

Early Islamic *Tarjamah* (translation) and *al-Muthāqafah* (acculturation) and its position in human civilization

Dr. Labeeb Ahmed Bsoul¹

E-mail: labeeb.bsoul@kustar.ac.ae; labeeb.bsoul@gmail.com

Department of Humanities and Social Science, Khalifa University, Abu Dhabi, United Arab Emirates

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Abstract

It is no exaggeration to say that Arab-Islamic civilization had no counterpart in Europe's modern era, advanced technical era, or nuclear age. In general, modern Europe is still obfuscating the debt that its renaissance owes to the science and civilization of Muslim Arabs. Most research in intellectual and philosophical studies historically has discussed modern Europe by moving rapidly towards the earliest eras, without giving recognition to the influence of Arab Islamic civilization. Even modern Western civilization revolves around itself in a negative way; its thinkers see the history of the world only as the path to the West's great progress. One thing that is overlooked is the translation movement's unique role in providing the Arab mind with ideas, opinions, and theories in the various sciences and literature. Arab-Islamic civilization was characterized by the process of human development, especially during the first four centuries of Islam, when Arabic was the official language of the state. Translation contributed to the prosperity and cultural growth of that period and to the history of Arabs and Muslims. This article attempts to shed light on the motives that prompted Arab Muslims to transfer books of science, philosophy, and literature to their language, a process known as *muthāqafah*/acculturation, which is linked to the reality of successive and ongoing conquests. *Muthāqafah*/acculturation caused Muslim Arabs to take into account the importance of new ideas and conditions.

Keywords: *Tarjamah*, *Muthāqafah*, Islamic science, Muslim scientists, *Bayt al-Ḥikmah*, Qur'ān, al-Ma'mūn, Khālid ibn Yazīd, Ḥunain ibn Ishāq, Ancient schools.

¹ Associate Professor in the Department of Humanities and Social Sciences at Khalifa University, Abu Dhabi, the United Arab Emirates. Author of several books including *International Treaties (Mu'ahadat) in Islam: Theory and Practice in the Light of Siyar (Islamic International Law)* Lanham: University Press of America, 2008; *Formation of Islamic jurisprudence: From the Time of the Prophetic to the middle of the 4th century*. New York: Palgrave Macmillan, 2016; and *Islamic History and Law: From the 4th to the 11th Century and Beyond*. New York: Palgrave Macmillan, 2016; a forthcoming book entitled *Medieval Islamic World: An Intellectual History of Science and Politics* (2018), and numerous academic articles in the field of Islamic Law, Sciences in Islam and International Relations.

Introduction

Translation is a sophisticated cultural act that is active and constructive. It aims to expand and to sharpen the effectiveness of the circle of dialogue in its environment by absorbing the greatest human knowledge and gaining the expertise of others, which can be used both as tools in development, improvement, and competition, and then as rich cultural tender. This cultural tender is the key for nations to avoid intellectual isolation, on the one hand, and to eliminate absolute subordination that leads to assimilation of the other, on the other hand. Translation is not only a fruitful communication and a living culture, but is also a true expression of an ambitious will to change reality and to enter into a profound dialogue with the achievements and conquests of science to turn them into fuel that feeds the movement of mass societal transformation. Translated books are, therefore, a function of the intellectual content of social development. Throughout history, the prosperity of translation has always been synonymous with the movement of social advancement and is consistent with the progress of societies, revealing a decisive positive relationship between the Renaissance and translation.²

Translation is one of the clearest examples of cultural communication, regardless of the relationship between cultures. This communication can be positive or negative. A good example is the Orientalist movement led by Western thinkers who employed their knowledge of the East to control it, which culminated in the movement of modern colonialism. This is the basis of Edward Said's ideas in *Orientalism*³ and *Culture and Imperialism*.⁴ In the following pages, the intention is to shed light on the early Islamic approach toward the translation movement in practice rather than in theory.

² Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd-4th/8th-10th centuries)*. London: Routledge, pp. 107-108.

³ Said, Edward (1979). *Orientalism*. New York: Vintage Books.

⁴ Said, Edward (1994). *Culture and Imperialism*. New York: Vintage Books.

According to Ibn Manẓūr's work *Lisān al-'Arab*, the term translation or *tarjamah* literarily means that "someone interpreted his words in another language."⁵ Moreover, translation is the analysis of the transfer of speech from one language to another, as well as an interpretation, an explanation, and a commentary.⁶ Translation in the Arab world throughout history – as a medium of communication, a channel of knowledge transfer, the exchange of ideas and concepts between nations and peoples, and the convergence of different civilizations and cultures – has a prominent place in terms of care and attention. The concept of translation is derived from the Qur'ān, because people created different races, nations, tribes, languages, and customs, as the Qur'ānic verses read:

And among His Signs is the creation of the heavens and the earth, and the difference of your languages and colors. Verily, in that are indeed signs for men of sound knowledge. Q. 30:22.

Thus, People have need of acquaintance and understanding and to benefit from each other:

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 honorable of you with Allah is that (believer) who has *At-Taḳwā* [i.e. one of the *Muttaqūn* (pious - see V.2:2)]. Verily, Allah is All-Knowing, All-Aware. Q. 49: 13.

Muslims believe that it is their responsibility to transfer this worldly message to all mankind; thus, the process of mastering languages so as to communicate with others is a necessary means to achieve the goal. The translation of books of *fiqh*/jurisprudence and *tafsīr*/Qur'ān exegesis or commentary and some literary arts show the truth of Arab and Islamic civilization apart from intolerance and terrorism, a civilization characterized by openness and tolerance.

Verily, in this (the Qur'ān) there is a plain Message for people who worship Allah (i.e. the true, real believers of Islamic Monotheism who act practically on the Qur'an and the Sunnah legal ways of the Prophet. And We have sent

⁵ Ibn Manẓūr, Muḥammad ibn Makram (d. 711/1312). *Lisān al-'Arab*. Beirut: Dār al-Jilī, vol. 1: 316.

⁶ *al-Munjid fī al-Lughā al-'Arabiyya al-Mu'āṣirah*. Beirut: Dār al-Mashriq, 2001.

you (O Muḥammad) not but as a mercy for the *‘Ālamīn*
(mankind, *jinn*s and all that exists). Q. 21: 106-107

Therefore, translation is a common goal of all civilizations and nations, as there is no nation or civilization that did not borrow from their predecessors. The Arab civilization did not lag behind in this regard, but on the contrary helped to preserve the heritage of all humanity and contribute to and transfer it to those who came after. Arab Islamic civilization asked the question of what is contrary to civilization in its great virtue, which is the virtue of tolerance and respect for the heritage of a human being.⁷ As the Qur’ānic verse reads:

And We have not sent you (O Muḥammad) except as a
giver of glad tidings and a warner to all mankind, but most
of men know not. Q. 34: 28.

In the ‘Abbasid period, the *Bayt al-Ḥikma*/House of Wisdom was established,⁸ and during the Fatimid period *Dār al-Ḥikma* or *Dār al-‘Ilm*/House of Knowledge appeared.⁹ In the modern era, “al-Asun School” was established by Rafā‘t al-Ṭaḥṭāwī.¹⁰ In the beginning of the current millennium, many institutions, associations, and research centers were created which were interested in translation.

When Islam appeared and Muslims conquered Persia, Iraq, Syria, and Egypt in the 7th century, they noticed the existing schools in these regions that represented the era of Greek culture, on the one hand, and the role of Syrians, who represent the link between the Arabs and the language of Greece, on the other. Greek language was common in the Syriac schools, and when the Arabs and Muslims conquered Iraq, Syria, and Egypt and made contact with the

⁷ Aqād, ‘Abbās Maḥmūd (2002). *Athar al-‘Arab fī al-Ḥaḍārah al-Urūbiyyah*. Cairo: Dār al-Nahḍah, p. 32.; see Bsoul, Labeed Ahmed (2018). *Medieval Islamic World: An Intellectual History of Science and Politics*. New York: Peter Lang Publishing, Inc.; Saliba, George (2007). *Islamic Science and the Making of the European Renaissance*. Cambridge: The MIT Press.

⁸ al-Ṣafadī, Ṣalāḥ al-Dīn Khalīl ibn Aybak (d. 764/1363). *al-Wāfī bi-l-Wafiyā*. Beirut: Dār Iḥyā’ al-Turāth al-‘Arabī, 2000, vol. 4: 336; Khaḍīr Aḥmad ‘Aṭālla (1989). *Bayt al-Ḥikma fī ‘Aīr al-‘Abbāsiyyīn*. Cairo: Dār al-Fikr al-‘Arabī, p. 29; Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society* (2nd-4th/8th-10th centuries), 45-49.

⁹ Ibn al-Athīr, Abū al-Ḥasan ‘Alī ibn Abū al-Karam Muḥammad (d. 629/1232). *al-Kāmil fī al-Tārīkh*. Beirut: Dār al-Kitāb al-‘Arabī, 1985, vol. 10:31-32; Ibn Kathīr, Ismā‘īl ibn ‘Umar (d. 774/1373). *al-Bidāyah wa’l-Nihāyah*. Beirut: Maktabat al-Ma‘ārif, 1977; vol. 13: 139-140.

