīkh al-Adab al-‘Arabī* Beirut: Dār al-‘Ilm li-l-Malāyīn, vol. 1: 334; Travis Zadeh (2011). *Mapping frontiers across medieval Islam: geography, translation, and the ‘Abbāsid Empire*, pp. 35–36.

¹³ Ibn Abī Uṣaybi‘a, Aḥmad ibn Qāsim (d. 668/1270). ‘Uyūn al-Anbā’ fī Ṭabaqāt al-Atṭibā’, p. 259.

¹⁴ Crowther James Gerald (1999). *Short History of Science/Qisṣat al-‘Ilm* tr. Yūmnā Tarīf al-Khūlī and Badawī ‘Abd al-Fattāḥ Cairo: al-Hay’ah al-Maṣriyya al-Āmah lil-Kitāb, p. 57.

evidence-based thinking and inspired a spirit of verification that would become bulwarks of the Arab-Islamic civilisation and were fruits of the creativity of scientists. According to Roger Garaudy's "Wu‘ūd al-Islām", Islam was not satisfied with the introduction to ancient cultures from the Chinese Sea to the Atlantic, from Samarkand to Timbuktu—the cultures of China, India, Persia, and Greece—the cultures of Alexandria and Byzantium, but from various empires and diverse civilisations, breathed a spirit of new collective life that cultivated a renewed sense of humanity and human achievement.¹⁵

The Arab-Islamic civilisation would not have been established and flourished in the form it did had it not been for the early translators, who sought to transfer the sciences of the Greeks, Indians, and Persians. Translation is an effective engine for dialogue and intellectual advancement. The translation movement in the Islamic civilisation highlights the importance of acculturation and its positive impact on humanity. Openness to others and understanding their achievements pave the way for societies to progress. Civilisations that are founded on two or more languages—or two civilisations or more—are richer and contribute more to humanity. Islamic civilisation witnessed unprecedented multicultural and linguistic diversity. Liberal economic and educational policies preserved and advanced different cultural and intellectual heritages and supported an inclusive society. The Arab-Islamic civilisation opened its doors to anyone who would contribute to its cultural construction, in which translation and translators played key roles.

We cannot find an example of a culture that resulted in the movement of active translation in the Arab-Islamic civilisation more authentic than that of Persia. The contact between the Arabs and the Persians after the Islamic conquest was characterised by vitality, depth, and strong cohesion between the two cultures, and had a strong impact on both Arabs and Persians. Persian's confluence and interaction with Arabic is one of the chief signs of the Arab-Islamic civilisation. It is a remarkable manifestation of acculturation. Persian belongs to the Indo-European language family, while Arabic is one of the Semitic languages. However, Islam, which linked the Islamic peoples in close bonds, established a connection between these two languages and these two peoples, with subsequent links of language and civilisation rarely seen among other languages.¹⁶

¹⁵ Roger Garaudy (1981). *Wu‘ūd al-Islām* tr. Dhawqān Qarqūṭ Beirut: al-Dār al-Sāqī, pp. 17–19.

¹⁶ Nadā Ṭāhā (1980). *al-Adab al-Muqāran* Alexandria: Dār al-Ma‘rifah, p. 35.

The first Arabic terms that entered Farsi were related to Islam and Islamic living, such as *salāh* “prayer”, *zakat* “alms-giving”, *hajj* “pilgrimage”, *jihād* “battle”, *munāfiq* “hypocrite”, *āyāt* “verses”, *kawthar* “ample” or large quantity (name of river in Paradise), *‘iqāb* “punishment”, *thawāb* “reward”, *la’nah* “curse”, *jum’ah* “Friday”, *halāl* “lawful”, *ḥarām* “forbidden”, Qurān “holy book”, and so on. It also featured other Arabic words related to the political and administrative organisation of the new state, such as *ḥarb* “war”, *hajjā* “combat”, *ghazw* “invasion”, *shurṭah* “police”, *muḥtasib* “accountant”, *kātib* “writer”, *imām* “prayer-leading”, *ḥimlah* “campaign”, *ḥākim* “governor”, *mazlīma* “act of injustice”. The integration of Arabic terms into Farsi was gradual:

ranging from 5% to 10%, but they then increased significantly until they exceeded in the second half of the fifth century AH 50% and reached in the sixth, seventh and eighth centuries 80%.¹⁷

The Persian language was also influenced by the Arabic language in its formulations and structures, such as the use of *tanwīn* “nunation”, adoption of Arabic verbal noun sources, and common Arabic parts of speech, such as prepositions, demonstrative pronouns, and interjections. Persian verb structure was influenced by the Arabic use of the accusative subject of the verb in the passive voice, the object of the verbal clause, and the use of the absolute in Arabic grammar. This influence was also apparent in poetry and prose.¹⁸ Persian poetry became similar to Arabic poetry, and the Persians added modifications. The use of dictionaries is another example of linguistic influence, as the Persian dictionaries followed the style of Arabic dictionaries.¹⁹

However, the most prominent manifestation of the influence of Arabic in Persian is the use of the Arabic alphabet as a tool for writing. After the Islamic conquest, the Persians embraced Islam and were eager to learn Arabic, showing great enthusiasm, but Persian did not die out—the Coptic language did, in Egypt, whereas Aramaic was reduced radically, and Berber was lost in many areas, but still survives in large regions of Algeria and Morocco. Arabic was the only language used in Persia during the first and

¹⁷ Ibid., p. 73.

¹⁸ Ibid., pp. 75–78.

¹⁹ Baḍī‘ Muḥammad Jum’ah (1980). *Dirāsāt fī al-Adab al-Muqāran* Beirut: Dār al-Nahḍah al-‘Arabiyya, p. 74.

second/seventh and eighth centuries. When the Persians were presented with the opportunity to detach from the Arab Caliphate in Baghdad and establish separate states, they worked to remove all manifestations of submission to this caliphate, particularly their use of the Arabic language. They encouraged the Persian language, which became the official language of the modern Saffavid and Semiarid dynasty since Pahlavi, the language of the Persians before the Islamic invasion, almost disappeared after being displaced by Arabic. The alienation of Muslim Persians because of their association with the religion of Zoroastrianism further encouraged their departure from an Arab-led caliphate. Nevertheless, a new Persian Islamic language had already developed, and spread in Bukhara and Khorasan and surrounding areas, and the Arabic language was recoded. It retained the Arabic alphabet after losing the middle Persian or Pahlavi script.²⁰

However, these political changes did not weaken the status of the Arabic language in these regions. It remained a strong influence in the fields of science and literature. It was spoken by learned Persian Muslims, who advanced the sciences and literature strongly. They were supported and encouraged by the rulers, who, despite some intolerance of their Persian nationality, continued to show them favour. The new Persian language became the official language of Persians who lived with the Arabs side by side in harmony, cooperation, and interaction.²¹ The great Persian scholars and geniuses, many of whom, despite the mastery of their native language, chose to write in Arabic, expressed their sincere desire to lay the foundations of the Arab-Islamic civilisation and participate in its development, growth, and prosperity. Persians, Levantines, Copts, and Berbers used the Arabic language and placed their talents and sciences generously in the service of Arabism. Other ethnic identities faded away, and people began considering themselves Arabs—be they Persian, Syrian, or Egyptian. “Arab” came to designate the word for every Muslim who wrote and spoke in Arabic. This was the most important development in the history of Islamic civilisation.²² Thus, Ibn Sīnā, al-Bīrūnī, al-Ghazālī, al-Rāzī, Bāiḍāwī, Tūsī, and al-Ṭabarī and many others published works in Arabic.

²⁰ Nadā Ṭāhā (1980). *al-Adab al-Muqāran*, pp. 40–42.

²¹ Ibid., p. 45.

²² Urnik Zīb al-A‘zamī (2005). *Harakat al-Tarjamah fī al-‘Aṣr al-‘Abbāsī* Beirut: Dār al-Harf al-‘Arabī, pp. 23–24.

In the embrace of this vast and deep acculturation/*muthāqafah*, the Arabs benefited in return from the Persians, who were inhabitants of an ancient civilisation that witnessed the flourishing of many branches of different sciences and knowledge, and their literature and sciences were commensurate with their greatness and great power. They gathered the tributaries of Assyrian and Babylonian civilisations and frequently interacted with neighbouring civilisations through wars and journeys, sometimes to take advantage of great benefits from the sciences of India and Greece and to have a rich heritage of astrology, engineering, geography, medicine, history, literature, legends, and stories. Ibn al-‘Ibrī wrote:

As for the Persians, the people of the proud East, splendour lavish, and the middle of the nations, the most honourable territories, and the Persians have a keen interest in the medical industry, and a keen knowledge of the stars, and they had old observations.²³

The doors of Persian heritage were open to the Arabs in the fields of medicine, astronomy, mathematics, philosophy, and literature. It should be noted that after the Persians embraced Islam, they welcomed the Arabs to transfer their heritage into Arabic. When they accepted Islam and became Muslims, they adopted Arabic as their main learned language and transferred Persian cultural heritage and scientific contributions to Arabic, thereby enriching society, before the translation movement became official.