¹⁰ al-Zarkalī, Khayr al-Dīn (2002). *al-‘Ām*. Beirut: Dār al-‘Ilm lil-Malāyīn, vol. 3: 29; Kaḥālah, ‘Umar Riḍa (1957). *Mu‘jam al-Mu‘alifīn*. Damascus: al-Maktabah al-‘Arabiyyah, vol. 4: 168; Sayyed Ḥusayn al-Ghafāni (2004). *al-‘Ām wa Aqzām fī Mīzān al-Islam*. Jeddah: Dār Mājid al-‘Usūrī, vol. 1: 57-60.

cultures of those Christian schools, they asked the Syriacs to transfer Greek scientific and intellectual heritage into Arabic.¹¹

Examples include the School of Alexandria (founded 331 BC) and the school of Antioch North Levant (founded 300 BC), which embraced the culture and thought of Greece.¹² Arabs were not ignorant of these cultures, because some of the cultural influences from previous schools were leaked to them.¹³ By virtue of Islam's enthusiasm for science and tolerance for other religions, Muslims gained a wealth of benefits from the cultures they established contact with, and the only way to know them better was through translating their works.¹⁴

Two different opinions exist about the emergence of the translation movement in Islamic civilization. The first opinion, which dates back to the early Umayyad period, is that the first roots of the translation movement into Arabic were in the early Umayyad era,¹⁵ where it was mentioned in sources such as by Ibn al-Nadīm (380/900) in *al-Fihrist*, works of Khālid ibn Yazīd ibn Mu'āwiyya (85-705), and the *hakīm*/sage of the family of al-Marwān, who was virtuous and had a love of science.¹⁶ After he voluntarily abdicated the caliphate,¹⁷ he ordered a group of Greek philosophers to come down to Alexandria in Egypt to request of some books in medicine and the science of workmanship (chemistry) to translate into Arabic. Ibn Khalkān

¹¹ Sayyed Amīr 'Alī (2001). *Mukhtaṣar Tārīkh al-'Arab wal-Tamadun al-Islamī*, tr. Ra'fat Riyād. Cairo: Dār al-Āfāq, p. 240; Nājī Ma'rūf (1969). *Wāṣilat al-Ḥaḍārah al-'Arabiyya*. Baghdad: Maṭba'at al-Taḍāmūn, p. 427; Zakariyā Hāshim Zakariyā (1975). *Faḍl al-Ḥaḍārah al-Islamiyya wal-'Arabiyya 'alā al-'Ālam*. Cairo: Dār Ḥaḍat Maṣīr, 282; O'Leary, De Lacy (1979). *How Greek Science Passed to the Arabs*. London: Routledge & Kegan Paul Ltd.

¹² Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd-4th/8th-10th centuries)*, pp. 10-16, 146.

¹³ Muṣṭafā al-Nashār (1995). *Madrasat al-Iskandariyya al-Falsafiyya bayn al-Turūth al-Sharqī wal-Falsafah al-Yūnāniyyah*. Cairo: Dār al-Ma'ārif, pp. 14-19, 23-28.

¹⁴ Ibid, pp. 23-28; 'Abd al-Mun'im Mājid (1973). *al-'Aṣr al-'Abbāsī al-Awal aw al-Qiran al-Dhahabī fī Tārīkh al-'Abbāsiyyīn*. Cairo: Maṭba'at al-Anglo al-Maṣriyyah, vol. 1: 352-353; Aḥmad Shalabī (1966). *Tārīkh al-Tarbiyya al-Islamiyyah*. Cairo: Maktabat al-Nahḍah al-Miṣriyyah, pp. 163-164.

¹⁵ 'Abd al-'Azīz al-Dūrī (2007). *Awrāq fī al-Tārīkh wal-Ḥaḍārah: Awrāq fī al-Fikr wal-Thaqāfah*. Beirut: Markaz Dirāsāt al-Wiḥdah al-'Arabiyya, pp. 177-179.

¹⁶ Ibn al-Nadīm, Abū al-Faraj Muḥammad ibn Ishāq (d. 380/990). *al-Fihrist*, ed. Yūsuf 'Alī al-Ṭawīl. Beirut: Dār al-Kutub al-'Ilmiyyah, 2010, pp. 544-545.

¹⁷ Qanawātī, George. "al-Khīmīyā' al-'Arabiyya", in Rushdī Rāshid (2005). *Mawsū'at Tārīkh al-'Ulūm al-'Arabiyya*. Beirut: Markaz Dirāsāt al-Wiḥdah al-'Arabiyya, vol. III.: 1103-1104, 1134, 1159.

says that Khālīd ibn Yazīd was the most learned individual of Qurayhs in arts and science, with experience in and perfection of chemistry and medicine.¹⁸ Al-Jāhīz also indicated that Khālīd ibn Yazīd was the first to establish the era of translation and philosophy and made companions with the wise people and scholars of all professions.¹⁹ It has been said that Khālīd ibn Yazīd brought from Alexandria a Byzantine monk named Marian, and asked him to teach him art and skills, and that he asked another Greek scholar named Asīṭaphān/Istifan to translate what Marian had brought into Arabic.²⁰

The Umayyad Caliph who completed the translation efforts after Khālīd ibn Yazīd was ‘Umar ibn ‘Abd al-‘Azīz (r. 99-101/717-719). He was accompanied when he resumed the Caliphate in the city by one of the scholars of the Alexandria school, Ibn Abjar, ‘Abd al-Malik ibn Sa‘īd, who accepted Islam, and he relied on him in the medical field. The Caliph ‘Umar ibn ‘Abd al-‘Azīz also transferred the Alexandria school scientists to the school of Antioch in the year 100/718.²¹ The the school of Alexandria did not close but remained open in the ‘Abbasid period, and one of its most famous physicians, the Egyptian Christian physician Balīṭān, was appointed by Hārūn al-Rashīd (r.170-194/786-810) and assigned to look after the

¹⁸ Ibn Khalikān, Abū al-‘Abbās Shams al-Dīn (d. 680/1282). *Wafīyyāt al-A’yūn wa Anbā’ Abnā’ al-Zamān*, Ed. Iḥsān ‘Abbās. Beirut: Dār Sadir, 1977, vol. 2: 224; ‘Alī Sāmī al-Nashār (2016). *Manāhij al-Baḥth ‘and Mufakirī al-Islam wa Iktishāf al-Manhaj al-‘Ilmī fī al-‘Ālam al-Islamī*. Beirut: Dār al-Nahḍah al-‘Arabiyya, pp.19-20.

¹⁹ al-Jāhīz, Abū ‘Uthmān ‘Umrū ibn Baḥār (d. 255/869). *al-Bayān wal-Tabyīn*, ed. ‘Abd al-Salām Hārūn. Beirut: Dār al-Fikir, 1975, vol. 1: 328.

²⁰ Ibn Kathīr, Ismā‘īl ibn ‘Umar (d. 774/1373). *al-Bidāyah wa’l-Nihāyah*. Beirut: Maktabat al-Ma‘ārif, 1977, vol. 9:74; al-Dhahabī, Shams al-Dīn Abū ‘Abd Allāh Muḥammad ibn ‘Uthmān (d. 748/1348). *Siyar Aīlām al-Nubalā’*, ed. Shu‘ayb al-Arnā‘ūt and Ḥusayn al-Asad. Beirut: Mu‘assasat al-Risālah, 1985, vol. 9:412; Riḥab Khaḍir ‘Akāwī. *Mawsū‘at ‘Abāirat al-Islam fī al-Fizyā’ wal-Kīmī wal-Riyāḍiyyāt*. Beirut: Dār al-Fikir, 1992, vol. 4:13; Ḥājī Khalīfah, Muṣṭafā ibn ‘Abd Allāh al-Qusṭanṭīnī (1994). *Kashf al-Zunūn ‘an-Asāmī al-Kutub wa’l-Funūn*. Baghdad: Maktabat al-Mutanabbī, vol. 2: 1254-1255.