The Persian contribution to Arab culture was extensive. The openness of the Arabs to the Persian cultural heritage was an important factor in the flourishing and enrichment of the Arab-Islamic culture. The Arabs took great care in translating the Persian heritage, and this burden was borne by a large generation of scholars, including the family of al-Nawbakht, led by al-Fadil ibn Nawbakht, who translated Persian astronomical books, and the family of Sahl, led by al-Faḍil ibn Sahl, and Muḥammad ibn Jahm al-Barmakī, Musa ibn Isā al-Kasrawī, ‘Umar ibn al-Farakhān, and Sahl ibn Hārūn, and others.²⁴

²³ Ibn al-‘Abrī, Gregorias al-Malṭī (d. 685/1286). *Mukhtasr Tārīkh al-Duwal* Cairo: Dār al-Āfāq, 2001, p. 218.

²⁴ Sahwqī Dayf (1996). *al-‘Aṣr al-‘Abbāsī al-Awal* Cairo: Dār al-Ma‘ārif, p. 113.

TRANSLATION AND ACCULTURATION BETWEEN THE ISLAMIC AND INDIAN CIVILISATIONS

In addition to the Persian-Arabic acculturation, which was strong and profound, there was Arab-Indian acculturation. India was a cradle of human civilisation and a rich source of science and knowledge. It was one of humanity's most ancient and rich civilisations, and its people progressed in many areas. The Arabs experienced this civilisation after the expansion of their state. They were eager to include the wonders and oddities in literature and science.

Among the most prominent sciences that the Arabs took from the Indians was mathematics, which they learned after translating the *Siddhānta* in astronomy, which became popularly known among the Arabs as *Sind-hind*. It is the largest and most popular Indian manual of arithmetic, astronomy, and astrology by Brahmagupta. It is composed of two parts, one of which is al-*zīj*, which is the astronomical table of the planets from which calendars are drawn. The other is the calculation methods of these tables, which opened up the horizons of arithmetic and trigonometry to the Arabs.²⁵ The *Siddhānta* nāṭ marked the early Muslim contact with Indian mathematics. It contributed directly to the emergence of Arab mathematics. Two great Muslim mathematicians, al-Khwārizmī (d. 231/830) and al-Bīrūnī (d. 439/1048), both visited India and were proficient in Sanskrit.²⁶

A significant achievement in Indian mathematics is the decimal system of numbering, which is one of the most important gifts to world civilisation. The Arabs adopted this system and formed two series, one of which is known as Hindi numbers, used by India and most Arab and Islamic countries today. The second is known as the numerical of dust,²⁷ which spread in the Maghreb and Andalusia, and from Andalusia, crossed to Europe, where it became known as Arabic numerals.²⁸ The Muslims also took the notion of zero, which the Indians called *Shunya*, meaning “emptiness”. This revolutionised mathematics on account of its many advantages in facilitating numbering and calculation.

²⁵ Yumnā Ṭarīf Khūlī (2000). *Falsafat al-‘Ilm fī al-Qīrn al-‘Ishrīn: al-Uṣūl, al-Ḥaṣād al-Āfāq al-Mustaqbaliyya* Kuwait: al-Majlis al-Waṭanī lil-Thaqāfah wal-Funūn wal-Ādāb, p. 42.

²⁶ Ibid.

²⁷ The official scribes nevertheless avoid using [the Indian system] because it requires equipment [like a dust board] and they consider that a system that requires nothing but the members of the body [i.e., their own body parts] is more secure and more fitting to the dignity of a leader.

²⁸ Qadri Ḥāfiẓ Tūqān (1980). *Turāth al-‘Arab al-‘Ilmi fī al-Riyādiyāt wal-Falak* Beirut: Dār al-Shurūq, pp. 44–48.

The Arabs added to what they took from the Indians based on what they learned from Greek mathematics. Drawing on and benefitting from multiple heritages marked creativity in learning that advanced the sciences and led to the formation of new sciences. This is reflected in the following: a complex system of Islamic inheritance, the growing of the great hordes of armies, the distribution of their salaries and spoils, the calculation of their expenses, the economic prosperity and the accumulation of capital that followed the formation of the Islamic dynasties and the problems of calculating the systems of taxes, that is, the *jizya* or per capita yearly tax historically levied on non-Muslim subjects, and the *kharāj* or land tax, the problems of land operations, land division, and the construction of cities.²⁹ They also took the basics of astronomy from the Indians. The Arabs benefited greatly from their many experiences, which formed an important part of the foundation of astronomy, enriched by Persian and Greek heritage.

The Arabs, after receiving knowledge of astronomy from the ancient nations, made a significant difference in their clear division between astrology and astronomy because they realised from their Islamic faith that astrology was nothing more than a set of myths and illusions that were unfounded. Muslims have called for the abolition of the astrology industry based on illusion, and perhaps were among the first to do so. They were interested in the science of astronomy to monitor the universe. They studied the ephemeris “*al-taqwīm al-falakī*”, and measured the latitudes, observing the planets, and travelled to India and Persia in the quest of that science.³⁰ Astronomy became a practical extrapolation based on sensory observation and scientific measurements using observations, astronomical calculations, and pure applied mathematics.³¹

In the field of medicine, the Arabs translated Indian medical literature. In this context, Baghdad witnessed, in the first Abbasid period, the translation of a large number of Indian medical books into Arabic. The Abbasid caliphs employed many Indian doctors to practise in the palaces of the caliphs, ministers, and leaders, or in the hospitals/*bimāristān*. Some of them integrated into the new society, such as the doctor Bahla, an Indian who came to Baghdad in the eighth century at the invitation of Yahyā ibn

²⁹ Yumnā Ṭarīf Khūlī (2000). *Falsafat al-Ilm fī al-Qirn al-‘Ashrīn*, p. 43.

³⁰ Ibid., p. 347.

³¹ Ibid., p. 363.

Khālid al-Barmakī (d. 190/805).³² He worked for the Abbasid caliphs and al-Barmakis, then became Muslim and had a child named Shāliḥ, who later became a skilled doctor like his father.³³ Like the Indian doctor Ibn Duhan, who was the head of the hospital/*bimāristān* of the Barmakis during the reign of Hārūn al-Rashīd, he also worked in translation and translated important books of Indian medicine into Arabic.³⁴ Also, Hārūn al-Rashīd summoned the Indian doctor Mankah, who treated him for an illness which was difficult for other doctors to diagnose. Doctor Mankah was rewarded with a monthly salary and given a place to practise medicine in Baghdad. He was a wise and active scientist, who contributed to translation as well.³⁵ He was among the companions of Ishāq ibn Sulaiman ibn ‘Alī al-Hāshimī (d. after 178/794), and he translated a large number of medical and scientific books from India and Persia into Arabic.³⁶

This rich Indian heritage and what the Arabs adapted from the written heritage of the Persians, Greeks, and Chinese influenced the medical renaissance of the Arab-Islamic civilisation. It was carried on the shoulders of a number of outstanding doctors and pharmacists, such as Ibn Sīnā (d. 427/1037), Ibn al-Bīṭār (d. 646/1248), al-Bīrūnī (d. 440/1048), al-Rāzī (d. 313/925), Dāwūd al-Anṭākī (d. 1008/1599), al-Dīnūrī, al-Zahrāwī (d. 404/1013), and others.³⁷

³² Ibn Khallikān, Abū al-‘Abbās Shams al-Dīn (d. 680/1282). *Wafīyyāt al-‘Ayyān wa Anbā’ Abnā’ al-Zamān* Ed. Ihṣān ‘Abbās, Beirut: Dār Sadir, 1977, vol. 2, p. 243; Yāqūt al-Ḥamawī, Abū ‘Abdullah Shihāb al-Dīn (d. 626/1229). *Mu’jam al-Udabā’*: *Irshād al-‘Arīb ‘ilā Ma’rifat al-Adīb*, ed. Ihṣān ‘Abbās, Beirut: Dār al-Gharb al-Islāmī, 1993, vol. 7, p. 272.

³³ Ibn Abī Uṣaybi‘a, Ahmad ibn Qāsim (d. 668/1270). *‘Uyūn al-Anbā’ fī Ṭabaqāt al-Attibā’*, ed. Muhammad Basil ‘Uyun al-Sud Beirut: Dār al-Kutub al-‘Ilmiyya, pp. 436–439; Dhahabī, Shams al-Dīn Abū ʿAbd Allāh Muḥammad ibn Uthmān (d. 748/1348). *Siyar A’lām al-Nubalā’*, ed. Shūayb al-Arnā’ūt and Ḥusayn al-Asad, Beirut: Mu’assasat al-Risālah, 1985, vol. 9, p. 89.