²¹ Ibn Abī Uṣaybi‘a, Aḥmad ibn Qāsim (d. 668/1270). *‘Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibā’*, ed. Muhammad Basil ‘Uyun al-Sud. Beirut: Dār al-Kutub al-‘Ilmiyya, p. 153; Jirji, Zaydān (1992). *Tārīkh Adāb al-Lughah al-‘Arabiyyah*. Beirut: Dār Maktabat al-Ḥayāh, vol. 1: 233; Ibrāhīm Fāḍil Khalīl (1984). *Khālīd ibn Yazīd Sīratuhu wa Ihtimāmātihī al-‘Ilmiyya: Dirāsah fī al-‘Ulūm ‘and al-‘Arab*. Baghdad: Dār al-Ḥuriyya, p. 187; ‘Alī Sāmī al-Nashār (2016). *Manāhij al-Baḥth ‘and Mufakirī al-Islam wa Iktishāf al-Manhaj al-‘Ilmī fī al-‘Ālam al-Islamī*, pp. 20-21; Smith, Emily Savage (2005). “al-Ṭib,” in Rushdī Rāshid. *Mawsū‘at Tārīkh al-‘Ulūm al-‘Arabiyya*. Beirut: Markaz Dirāsāt al-Wiḥḍa al-‘Arabiyya, vol. III: 1159-1160.

treatment of the caliph's odalisque/maid.²² Saīd ibn Tūfīl (d. 299/911) was the physician of Ahmed ibn Ṭūlūn (r. 254-270/868-883).²³

Schools that Flourished in Science and Translation

The immersion of the Alexandria School in the religious debate on some Christian issues and later on the status of the Caliphate, especially in the 'Abbasid period, influenced the schools of the East.²⁴ This was especially the case for the Jundisabour School, the home of modern Platonism, which flourished in the second/eighth century in Egypt. Its language was Greek, so the Jews were constantly reading the Torah/Old Testament in Greek translation, as well as famous Greek scholars such as Euclid, Archimedes in Engineering and Mathematics, and Ptolemy in Astronomy, and Galenus in Medicine.²⁵ The Jundisabour School was famous for its study of medicine, for which Greek books were translated into Syriac and then transferred to Arabic; this school included the physicians of the Bakhtish family, the most famous of whom treated the first Abbasid Caliphs.²⁶

Ḥurān School was the center of the Ṣābi'a/Zoroastrian Syrians who mingled with Greek Pagans fleeing Christian persecution.²⁷ Associated with this school is Thābit ibn Qura al-Ṣābi'ī (211-288/826-901),²⁸ who had many works in medicine and served the 'Abbasid caliphate (279-289/892-902). His descendant was Sinān ibn Thābit, a descendant of the

²² Ibn Abī Uṣaybi'a, Aḥmad ibn Qāsim (d. 668/1270). *'Uyūn al-Anbā' fī Ṭabaqāt al-Aṭibā'*, p. 496-500.

²³ Ibid, pp. 497-500; Smith, Emily Savage (2005). "al-Ṭib," in Rushdī Rāshid, *Mawsū'at Ṭārīkh al-'Ulūm al-'Arabiyya*. Beirut: Markaz Dirāsāt al-Wiḥda al-'Arabiyya, vol. III: 1151-1224; 'Abd al-'Azīz al-Dūrī (2007). *Awrāq fī al-Ṭārīkh wal-Ḥaḍārah: Awrāq fī al-Fikr wal-Thaqāfah*, pp. 177-178.

²⁴ 'Alī Sāmī al-Nashār (2016). *Manāhij al-Baḥth 'and Mufakīr al-Islam wa Iktishāf al-Manhaj al-'Ilmī fī al-'Ālam al-Islamī*, pp. 20-23.

²⁵ Ḥarbī 'Abbās 'Aṭīdū (1992). *Malāmiḥ li-Fikr al-Falsafī wa al-Dīnī madrasat al-Iskandariyya al-Qadīmah*. Beirut: Dār al-'Ulūm al-'Arabiyya, pp. 250-252.

²⁶ al-Qaṭṭī, Jamāl al-Dīn 'Alī ibn Yūsuf (d. 646/1248). *Ta'rīkh al-Ḥukamā'*, ed. Muḥammad 'Awnī 'Abd al-Raūf. Cairo: Maktabat al-Ādāb, 2008, pp. 158-165.

²⁷ Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd-4th/8th-10th centuries)*, pp. 34-52.

²⁸ Ibn al-Nadīm, Abū al-Faraj Muḥammad ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 435-436; Ibn Abī Uṣaybi'a, Aḥmad ibn Qāsim (d. 668/1270). *'Uyūn al-Anbā' fī Ṭabaqāt al-Aṭibā'*, pp. 270-276; Ibn Khalikān, Abū al-'Abbās Shams al-Dīn (d. 680/1282). *Wafīyyāt al-'A'yān wa Anbā' Abnā' al-Zamān*, vol. 1: 278; al-Qaṭṭī, Jamāl al-Dīn 'Alī ibn Yūsuf (d. 646/1248). *Ta'rīkh al-Ḥukamā'*, pp. 80-83; Ibn Juljul, Abū Dawūd Sulaymān ibn Ḥasān al-Andalusī (d. 944). *Ṭabaqāt al-Aṭibā' wal-Ḥukamā'*, ed. Fu'ād Sayyed. Beirut: Mu'asassat al-Risālah, 1985, pp. 72-75.

Ṣābi'a/Zoroastrian who gained approval of the caliph al-Qāhir.²⁹ The Ḥurān School of Astronomy is also known for its importance in this field. The work of Abū 'Abdullah Muḥammed ibn Jābir ibn Sinān al-Batānī (d. 317/929), *Kitāb al-Zij al-Sabi*, is the only book in astronomy which presented the results of the monitoring of fixed planets; it also determined the tendency of the cycle of the eclipse (astronomy) with great accuracy, discussed the length of the year and seasons and the orbit of the sun, and described the movements of the moon and planets and corrected some information about them.³⁰ Abū Ja'far Muḥammed ibn al-Ḥusayn al-Khāzin (d. 360/ 971) wrote *Zīj al-Ṣafā' ih* (The Astronomical Handbook of Plates), which was described by his successors as the best work in the field. The work describes some astronomical instruments; in particular, it describes an astrolabe fitted with plates inscribed with tables and a commentary on the use of these. He also wrote a commentary on Ptolemy's *Almagest*.³¹

The second opinion, which is the most accurate view of the origin of translation, is that the translation movement dates back to the origin of Islam in the era of the Prophet, peace be upon him, and commissioned him, and that the companions narrated the prophetic tradition which reads: "Who knew the language of the people, safe from their evil." Among the most

²⁹ Ibn al-Nadīm, Abū al-Faraj Muḥammed ibn Ishāq (d. 380/990). *al-Fihrist*, p. 47; Ibn Abī Uṣaybi'a, Aḥmad ibn Qāsim (d. 668/1270). *'Uyūn al-Anbā' fī Ṭabaqāt al-Aṭibā'*, pp. 276-288.

³⁰ Ibn al-Nadīm, Abū al-Faraj Muḥammed ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 444-445; Aḥmad 'Abd al-Bāqī (1990). *Min A'lām al-'Ulamā' al-'Arab fī al-Qirn al-Thāliṭh al-Hijrī*. Beirut: Markaz Dirāsāt al-Wiḥdah al-'Arabiyya, pp. 263-276; Le Bon, Gustave (1884). *La Civilisation des Arabes*. Paris: Firmin-Didot; translated into Arabic by 'Adil Zu'iter, 1969. *Hadarat al-'Arab*, p. 457; Halaq, Hasan (1995). *Science at the Arab its Origins and Features of Civilization*, pp. 316-317; al-Khalili, Jim (2012). *Pathfinders: The Golden Age of Arabic Science*. London: Penguin Books; Seyyed Hossein Nasr (1987). *Sciences and Civilization in Islam*, p. 170; Le Bon, Gustave (1884). *La Civilisation des Arabes*. Paris: Firmin-Didot; translated into Arabic by 'Adil Zu'iter, 1969. *Hadarat al-'Arab*, Cairo: Matba'at 'Issa al-Halabi, p. 457; Saliba, George (2007). *Islamic Science and the Making of the European Renaissance*, p. 87; Samsó, Julio (1977). "A Homocentric Solar Model by Abū Ja'far al-Khāzin," *Journal for History of Arabic Science*. 1: 268-275; King, David (1987). *Islamic Astronomical Instrument*. London: Variorum.

³¹ Ibn al-Nadīm, Abū al-Faraj Muḥammed ibn Ishāq (d. 380/990). *al-Fihrist*, p. 448; Morleón, Régis, "Ilm al-Falak al-'Arabī al-Sharqī bayn al-qirnayn al-thāmin wal-ḥādī 'ashar", in Rushdī Rāshid. *Mawsū'at Tārīkh al-'Ulūm al-'Arabiyya*. Beirut: Markaz Dirāsāt al-Wiḥdah al-'Arabiyya vol. I: 83-84; Aḥmad Amīn (1982). *Fajr al-Islam: Yabḥath 'an al-Ḥayāt al-'Aqliyya fī Ṣadr al-Islam 'ilā ākhir al-Dawlah al-Amawīyyah*. Cairo: al-Hay'ah al-Maṣriyyah, pp. 153-154; Veret, Juan and Julio Samsó. "Ṭatawurrāt al-'Ilm al-'Arabī fī al-Andalus," in Rushdī Rāshid. *Mawsū'at Tārīkh al-'Ulūm al-'Arabiyya* Beirut: Markaz Dirāsāt al-Wiḥdah al-'Arabiyya vol. I: 370-371; Knorr, Wilbur (1989). *The Textual Studies in Ancient and Medieval Geometry*. Birkhäuser, pp. 254-255.

famous of Syriac learning in the era of the Prophet was Zayd ibn Thābit (d. 45/665), who learned the Syriac language in sixty days and also learned Persian and Roman.³² The oldest fragment in Islam dates back to the year 22/643, with a text in the name of ‘Amr ibn al-‘Āṣ, and contains three lines in Greek followed by the translation in Arabic underneath.³³ Thus, translation first appeared during the origins of Islam and not just since the Umayyad era.³⁴

The Development of the Translation Movement and its Prosperity

The translation movement into Arabic grew and intensified in the ‘Abbasid era by virtue of the ‘Abbasid caliphs. They opened Baghdad to the scientists and showed them forms of honor and encouragement regardless of their interests and beliefs. However, the translation movement in the Umayyad era was an individualized attempt that would soon whither away with the disappearance of specific individuals.³⁵ It became instead a cornerstone of state policy, no longer an individual effort. While in the Umayyad period translation was limited to chemistry, astronomy, and medicine, in the ‘Abbasid era it became wider, encompassing philosophy, logic, experimental sciences, and literary books. Examples of ‘Abbasid Caliphs’ interest of scholars and translators was the Caliph Abū Ja‘far al-Manṣūr (r. 136-158/753-775), who took interest in the translation of books into Arabic, whether they were Greek or Persian.³⁶ At that point, Ḥunayn ibn Ishāq (194-260/810-873) translated some books of Hippocrates and

³² See Ṣafwān ‘Adnān Dāwūdī (1999). *Zayd ibn Thābit Kātib al-Waḥī wa Jāmi‘ al-Qur’ān*. Damascus: Dār al-Qalam.