³⁴ Ibn al-Naḍīm, Abū al-Faraj Muḥammed ibn Ishāq (d. 380/990). *al-Fihrist*, ed. Yūsuf ‘Alī al-Ṭawīl Beirut: Dār al-Kutub al-‘Ilmiyyah, 2010, p. 400.

³⁵ Ibid.

³⁶ Ibid., p. 400; al-Zirkilī, Khayr al-Dīn (2002). *al-A’lām*, Beirut: Dār al-‘Ilm lil-Malāyīn, vol. 2, p. 87; Nimir ‘Abd al-Mun‘im (1991). *Tārīkh al-Islām fī al-Hind* Cairo: al-Hay‘a al-Miṣriyya al-‘Āmma, pp. 65–70; Ibn Taghrī Bārdī, Abū al-Mahāsin Yūsuf (d. 874/1469). *Al-Nījūm al-Zāhirah fī Muṣṭafā wal-Qāhirah* Cairo: Dār al-Kutub al-Miṣriyyah, 1929, vol. 2: 87.

³⁷ Yūmnā Ṭarīf Khūlī (2000). *Falsafat al-‘Ilm fī al-Qirn al-‘Ashrīn*, p. 40; Honke, Zagrid (1981). *Allahs sonne über dem abendland unser Arabisches erbe*, translated into Arabic by Fārūq Bayḍūn and Kamāl Dasūqī, *Shams al-‘Arab Tāṣṭa‘ ‘alā al-Gharb: Athar al-Hadārah*

Along with the Persians and the Indians, there was also Arab-Chinese acculturation. Although the Arabs did not conquer China, the Silk Road and commercial caravans transferred their rich cultural heritage to the Arabs. Chinese medicine and many other innovations, such as water clocks, papermaking, gunpowder and others, were transferred to the Muslims in the first and second/seventh and eight centuries.³⁸

TRANSLATION AND ACCULTURATION BETWEEN ISLAMIC AND WESTERN CIVILISATIONS

After the Arabs reached the peak of civilisation, they turned to luxury and idleness. They gave up seeking knowledge and the pursuits of the mind, and suffered from inertia and nostalgia for past achievements and glory. Others took over the torch of civilisation. The Europeans began a reverse movement, which included the transfer of the treasures of Islamic knowledge, which helped them exit the dark Middle Ages. They transferred the sciences of medicine, pharmacy, agriculture, veterinary medicine or zoology [also botany], chemistry, astronomy, mathematics, geography, maritime science, and navigation. The Greek heritage translated by the Arabs and its advancement, and the experimental approach, which exceeded the scope of Aristotelian measurement, further revolutionised knowledge in the West.³⁹

The process of translating the Islamic heritage into Latin began in the tenth century with individual efforts, as in the case of the priest Gerber de Orelac, who was attracted by the intellectual superiority of the Arabs of Andalusia. He transmitted examples of their sciences, which earned him the respect and appreciation that led him to the papacy. In the centuries that followed, this transfer of knowledge laid the foundations for the European Renaissance.

Andalusia, Sicily, southern France, southern Italy, and Syria were the ports through which the Europeans were exposed to the achievements of Islamic civilisation. Direct contact with European students from Islamic

al-‘Arabiyyah fī Urūbā, Beirut: Dār al-Afāq, pp. 228–229; Fuat Sezgin (1984). *Muḥāḍarāt fī Tārīkh al-‘Ulūm al-‘Arabiyya wal-Islāmiyya* Frankfurt: Ma‘had Tārīkh al-‘Ulūm al-‘Arabiyya wal-Islāmiyya, pp. 120–123.

³⁸ Ibid.

³⁹ Montgomery William Watt (1972). *The Influence of Islam on Medieval Europe* Edinburgh: Edinburgh University Press, p. 1.

societies in these regions allowed the transfer of Arab-Islamic culture to Europe at a time when scientific and cultural life suffered from the severe drought that characterised the dark ages.⁴⁰ At the end of the thirteenth century, the road of culture began at the gates of Toledo, crossing the Pyrenees through Provence and the Alps to reach Lorraine, Germany, and Central Europe and to cross the Channel to England. Marseille, Toulouse, Narbonne, and Montpellier were French centres of Arab thought.⁴¹ In eastern France, the monastery of Cluny, which included a number of Spanish monks, was an important centre for the dissemination of Arab science. Bishop of Toledo, Rodrigo Jiminez de Rada (from 1210 to 1247), authored two works—“History of the Arab” and “History of the Goths”—and in 1141, Mark, the priest at the Cathedral of Toledo received the mandate of the Archdeacon that Robertus Rettinensis head the translation of the Qur’ān into Latin. This was the first of various anti-Islamic publications.⁴² The Arab sciences that entered Lorraine in the tenth century made it a centre of scientific influence in the next two centuries such that Leipzig, Cologne/Köln, and other cities became fertile ground for the growth of Arabic knowledge. The knowledge from Lorraine moved to other parts of Germany, and from there to England and Normandy.⁴³

Perhaps the most important contribution of the transfer of the Islamic cultural heritage to Europe occurred in Andalusia by virtue of its size, the flourishing of Arabic literature and science there, and its attraction of a good number of priests and students who sought knowledge, as stated by Philip Hitti in his “History of the Arabs”:

It was founded in many major cities in Andalusia is a higher institute that can be compared to our universities in the present age. It is undoubtedly the model that Europe gave when it founded its universities. In the cities of Cordoba, Seville, Malacca and Granada, there was a university with sections of astronomy, mathematics, chemistry, medicine, law, philosophy and religion. Its institutions have paved the way to reach the highest levels, and many of Castilian and other foreign students of had flowed on these scientific institutions not only from Spain but from Europe, Africa and Asia.⁴⁴

⁴⁰ Ibid., pp. 29–30.

⁴¹ Ibid., p. 30

⁴² Charles Burnett. “Ḥarkat al-Tarjamah min al-‘Arabiyyah fī al-Qurūn al-Wusṭā fī Isbānīyah”, in Salmā al-Jayūsī (1999). *al-Hadārah al-‘Arabiyya al-Islāmiyya fī al-Andalus* Beirut: Markaz Dirāsāt al-Wihdah al-‘Arabiyya, vol. 2: 1461; 1478–1479.

⁴³ Philip Khūrī Hitti (1970). *History of the Arabs from the earliest times to the present* Macmillan: St Martin’s Press, p. 177.

⁴⁴ Ibid., p. 159.

During the last few decades,⁴⁵ when Islamic rule began to decline in Andalusia, the region experienced an extensive translation of Arabic books into Latin. The Andalusian city of Toledo was illuminated by the translation of hundreds of Arabic books and manuscripts into Latin. After the conquest of Toledo by Alfonso III (r. 866–910), King of Castile in 1085, he ordered the translation of the manuscripts in libraries containing millions of literary and scientific books.⁴⁶ The library of the city of Cordoba, which contained more than half a million Arabic manuscripts, included two volumes containing more than 2000 pages.⁴⁷ The passion of Alfonso for science and his love of culture led to the expansion of the translation movement to the point that for the first time in Europe's history, workshops and translation units were established. They first learned Arabic, and then, started translating a number of famous scholarly manuscripts from Arabic into Latin. This translation was done in classical Latin because it was the official language of science and the church in Europe.⁴⁸

After the fall towards the end of fifteenth century, the Spaniards sold the library of Cordoba, which had 440,000 volumes to the peddlers. They sold the library of Toledo, which had more than 500,000 volumes, and sold volumes of the Public Library of Granada. The vendors carried their loads on mules in long convoys, crossing the Spanish plateau and the Pyrenees, and sold them in Europe to students, translators, and learners.⁴⁹

The court of Sicily was a major centre of translation of knowledge, especially during the reign of Roger II (r. 1130–1154 AD) and Frederick II (r. 1194–1223 AD).⁵⁰ It was characterised by well-being and splendour and riveted Cordoba. The two kings wore Arab clothes and adopted the Arab way of life. The Norman rulers of Sicily had advisers and Arab and Muslim officials, and scholars from Baghdad and Syria joined them.

⁴⁵ This refers to the beginning of and the early Islamic rule in Andalusia.

⁴⁶ Charles Burnett, “Harkat al-Tarjamah min al-‘Arabiyy fī al-Qurūn al-Wustā fī Isbānā”, in Salmā al-Jayūsī (1999). *al-Ḥadārah al-‘Arabiyya al-Islāmiyya fī al-Andalus* Beirut: Markaz Dirāsāt al-Wihdah al-‘Arabiyya, vol. 2: 1450, p. 1461.