³³ Hoyland, R., “New Documentary Texts and The Early Islamic State”, *Bulletin of the School of Oriental and African Studies*. Vol. 69, pp. 411-412.

³⁴ Ibn Khalikān, Abū al-‘Abbās Shams al-Dīn (d. 680/1282). *Wafīyyāt al-A’yān wa Anbā’ Abnā’ al-Zamān*. Ed. Iḥsān ‘Abbās. Beirut: Dār Sadir, 1977, vol. 1: 223-234; ‘Alī Sāmī al-Nashār (2016). *Manāḥij al-Baḥth ‘and Mufakirī al-Islam wa Iktishāf al-Manhaj al-‘Ilmī fī al-‘Ālam al-Islamī*. pp. 19-20.

³⁵ ‘Abd al-‘Azīz al-Dūrī (2007). *Awṛūq fī al-Tārīkh wal-Ḥaḍārah: Awṛūq fī al-Fikr wal-Thaqāfah*, p. 177.

³⁶ al-Mas‘ūdī, Abū al-Ḥasan ‘Alī ibn al-Ḥusain (d. 346/957). *Murūj al-Dhahab wa Ma‘ūdīn al-Jawhar*, ed. Yūsuf al-Baqā‘ī. Beirut: Dār Iḥyā’ al-Turāth al-‘Arabī, 2002, vol. 4: 521.

Galenus in medicine,³⁷ and Ibn al-Muqafa' translated the book "Kalīlah wa Dimna" from Fahlawi.³⁸

During the reign of Hārūn al-Rashīd (170-193/786-809), when the number of scientists in Baghdad increased, Dār al-Ḥikma/House of Wisdom was established to serve as a scientific academy in which scholars and learners would meet and were provided with books that were transferred from Asia Minor and Constantinople.³⁹ His son al-Ma'mūn (198-218/813-833) increased the activity of the House of Wisdom, doubled the tender to the translators, and sent the messengers to Constantinople to ask what could be obtained from Greek works in various fields of knowledge.⁴⁰ Al-Ma'mūn went to that group, and among them was al-Ḥajjāj ibn Matar (d. 214/830), who translated the two most sophisticated Greek scientific texts: Euclid's *Elements* and Ptolemy's *Almagest*.⁴¹ With Ibn al-Bīṭrīq (d. 200/815),⁴² they selected what they needed.⁴³ As mentioned by Ibn al-Nadīm in his *al-Fihrist*, the caliph al-Ma'mūn and the Emperor of Constantinople corresponded on this matter.⁴⁴ Some of the most famous translators of the 'Abbasid period include Theophile ibn Touma al-Rahawī, Georges ibn Gabriel, John the Baptist, al-Ḥajjāj ibn Matar ibn Yūsuf al-Kūfī, Thābit ibn Qurra, and Ḥunīn ibn Ishāq.⁴⁵

³⁷ Ibn al-Nadīm, Abū al-Faraj Muḥammed ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 463-464; Ibn Abī Uṣaybi'a, Aḥmad ibn Qāsim (d. 668/1270). *Uyūn al-Anbā' fī Ṭabaqāt al-Aṭibā'*, p. 256; Jacquart, Danielle (1996). "The Influence of Arabic Medicine in the Medieval West", in *Encyclopedia of Arabic Science*, edited by Roshdi Rashed. London: Routledge, Vol. 3: 1226-1228.

³⁸ Ibn al-Nadīm, Abū al-Faraj Muḥammed ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 189-190; al-Mas'ūdī, Abū al-Ḥassan 'Alī ibn al-Ḥusayn (d. 346/957). *Murūj al-Dhahab wa Ma'ādīn al-Jawhar*, vol. 4: 521; 'Abd al-'Azīz al-Dūrī (2007). *Awraq fī al-Tārīkh wal-Ḥaḍārah: Awraq fī al-Fikr wal-Thaqāfah*, p. 123.

³⁹ See Khaḍir Aḥmad 'Aṭālla (1989). *Bayth al-Ḥikma fī 'Aīr al-'Abbāsiyyīn*. Cairo: Dār al-Fikr al-'Arabī, p. 29; al-Khalili, Jim (2010). *Pathfinders the Golden Age of Arabic Science*. London: Penguin Books, pp. 67-74; Françoise Micheau. "al-Mu'asassāt al-'Ilmiyya fī al-Sharq al-Adnā fī al-Qurūn al-Wiistā," in Rushdī Rāshid. *Mawsū'at Tārīkh al-'Ulūm al-'Arabīyya* Beirut: Markaz Dirāsāt al-Wiḥda al-'Arabīyya vol. III: 1258-1258.

⁴⁰ al-Ṣafadī, Ṣalāḥ al-Dīn Khalīl ibn Aybak (d. 764/1363). *al-Wāfī bi-l-Wafiyāt*. Beirut: Dār Iḥyā' al-Turāth al-'Arabī, 2000, vol. 4: 336; Andalusī, Ṣā'id, Abū al-Qāsim ibn Aḥmad ibn 'Abd al-Raḥmān (d. 462.1070). *Ṭabaqāt al-Umam*, ed. Ḥusain Mu'nis. Cairo: Dār al-Ma'ārif, 1988, p. 49.

⁴¹ Saliba, George (2007). *Islamic Science and the Making of the European Renaissance*, p. 17.

⁴² Ibn al-Nadīm, Abū al-Faraj Muḥammed ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 398-399; Ibn Abī Uṣaybi'a, Aḥmad ibn Qāsim (d. 668/1270). *Uyūn al-Anbā' fī Ṭabaqāt al-Aṭibā'*, p. 258.

⁴³ Ibn al-Nadīm, Abū al-Faraj Muḥammed ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 398-399.

⁴⁴ Micheau, Françoise. "al-Mu'asassāt al-'Ilmiyya fī al-Sharq al-Adnā fī al-Qurūn al-Wiistā," in Rushdī Rāshid. *Mawsū'at Tārīkh al-'Ulūm al-'Arabīyya*, vol. III: 1258-1259.

⁴⁵ Ibid, pp. 398-400, 1259-1263.

It is also important to mention Ḥunīn ibn Ishāq, who translated many books in logic, philosophy, and nature. Most of what was transferred in medicine was translated from Greek to Syriac and Arabic translations; of Galen's 95 books translated to Syriac, only 39 were transferred to Arabic.⁴⁶

Influence of Other Civilizations in Islamic Civilization

The Persian influence in Islamic civilization was stronger in the field of literature, where Persian Eastern literature was closer to the taste of the Arabs and their feelings than was the Greek literature. During the 'Abbasid period, scholars who were fluent in Persian and Arabic languages translated Persian books into Arabic, including 'Abdullah ibn al-Muqaffa', Khaled's sons (Mūsā and Yūsuf), and al-Ḥassan ibn Sahl, al-Bulāḍurī, Jablah ibn Sālim, Ishāq ibn Yazīd.⁴⁷ In particular, 'Abdullah ibn al-Muqaffa' translated the history of the Persians, their values and customs, and the conduct of their kings, as well as literary books, including, *Kalīla wa Dimna*, *al-Adab al-Kabīr*/Great literature, *al-Adab al-Ṣaghīr*/Small literature, and *Kitāb al-Yatīma*/Book of the orphan.⁴⁸ Persian civilization included not only literature but also other sciences such as engineering, astronomy, and geography; however, Greece's influence on mental sciences was stronger than that of the Persians.⁴⁹

The Greek influence in literature was limited and no more than the transfer of words, such as *al-Qanṭār*, *al-Durham*, *al-Qaṣṭās*, and *al-Firdaws*, in addition to some wisdom. Greek civilization had a strong influence in the mental sciences and this resulted from the beliefs of

⁴⁶ Abd al-Qādir Muḥammad (1988). *Ḥunīn ibn Ishāq: al-‘aṣr al-Dhahabī lil-Tarjamah*. Beirut: Dār al-Yaqḍah al-‘Arabiyyah, p. 148; Ibn al-Nadīm, Abū al-Faraj Muḥammad ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 463-464; Ibn Abī Uṣaybi‘a, Aḥmad ibn Qāsim (d. 668/1270). *‘Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibā’*, p. 256; al-Qaṭṭī, Abū al-Ḥasan ‘Alī (d. 646/1248). *Akhbār al-‘Ulamā’ bi Akhbār al-Ḥukamā’*. Cairo: Maktabat al-Ādāb, 2008, pp. 171-174; Cārr, Maryam Salāmah (1988). *al-Tarjamah fī al-‘Aṣr al-‘Abbāsī: Madrasat Ḥunayn ibn Ishāq wa Ahamiyatuha fī al-Tarjamah*, tr. Ed. Naīb Gazāwī. Damascus: Wizārat al-Thaqāfah.

⁴⁷ Ibn al-Nadīm, Abū al-Faraj Muḥammad ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 399-400.

⁴⁸ Ibid, pp. 189-190; Ibn Abī Uṣaybi‘a, Aḥmad ibn Qāsim (d. 668/1270). *‘Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibā’*, p. 378.

⁴⁹ Andalusī, Ṣā‘id, Abū al-Qāssim ibn Aḥmad ibn ‘Abd al-Raḥmān (d. 462.1070). *Ṭabaqāt al-Umam*, pp. 49-50; Durant, Will (1885-1981). *Qīṣat al-Ḥaḍarah*, tr. Muḥammad Badrān, Cairo: Lujant al-Ta’līf wal-Tarjama, 1985, vol. 14: 40.

Greeks themselves and their interest in the mind at the expense of manual work or the literary field; Arabs transferred the philosophy of Plato and Aristotle, and in the field of medicine, Galen and Hippocrates.⁵⁰

The Islamic conquest spread to India in the end of the first/seventh century, during the succession of al-Walīd ibn ‘Abdul Malik (86-96/705/715), and resumed in the middle of the second/eighth century, during the reign of Abū Ja‘far al-Manṣūr (136-185/753-801). Some historians, including al-Jāhīz, mentioned that “India was known for its arithmetic, astrology and medicine secrets.”⁵¹ Al-Aṣḥānī wrote “India has knowledge of the Indian relief, and the secrets of medicine and treatment of disease.”⁵² According to Ibn Abī Uṣaybi‘a, a large part of the culture of India and their sciences moved to Persia by virtue of commercial relations between the parties before Islam, and Kisrā Anucharwān ibn Qabādh ibn Fayrūz, king of Persia, sent his physician Barzweh to India to seek literature in medicine. Indications are that *Kalīlah wa Damnah* (‘Abdullah ibn al-Muqaffa‘, a Muslim Persian scholar translated the same from Persian into Arabic) was translated by Barzweh from Indian into Persian, which was moved with the transfer of Barzweh books, as was the game of Chess from India.⁵³ And when Muslims were engaged in the translation of Persian books into Arabic, they transferred parts of the Indian culture and science, and sometimes some of the translators transferred Sanskrit Hindi to Arabic directly, including Mankah al-Hindī and Ibn Duhan al-Hindī.⁵⁴ Among the sciences which Muslims took from the Indians were mathematics, astronomy, and medicine.

⁵⁰ Andalusī, Sā‘id, Abū al-Qāssim ibn Aḥmad ibn ‘Abd al-Rahmān (d. 462/1070). *Ṭabaqāt al-Umam*, p. 49; ‘Alī Sāmī al-Nashār (2016). *Manāhij al-Baḥth ‘and Mufākiri al-Islam wa Iktishāf al-Manhaj al-‘Ilmī fī al-‘Ālam al-Islamī*, pp. 25-27; Durant, Will (1885-1981). *Qīṣat al-Ḥaḍarah*, vol. 14: 40; Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society*, pp. xiv 23-24, 126.

⁵¹ al-Jāhīz, Abū ‘Uthmān ‘Umrū ibn Baḥar (d. 255/869). *al-Bayān wal-Tabyīn*, vol. 1:78.

⁵² Rāghib al-Aṣḥānī, Abū al-Qāsim al-Ḥusayn ibn Muḥammad (d. 502/1108). *Muḥāḍarāt al-Udabā’ wa Muḥā warāt al-Shu‘arā’*. Beirut: Dār al-Arqam, 1999, vol. 1:194.

⁵³ Ibn Abī Uṣaybi‘a, Aḥmad ibn Qāsim (d. 668/1270). *‘Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibā’*, p. 378.

⁵⁴ Ibn al-Nadīm, Abū al-Faraj Muḥammad ibn Ishāq (d. 380/990). *al-Fihrist*, p. 400.

House of wisdom and the prosperity of scientific movement

In 215/830, the House of Wisdom was established in Baghdad. The House of Wisdom is a library, a house of science, and a translation institute. This institute was one of the most important cultural institutes that were established. In the days of al-Ma'mūn and his successors, translation was concentrated in this new institute. The era of translation lasted almost a century from the year 133/750. As Syriac was the language of the greatest translators, many Greek books were transmitted to it before being translated into Arabic.⁵⁵

The encouragement of the caliphs toward the scholars—especially the Hārūn al-Rashīd and then al-Ma'mūn in Baghdad, and the care of the Umayyads in Andalusia—is one of the main reasons for the revival of the scientific movement and its prosperity. Al-Rashīd House of Wisdom or School of Translation in the era of al-Ma'mūn made the greatest effort to translate science, philosophy, and previous knowledge. It was not long before all previous knowledge became available to the Arabs in good translations, and writing and working in science and literature became one of the greatest professions until the proverb was written: Writing honorable professions after the succession.⁵⁶

The role of translation, which was in the House of Wisdom, was followed by another role, that of innovation and creativity. By the tenth century, Arabic was the language used by the *jāhiliyyah*/ignorant as a tool for poetry only, was known by Muslims, and was turned into a strange, new language, with accurate and easily accessible architecture. At the same time, Arabic became the language of politics and literary communication from Central Asia to North Africa and Andalusia. Since then, the people of Iraq, Syria, Lebanon, Palestine, Egypt, Tunisia,

⁵⁵ Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society*, pp. 55-60.

⁵⁶ Maḍhar, Jalāl (1969). *Al-Ḥaḍārah al-Islamiyya Asās al-Taḳadum al-'Ilmī al-Ḥadīth*. Cairo: Markaz al-Sharq al-Awsaṭ, p. 69; Briffault, Robert (1928). *The Making of Humanity*. London: G. Allen and Unwin Ltd., p. 191.

Algeria, and Morocco have been revealing their thoughts in the Arabic tongue.⁵⁷ The next step came after Dār al-Ḥikma and the formation of the literary scientific complex in the part of Dār al-Ma'mūn, and the spread of printing shops/*al-Warrāqīn*—a small bookstore or library—that spread throughout Baghdad.⁵⁸

The House of Wisdom founded by the 'Abbasids in Baghdad is the first House of Wisdom known to the Muslims, containing the greatest issue of precious books of various sciences and knowledge in different languages and texts of cultural institutions; however, because the sources are scattered, it not easy to discuss the texts or authors sequentially. In the House of Wisdom, the most prominent scholars, writers in language, history, jurisprudence, speech, science, etc., wrote some of these books at the request of the caliphs themselves, to be placed in the House of Wisdom.⁵⁹ For example, caliph Hārūn al-Rashīd asked al-Aṣma'ī, 'Abd al-Mālīk ibn Qarīb (d. 216/831) to write a book on history and introduce it to him,⁶⁰ and he asked the chief justice, Abū Yūsuf, Ya'qūb ibn Ibrāhīm (d. 182/798), to write a book about the land tax/*al-Kirāj*.⁶¹ Caliph al-Ma'mūn asked al-Farā', Abū Zakāriyā Yaḥyā ibn Ziyād (d. 208/823) to bring together the fundamentals of grammar and what he had heard from the Arabs.⁶² Among the famous biographers of the House of Wisdom who transferred books from its library was Ibn al-Nadīm (d. 380/990), the author of masterpiece *al-Fihrist/Index*.⁶³ He read rare books and studied geographical images and books of various nations and languages in the

⁵⁷ 'Abd al-'Azīz al-Dūrī (2007). *Awrāq fī al-Tārīkh wal-Ḥaḍārah: Awrāq fī al-Fikr wal-Thaqāfah*, pp. 235-238.

⁵⁸ 'Alī Muḥamad Rādī (1970). *'Aṣr al-Islāmī al-Dhahabī: al-Ma'mūn al-'Abbāsī*. Cairo: al-Dār al-Qawmiyya, p. 73.

⁵⁹ Sa'īd al-Dayājī (1975). *Bayt al-Ḥikma*. al-Mosul: Mu'asassat Dār al-Kutub, pp. 31-35; Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society*, pp. 75-104.

⁶⁰ al-Aṣma'ī, 'Abd al-Malik ibn Qarīb (d. 216/831). *Tārīkh al-'Arab qabl al-Islam*, ed. Muḥammad Ḥasan Āl Yāsīn. London: Dār al-Warāq, 2008; Sa'īd al-Dayājī (1975). *Bayt al-Ḥikma*, p. 36.