⁴⁷ Philippe de Tarrazi (1865–1956). *Khazā’īn al-Kutub fī al-Khāfiqīn* Beirut: Wizārat al-Tarbiyah al-Waṭaniyyah w al-Funūn al-Jamīlah, 1947, vol. 1: 245; Kāmil al-Kīlānī (1924). *Naṣarāt fī Tārīkh al-Adab al-Andalusi* Cairo: al-Maṭba‘ah al-Maktabah al-Tijāriyya, pp. 225–225.

⁴⁸ Kāmil al-Kīlānī (1924). *Naṣarāt fī Tārīkh al-Adab al-Andalusi* pp. 223–224.

⁴⁹ al-Baḥrah Naṣr al-Dīn (1996). “al-Ḥadārah al-‘Arabiyyah wal-tarjamah”, *Majalat al-Turāth al-‘Arabī* issue no. 63, 16 April, p. 96; Montgomery William Watt (1972). *The Influence of Islam on Medieval Europe*, p. 84.

⁵⁰ Aḥmad ‘Alī al-Mulā (1996). *Athar al-‘Ulamā’ al-Muslimīn fī a-Ḥadārah al-Urūbiyya*, Beirut: Dār al-Fikir, pp. 120–124.

Roger II was keen to translate large numbers of Arabic books, the most famous of which were the books of the magistrates/*al-qudā* and the optics attributed to Ptolemy and the book of *Kalīlah wa Dimnah*. The traveller and the Arab geographer Idrīsī was a contemporary and spent a considerable period in Sicily. The historian George Sarton says that Roger II was the most important ruler of his time and that he was able to make Sicily into the most prestigious and richest country in Europe within a very short time.⁵¹

Frederick II, crowned the Emperor of the Holy Byzantine Empire in 1220, had a special interest in science, so he preferred lodging in Sicily, encouraged scientific and philosophical discussions, and conducted experiments in medicine and zoology. He also supervised the establishment of the University of Naples in 1224 and supplied it with a large number of Arabic manuscripts, which helped spread Arab-Islamic culture in the universities of Europe, including those at Paris and Oxford, and opened the door to the translation of a number of books from Arabic to Latin.⁵² Among the most famous translators were Adelard of Bath, England, who was active from 1116 to 1142 AD,⁵³ Stefano of Pisa, Antioch in 1127, and Michael Scott of 1236 AD,⁵⁴ who translated books for King Frederick II, including the works of Ibn Rushd.⁵⁵

⁵¹ Georges Sarton (1931). *Introduction to the History of Science* Baltimore: Williams and Wilkins Company, vol. I, p. 339.

⁵² Gordon D. Newby (1997). “The Foundation of the University of Naples: Typological Parallels with Arab Institutions of Higher Learning,” *Medieval Encounters*, 3,2, pp. 173–184.

⁵³ Charles Burnett. “Harkat al-Tarjamah min al-‘Arabiyy fī al-Qurūn al-Wuṣṭā fī Isbānā”, in Salmā al-Jayūsī (1999). *al-Ḥadārah al-‘Arabiyya al-Islāmiyya fī al-Andalus* Beirut: Markaz Dirāsāt al-Wiħdah al-‘Arabiyya, vol. 2: 1444–1445.

⁵⁴ Ibid., vol. 2: 1459.

⁵⁵ Ibid.; Miguel Gruz Hernández. “al-Fikr al-Islāmī fī Shibih al-Jazīrah al-Ibīriyya: Dirāsah Shāmīlah”, in Salmā al-Jayūsī (1999). *al-Ḥadārah al-‘Arabiyya al-Islāmiyya fī al-Andalus* Beirut: Markaz Dirāsāt al-Wiħdah al-‘Arabiyya, vol. II: 1109–1115; –421. ‘Abdullah al-‘Umarī (1990). *Tārīkh al-‘Ilm ‘and al-‘Arab* Amman: Dār al-Jadlāwī, p. 262; Antonio Frenández Puertas “Fan al-Khaṭ al-‘Arabī fī al-Nadalus”, in Salmā al-Jayūsī (1999). *al-Ḥadārah al-‘Arabiyya al-Islāmiyya fī al-Andalus* Beirut: Markaz Dirāsāt al-Wiħdah al-‘Arabiyya, vol. 2: 950; Honke, Zagrid (1981). *Allahs sonne über dem abendland unser Arabisches erbe*, translated into Arabic by Fārūq Baydūn and Kamāl Dasūqī, *Shams al-‘Arab TasTa‘ alā al-Għarb: Athar al-Ḥadārah al-‘Arabiyyah fī Urūbā*, pp. 303–304; Arshid Yūsuf (2005). *al-Haddārah al-Islāmiyya: Nuzum ‘Ulūm Funūn* Riyad: al-‘Abikān, pp. 460–463; ‘Azz al-Dīn Farāj (1978). *Fazıl ‘Ulamā’ al-Muslimin’ Alā al-Ḥadārah al-Urūbiyyah* Beirut: Dār al-Fikir al-‘Arabī, pp. 123–126.