⁶¹ Abū Yūsuf, Ya'qūb ibn Ibrāhīm ibn Ḥabīb (d. 182/798). *Kitāb al-Kharāj*, ed. Taha 'Abd al-Ra'uf Sa'd, Muḥammad Sa'd Ḥasan. Cairo: al-Maktabah al-Azhariyya lil-Turath, 1999.

⁶² al-Farā', Abū Zakāriyā Yaḥyā ibn Ziyād (d. 208/823). *Ma'āni al-Qur'ān*, ed. Aḥmad Yūsuf, Muḥammad 'Alī al-Najjār. Beirut: Dār al-Surūr, 1989.

⁶³ Ibn al-Nadīm, Abū al-Faraj Muḥammad ibn Ishāq (d. 380/990). *al-Fihrist*, ed. Yūsuf 'Alī al-Ṭawīl. Beirut: Dār al-Kutub al-'Ilmiyyah, 2010.

House of Wisdom, books and other sources that he relied upon in his precious work.⁶⁴ And al-Aṣḥāhānī, Abū ‘Abdullah Ḥamzah ibn al-Ḥasan (d. 360/970), when he wrote his book *Tārīkh Sunni Mulūk al-Arḍ wal-Anbiyā’*,⁶⁵ was aided by eight copies that were translated into Arabic from a book of *Tārīkh Mulūk al-Furs*; one of these copies was in the library of al-Ma’mūn.⁶⁶

Arab Islamic civilization witnessed the birth of skilled scientists in chemistry such as Jābir ibn Ḥayyān,⁶⁷ and physicists interested in many of the natural phenomena associated with the nature of materials and image, light and magnetism, and movement and motives.⁶⁸ The Muslims first took the science of physics of Greece, adding to it right and sound scientific experiments, in addition to what they had quoted from the works of the Greek scholars. Muslims were also interested in botany due to the importance of plants as a source of food for humans and animals alike, as well as the importance of wood and its uses in housing, heating, cooking, and other purposes.⁶⁹ The history of the ‘Abbasid period includes the Islamic library, with the works it produced in the fields of humanities and experimental sciences.

In the humanities and social sciences, the most famous are the *sharī‘ah* sciences, where prominent polymath scientists emerged. Scientists and researchers of our time are still working on their manuscripts, which are more extensive than one can imagine. The religious culture of the ‘Abbasid period was a window into intertwined cultures, and the door to many of the

⁶⁴ Sa‘īd al-Dayājī (1975). *Bayt al-Hikma*. al-Mosul: Mu’asassat Dār al-Kutub, p. 37.

⁶⁵ al-Aṣḥāhānī, Abū ‘Abdullah Ḥamzah ibn al-Ḥasan (d. 360/970). *Tārīkh Sunni Mulūk al-Arḍ wal-Anbiyā’ ‘alayhim al-Ṣalāt wa al-Salam*. Beirut: Dār Maktabat al-Ḥayāt, 1961.

⁶⁶ Ṭāriq Muḥammad al-‘Azām “Ḥamzah ibn al-Ḥasan Tārīkh Sunni Mulūk al-Arḍ w al-Anbiyā’,” *Arab Journal for the Humanities*, Summer 2013, vol. 31, Issue 123, pp. 153-189.

⁶⁷ Ibn al-Nadīm, Abū al-Faraj Muḥammad ibn Ishāq (d. 380/990). *al-Fihrist*, pp. 546-550.

⁶⁸ Qanawāti, George, “al-Khīmyā’ al-‘Arabiyya”, in Rushdī Rāshid (2005). *Mawsū‘at Tārīkh al-‘Ulūm al-‘Arabiyya*, vol. III., pp. 1101-1103; Saliba, George (2007). *Islamic Science and the Making of the European Renaissance*, pp. 45-46; Seyyed Hossein Nasr (1987). *Sciences and Civilization in Islam*, p. 191; Jābir ibn Ḥayyān (d. 200/816). *Kitāb al-Tajrīd*, within A group edited and published by Holmyard titled: *Muṣanifāt fī ‘Ilm al-Kīmyā’ lil-Ḥakīm Jābir ibn Ḥayyān* Paris, 1928; al-Zarkalī, Khayr al-Dīn (2002). *al-A‘lām*, vol. 2:104; ‘Alī ‘Abdullah al-Dafā’ (1998). *Rawā‘i’ al-Ḥaḍḍārah al-‘Arabiyya w al-Islāmiyya fī al-‘Ulūm*, p. 275; ‘Abd al-Ḥalīm Muntaṣir (1980). *Tārīkh al-‘Ilm wa Dawr al-‘Ulamā’ al-‘Arab fī Taqadumihī*. Cairo: Dār al-Maārif, p. 105-106; Ḥikmat Najīb (1977). *Dirāsāt fī Tārīkh al-‘Ulūm ‘and al-‘Arab*, p. 266.

⁶⁹ Bashīr Niẓām al-Tulīsī, Jamāl Hāshim al-Ḍuwīb (2002). *Tārīkh al-Ḥaḍḍārah al-Islāmiyya*. Beirut: Dār al-Madār al-Islamī, pp. 299-302.

sciences and theoretical and spiritual research in which the people of knowledge were immersed. This is the era of the Islamic jurisprudence.

As for the experimental sciences, the 'Abbasid period was full of scholars and scientists, especially after the development of the translation movement, which featured Muslim scientists in the fields of experimental sciences in particular, such as medicine, pharmacy, engineering, astronomy, and other sciences.⁷⁰ This House of Wisdom was founded by the 'Abbasids to facilitate the means of study, reading, writing, and translation for those who wished for it. It was impossible for people to learn from rare scientific books, translated from different languages into Arabic. Thus, the Muslims utilized the translators as a link between the Muslims and these sciences, and through these translators transferred the sciences of Greece, Syriac, Copts, Persians, and Indians into Arabic.⁷¹

We find that the Arabs saved for humanity from loss much of the heritage of the previous era, through their many translations of books; the world was ignorant of these works until they were translated into Arabic. The Arab Muslims were smart, intelligent, eager to see, and willing to benefit from this high intellectual resource, and Muslim scholars have benefited immensely.⁷²

The caliphs purged the people of the ignorant ways of reading and studying in the House of Wisdom, which was established to spread the science and knowledge that had been transferred from other nations. The caliphs wanted the people to stand up to the facts and the heritage of the nations that were presented to them in various intellectual aspects, and thus opened the doors of the house to all the knowledge seekers, for eager people to learn and to

⁷⁰ Hāshīm 'Abd al-Rāqī 'Issā (2001). *Qaḍāyā wa mawāqif fī al-Tārīkh al-'Abbasī*. Cairo: Maṭba'at al-'Amrāniyya, pp. 301-305; Bsoul, Labeeb Ahmed (2017). "Classical Muslim Scholars' Development of the Experimental Scientific Method: 'Iml al-Istiqā' /induction approach and methodology". *Journal of Humanities and Cultural Studies R&D*, Vol. 2, Issue 4, August, pp. 1-33.

⁷¹ Twafīq Yūsuf al-Wā'ī (1988). *al-Ḥaḍārah al-Islamiyya muqāranah bi al-Ḥaḍārah al-'Arabiyya*. Cairo: Dār al-Wafā', p. 305.

⁷² Ibid, p. 307; Aḥmad Shalabī (1966). *Tārīkh al-Tarbiyya al-Islamiyyah*, pp. 234-235.

attract them, and to facilitate reading, study and copying. People also could attend scientific debates that took place between scientists in this house, on various sciences and the arts and the emergence of opinions and so on.⁷³

This tolerance that prevailed in the House of Wisdom was founded by the caliphs themselves, who loved to spread the pure scientific spirit among all classes. While these books on various intellectual areas were available in the bookshops of the poets in the capital of al-Rashīd and al-Ma'mūn, Europe was wandering in the dark.⁷⁴ Iraq also became in the Abbasid era the most important place for the scientific movement in the world, especially Baghdad, which has gained a wide international fame. In the Islamic and Arabic sciences, or in the transfer of foreign sciences, what contributed to that fame was that their scholars were familiar with a number of languages such as Syriac, Greek, Persian, Hindi, Aramaic, Amhari, and Hebrew.⁷⁵ And the House of Wisdom remained on the covenant with a pillar that radiated wisdom and knowledge, shining brightly, until evil invaded Baghdad in 1258 from the Mongols.⁷⁶

This flourishing of civilization was not free from influence of scientific advancement. The Arabs understood the difference between being specialized in a specific field of science and scholars who were familiar with the latest findings of science. The authors of results of scientific research were slowly published, just as poets and professors of literature advanced in the classical style. The various sciences of the former and their knowledge came under the hands of the Arabs.⁷⁷ It was two centuries before the Arabs had fully absorbed this knowledge, and at the same time worked hard to scrutinize, examine, and correct what they found and then

⁷³ Sa'īd al-Dayājī (1975). *Bayt al-Ḥikma*, pp. 38-39; Micheau, Françoise. "al-Mu'asassāt al-'Ilmiyya fī al-Sharq al-Adnā fī al-Qurūn al-Wiistā," in Rushdī Rāshid. *Mawsū'at Tārīkh al-'Ulūm al-'Arabiyya*. vol. III: 1259-1260.

⁷⁴ Sa'īd al-Dayājī (1975). *Bayt al-Ḥikma*, pp. 38-39.

⁷⁵ Nājī Nājī Ma'rūf (1969). *Wāṣilat al-Ḥaḍārah al-'Arabiyya*, p. 428.

⁷⁶ Zakariyā Hāshim Zakariyā (1975). *Faḍl al-Ḥaḍārah al-Islamiyya wal-'Arabiyya 'alā al-'Ālam*, p. 282.

⁷⁷ Jalāl Maḍhar (1969). *Al-Ḥaḍārah al-Islamiyya Asās al-Taḳadum al-'Ilmī al-Ḥadīth*, p. 68.

add a new form of approach to the field of knowledge known as *istiqrā'* /inductive approach, which had no precedent in any civilization or scholar.⁷⁸ The translators were transferring to Arabic the ammunition of science left by the ancient civilizations of the Egyptians, Greece, Persians, and others.⁷⁹

House of wisdom and its role in spreading Arab civilization to the West

An indication of the interest of Arabs in science, culture, and literature is the phrase that was carved at the doors of science institutes in Andalusia: "The world is based on four pillars: the knowledge of the wise, the great justice, the prayer of the devout, and the valiant valor."⁸⁰ It is remarkable that knowledge came in this phrase which describes the Islamic ideals in Europe. The Arabs began their scientific renaissance in the eighth century by translating, and then they took up the research of intellectual issues and the codification of mathematical and natural sciences until the 14th century. Their activity became astonishing in this regard.⁸¹

It seems to the observer of the Arab civilization that it appeared and failed, or as if it did not appear and was not revealed. But when one looks at the factors that led to the intellectual renaissance in the Latin world, one realizes that this glorious heritage, which grew and flourished in six centuries, the light of human thought during its dark ages, did not dissolve like a summer cloud. It did not fade like water rings, but was carried out to another place of the human family and helped to create an emerging thought, groping for life and trying to get out of darkness to light.⁸²

⁷⁸ Bsoul, Labeeb Ahmed (2017). "Classical Muslim Scholars' Development of the Experimental Scientific Method: *'Iml al-Istiqrā'* /induction approach and methodology." *Journal of Humanities and Cultural Studies R&D*, Vol. 2, Issue 4, August, pp. 1-33.

⁷⁹ Zakariyā Hāshim Zakariyā (1975). *Faḍl al-Ḥaḍārah al-Islamiyya wal-'Arabiyya 'alā al-'Ālam*, p. 280.

⁸⁰ Aḥmad Mulhtār al-'Abādī (1971). *Fī al-Tārīkh al-'Abbāsī wal-Andalusī*. Beirut: Dār al-Nahḍal; Hudā al-Tamīmī (2015). *Al-Adab al-'Arabī 'Abr al-'Aṣūr*. Beirut: Dār al-Sāqī; 'Umar Ibrāhīm Tawfiq (2012). *al-Wāḥī fī Tārīkh al-Adab al-'Arabī fī al-Andalus: Mawḍū 'ūtihi wa Funūnahū*. Amman: Dār Ghaydā'; 'Abd al-'Azīz 'Atīq (1976). *al-Adab al-'Arabī fī al-Andalus*. Beirut: Dār al-Nahḍah; Ḥiṭī, Philip, Edward Jirjis and Jibrā'il Jabūr (1980). *Tārīkh al-'Arab*. Cairo: Gandūr li-Ṭibā'ah, p. 181.

⁸¹ Kamāl al-Bāzjī (1966). *Ma'ālim al-Fikr al-'Arabī fī al-'Aṣr al-Wasṭī*. Beirut: Dār al-'Ilm lil-Malāyīn, pp. 335-336.

⁸² Ibid.

Muslims played a great role in the service of world culture. They saved these sciences and received these books in the dark ages, giving them life. Through their institutes, universities, and research, this knowledge reached Europe. Large groups of Arabic texts were translated into Latin, mainly for the culture of modern Europe, and this was one of the most important reasons for the European Renaissance. The first 'Abbasid era lamented the intellectual vigilance that took place in it, and this vigilance had a profound impact on the intellectual and cultural movements in the world, and a great deal of foreign culture was dependent on it, especially Persian, Indian, and Greek.⁸³

The Arab speaking peoples were at the forefront of carrying the flame of culture and civilization throughout the world. The efforts of these peoples also enabled earlier sciences and their philosophy to return to Europe; along with scientific experimental results and commentaries added to the Greek classical works, this facilitated the emergence of the Renaissance in Western Europe.⁸⁴ The scientific renaissance began in the 8th century with translation and transport. The transfer was from Greek to Arabic through Syriac, from Hindi to Arabic through Persian, and then from Arabic to Latin; through Hebrew or Spanish and then between them occurred without an intermediary. Just as the intellectual movement did not originate in the West, it was preceded by a period of readiness and a sense of need, and it did not come into the Latin world until after an acute sense of urgency.⁸⁵

The Islamic world has entered European thought in many ways, in part because Andalusia was a remarkable chapter in the intellectual history of the Middle Ages. Between the middle of the eighth century and the beginning of the 13th century, the Arab speaking

⁸³ Aḥmad Shalabī (1966). *Tārīkh al-Tarbiyya al-Islamiyyah*, vol. 3: 331-334.

⁸⁴ See Bsoul, Labeeb Ahmed (2018). *Medieval Islamic World: An Intellectual History of Science and Politics*. New York: Peter Lang Publishing Inc.; Saliba, George (2007). *Islamic Science and the Making of the European Renaissance*. Cambridge: The MIT Press.

⁸⁵ Kamāl al-Bāzjī (1966). *Ma'ālim al-Fikr al-'Arabī fī al-'Aṣr al-Wasīl*, p. 337.

peoples were at the forefront of the cultural and modern agendas throughout the world. The efforts of these peoples also enabled the science of previous civilizations and their philosophy to return to Europe with Arabic thoughts, facilitating the emergence of the Renaissance in Western Europe and perhaps the greatest scientists of Andalusia. 'Alī ibn Ḥazm al-Qurṭubī (d. 456/1064), poet, writer, philosopher, and jurist, is one of the two or three who are considered the most prolific authors and thinkers of Islam.⁸⁶

The intellectual connection between the Arabs and the Latins was the strongest in Sicily. They were here more firmly established than elsewhere, including in terms of science. Arab civilization started being documented in Sicily in the second half of the tenth century.⁸⁷ Andalusia was no less important than Sicily. Cordoba was one of the most famous cities in the world. It was a competitive city of Cairo, Baghdad, and Constantinople and a destination of Western science students. Arab civilization spread towards the north, with emigration of the invaders to Christian Spain. Many of these people were scholars of science and took with them what they had learned of the effects of this civilization, especially Western codes/corpus.⁸⁸

As for Spain, the institutes of science spread so widely that it is said that Cordoba alone had several hundred of these institutes, teaching philosophy, literature, history, and science in its various branches, as well as religious studies.⁸⁹ Spain developed institutes of higher studies, such as those now called universities, and one of the most famous universities in Spain is the

⁸⁶ Ibn Khalikān, Abū al-'Abbās Shams al-Dīn (d. 680/1282). *Wafīyyāt al-A'yān wa Anbā' Abnā' al-Zamān*, Ed. Iḥsān 'Abbās. Beirut: Dār Sadir, 1977, vol. 3: 325-330; Dhahabī, Shams al-Dīn Abū 'Abd Allāh Muḥammad ibn 'Uthmān (d. 748/1348). *Siyar A'lām al-Nubalā'*, ed. Shu'ayb al-Arnā'ūt and Ḥusayn al-Asad. Beirut: Mu'assasat al-Risālah, 1985, vol. 18: 187; Ibn Mifliḥ, Ibrāhīm ibn Aḥmad (d. 1478). *Al-Maqṣad al-Arshad fī Dhikr Aṣḥāb A'imād ibn Hanbal*, ed. 'Abd al-Raḥmān ibn al-'Uthamīnīn. Riyadh: Mkatabat al-Rushd, 1990, vol. 2: 213-214; Ibrāhīm Zakariyā (1966). *Ibn Ḥazm: al-Mufakit al-Zāhirī al-Mawsū'ī*. Cairo: al-Dār al-Maṣriyya; Sharaf al-Dīn 'Abd al-Ḥamīd (2012). *Ibn Ḥazm wa Manhajuhu fī al-Naq al-Uṣūlī*. Amman: Dār al-Warāq; Ṭāhā al-Ḥajrī (1960). *Ibn Ḥazm: Ṣūrah Andalusīyya*. Cairo: Dār al-Fikr al-'Arabī; Farūkh 'Umr (1978). *Ibn Ḥazm al-Kabīr*. Beirut: Dār Libnān; Sālim Yāfūt (2009). *Ibn Ḥazm wal-Fikr al-Falsafī bi al-Maghrib wal-Andalus*. al-Dār al-Baydhā': Dār al-Thaqāfah; 'Abd al-Laṭīf Sharāra (1980). *Ibn Ḥazm Rā'id al-Fikr al-'Ilmī*. Beirut: al-Maktab al-Tijārī; Muḥammad Abū Zahrah (2009). *Ibn Ḥazm: Ḥayātīhi wa 'Aṣrihi Arā'uhu wa Fiqhuhu*. Cairo: Dār al-Fikr al-'Arabī.