Southern Italy had a great share in the transfer of the Arab-Islamic heritage to Europe. The King of Naples, Charles I (r. 1246–1285), was devoted to the translation of Arabic medical books into Latin and established an institution of translators such as Faraj ibn Sālim, also known as Farragut of Girgenti (thirteenth century), Moses Farachi of Dirgent (d. 685/186, known as Mūsā of Salerno), as well as scribes and reformers.⁵⁶ The book *al-Ḥāwī fī al-Ṭibb* of al-Rāzī was translated, as was the *Taqwīm al-Abdān* of Ibn Jazlah Yaḥyā ibn Isā (d. 493/1100).⁵⁷ Historical research notes the profound impact these books have left on the modern European Renaissance, including the book “al-Ḥāwī fī al-Ṭibb” of al-Rāzī.⁵⁸ It was translated into Latin by order of Charles I in 1279 AD, and then, spread over the following centuries in the form of countless manuscripts. From the year 1486, it was printed continuously, and its impact on European medicine was profound.⁵⁹

Ibn Sīnā’s work *al-Qānūn fī al-Ṭibb* “Canon in medicine” of Ibn Sīnā was the longest single reference work in medicine. It had 15 editions in the last 30 years of the sixteenth century AD, and even more editions in the sixteenth century.⁶⁰ This book enabled European scientists to lay the foundations of the scientific revolution, which began in the thirteenth century and reached its peak stage in the seventeenth century. *Kitāb al-Manāẓir* “The Book of Optics” of Ibn al-Haytham influenced medieval studies, especially the works of Roger Bacon in the thirteenth century.⁶¹ Surgery was influenced by the *The Book of Discharge of Abū al-Qāsim al-Zahrāwī*, which was printed in Venice in 1497, in Basel in 1541, and

⁵⁶ ‘Abdullah al-‘Umarī (1990). *Tārīkh al-‘Ilm ‘and al-‘Arab*, p. 92; ‘Abd al-Mun‘im Mājid (1986). *Tārīkh al-Ḥadārah al-Islāmiyya fī al-‘Uṣūr al-Wuṣṭā* Cairo: Maktabt al-Anjūl al-Maṣriyya, pp. 281–283.

⁵⁷ Ibn Abī Uṣaybi‘a, Aḥmad ibn Qāsim (d. 668/1270). *‘Uyūn al-Anbā’ fī Ṭabaqāt al-Āṭibā’*, pp. 315–316.

⁵⁸ Honke, Zagrid (1981). *Allahs sonne über dem abendland unser Arabisches erbe*, translated into Arabic by Fārūq Bayḍūn and Kamāl Dasūqī, *Shams al-‘Arab Tasṭa‘ alā al-Gharb: Athar al-Ḥadārah al-‘Arabiyyah fī Urūbā*, pp. 243–244; al-Mīdānī, ‘Abd al-Rahmān Habnakah (1980). *Usus al-Ḥadārah al-Islāmiyya wa Wasā’iḥihā* Damascus: Dār al-Qlām, p. 655; ‘Abdullah al-‘Umarī (1990). *Tārīkh al-‘Ilm ‘and al-‘Arab*, pp. 88–94.

⁵⁹ Arnold, Thomas Walker, Sir, (1864–1930). *The Legacy of Islam*/Turāth al-Islām, tr. Jirjis Fathallah Beirut: Dār al-Ṭalī‘ah, 1978, pp. 465–466.

⁶⁰ Ibid., p. 472.

⁶¹ Fuat Sezgin (1984). *Muḥādāraṭ fī Tārīkh al-‘Ulūm al-‘Arabiyya wal-Islāmiyya*, pp. 120–125; Arshīd Yūsuf (2005). *al-Ḥadārah al-Islāmiyya: Nuṣūm ‘Ulūm Funūn*, pp. 468–469.