⁸⁷ Kamāl al-Bāzjī (1966). *Ma'ālim al-Fikr al-'Arabī fī al-'Aṣr al-Wasīl*, p. 340.

⁸⁸ Ibid, p. 341.

⁸⁹ Hitti, Philip Khuri (1948). *The Arabs: A Short History*. London: MacMillan, p. 159, 177.

University of Cordoba, Seville, Malaga and Granada. In these universities in Spain, European students were taught to learn and study.⁹⁰

While it is true that Muslims drew from many of the sciences of the Byzantines, the Copts, the Indians, and the Persians, when they translated these sciences into the Arabic language, reflected upon, analyzed, and scrutinized them, and added new scientific experiments, they made these sciences their own. They translated works into the Arabic language of Hindi and what is now known as Arabic numerals, including decimal fractions, and it is necessary to recognize their role in the development of algebra. The Europeans owe the Arabs what they have achieved in the mathematical sciences as a result.⁹¹

The most prominent role of Arabs in the formation of European thought is science in its various branches: medicine, nature, chemistry, astronomy, mathematics, natural history, and agriculture. In mathematics, the Arabs deserve the greatest credit because they were the ones who introduced the decimal system; the Greeks used numbers from 1 to 999, then used the comma, and the center point only later.⁹² The European students, in their studies of algebra, relied heavily on an Arabic book translated into Latin. This book was written in the era of al-Ma'mūn after the experiments of Muḥammad ibn Mūsā al-Khawārizmī (d. 232/846).⁹³ The Arabs were not only translators or moderators of the sciences; Arab astronomers invented the astrolabe to measure altitude and were able to know when the stars appeared, and the hours of the solar eclipse and the lunar eclipse.⁹⁴

⁹⁰ Sharif, M. M. (1966). *Dirāsāt fī al-Ḥaḍārah al-Islamiyya, al-Fikr al-Islāmī wa Mutāba'at Āthārahu*, tr. Aḥmad Shalabī. Cairo: Maktabat al-Nahḍah, vol. 1: 49-50.

⁹¹ Ibid, vol. 3: 232.

⁹² 'Abd al-Raḥmān Badawī (1965). *Dawr al-'Arab fī Takwīn al-Fikr al-'Urūbī*. Beirut: Dār al-Adab, p. 21; Rushdi Rashid "al-Thlīl al-Tawāfuqī, al-Thlīl al-'Adadī, al-Thlīl al-Diofantasī, wa Nazariyat al-'Adād," in Rushdī Rāshid. *Mawsū'at Tārīkh al-'Ulūm al-'Arabiyyai*. Beirut: Markaz Dirāsāt al-Wiḥda al-'Arabiyya, vol. II: 491-538.

⁹³ Karam Ḥilmī Farḥāt Aḥmad (2004). *Al-Turāth al-'Ilmī lil-Ḥaḍārah al-Islamiyya fī al-Shām wal-Iraq khilāl al-Qirn al-Rābi' al-Hijrī*, pp. 642-643.

⁹⁴ Sharif, M. M. (1966). *Dirāsāt fī al-Ḥaḍārah al-Islamiyya, al-Fikr al-Islāmī wa Mutāba'at Āthārahu*, vol. 3: 232.

Arab doctors did outstanding research and made several very important discoveries, including scabies, for which Ibn Zuhar (d. 590/1194) discovered the parasitic germ.⁹⁵ The Arabs established diagnostic tests based on pulse and urine.⁹⁶ And they made great efforts in discovering what they called the causes and signs (i.e. the causes and symptoms) of diseases, as well as the study of food systems and pharmacopeia/the botany of deciduous trees, using the research of botanists. They also are credited with creating and organizing public hospitals where patients were treated free of charge at the expense of the state, and some cities established a senior doctor.⁹⁷

Arab medicine moved early to Europe, establishing medical schools, all of which used Arabic books translated into Latin mainly for teaching medicine. The Arabic doctor whose name was most prominent is Muḥammad ibn Zakariyā al-Rāzī (Rhazes [236-311/850–923]), among the most famous Arab physicians.⁹⁸ He was at the forefront of medical research and produced over 200 medical and philosophical works.⁹⁹ His book *al-Ḥāwī fī al-Ṭibb* (*The*

⁹⁵ Ibn Abī Uṣaybi‘a, Aḥmad ibn Qāsim (d. 668/1270). ‘*Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibā’*’, p. 162; Honke, Zagrid (1981). *Allahs sonne uber dem abendland unser Arabisches erbe*, pp. 270-282; Azar, Henry A. (1988). Ibn Zuhar (Avensoar) “Supreme in the Science of Medicine since Galen”: The Translation of his Work into Latin and His Image in Medieval Europe, Ph.D. Dissertation, University of North Carolina at Chapel Hill, 1998, Ann Arbor: UMI; Idem (2008). *The Sage of Seville: Ibn Zuhar, his time, and his medical legacy*. Cairo: The American University of Cairo Press.

⁹⁶ Smith, Emily Savage (2005). “al-Ṭib,” in Rushdī Rāshid. *Mawsū‘at Tārīkh al-‘Ulūm al-‘Arabiyyai*. Beirut: Markaz Dirāsāt al-Wiḥda al-‘Arabiyya vol. III: 1151-1224.

⁹⁷ Ibid, vol. III: 1189-1200; Bsoul, Labeed Ahmed. “An Arab-Muslim Scientific Heritage: Islamic Medicine.” *Journal of Humanities and Social Science (IOSR-JHSS)*. Volume 21, Issue 10, Ver. 8 (October 2016), pp. 29-46.

⁹⁸ Abū Bakr Muḥammad ibn Zakariyā al-Rāzī served as president of the Bimarstan Baghdad al-Mu‘taḍadī. He wrote approximately 200 medical books on various diseases and in all branches of medicine known at that time. All of them were translated into Latin and remained key medical references until the seventeenth century. His greatest books were *History of Medicine* and “Mansouri” in Medicine and a book which includes precise descriptions of the anatomy of the body. He invented the surgical suture and contributed to making ointments and the progress of pharmacology. Ibn al-Nadīm’s *Fihrist*, al-Qafṭī’s *Akhbār al-‘Ulamā’ bi- Akhbār al-Ḥukamā’*, and Ibn ‘Uṣbā ‘ā’s *Tabāqāt al-Aṭibā’* mention al-Rāzī. He wrote 200 books, ranging from large encyclopedias to vignettes on medicine, philosophy, chemistry, and other disciplines. We should make it clear here that much is unknown about manuscripts affecting both *al-Ḥāwī fī al-Ṭibb* and *al-Jāmi‘ al-Kabīr*. Historians agree that al-Rāzī was a virtuous and well-read physician and surgeon, as well as a link between science and practice. He had courage, refuted those Greek masters of medicine whose views did not agree with clinical practice, and reflected upon his view through his works in theory and practice. This was seen as a greater share of his contribution to the field of medicine since then. See Ibn al-Nadīm (2010). *al-Fihrist*, pp. 469-473; Jamāl al-Dīn Abū al-Ḥassan ‘Alī ibn Yūsuf al-Qafṭī (2008). *Tārīkh al-‘Ulamā’*, ed. Yulus Libert. Cairo: Maktabat al-Ādāb, p. 271; Ibn Abī Uṣaybi‘ah, ‘*Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibā’*’, pp. 414-427.

⁹⁹ Ibn al-Nadīm (2010). *al-Fihrist*, pp. 470-472; Jamāl al-Dīn Abū al-Ḥassan ‘Alī ibn Yūsuf al-Qafṭī, (2008). *Tārīkh al-‘Ulamā’*, ed. Yulus Libert. Cairo: Maktabat al-Ādāb, p. 271; Ibn Abī Uṣaybi‘ah, Muwafaq al-Dīn Abū al-‘Abbās ibn Sadīd al-Dīn al-Qāsim (d. 668), ‘*Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibā’*’, pp. 414-427; Ibn Jaljal, 1985. *Ṭabaqāt al-Aṭibā’ wa-l Ḥukamā’*, ed. Fu’ād Sayyid. Beirut: Mu’assasat al-Risālah, pp.77-80.

Comprehensive in Medicine)¹⁰⁰ is a major medical encyclopedia of knowledge and has been translated into Latin with the title, “Liber Dictus Elhavi.” It contains new views on the method of cupping of nerves and muscles of the throat area.¹⁰¹

Arab art also had an impact on the Latin renaissance. In music, many of the books written by Arabs were translated into Latin, most notably al-Farābī's book in the *Ktiābfī Tārīkh al-Mūsīqā*/history of music. In literature, we find the improvisation of Andalusia and its influence on poetry, and the story of Ibn Tufayl in *Kalilah wa Dimnah* in the Lafontaine, and in the divine comedy, Luna from the modern Mirage and the message of forgiveness. Arab architecture offers the art of decoration and ornamentation/arabesque, and engraving and pigmentation, all of which have prominent effects in Latin industries. In spite of some claims, the assumptions of the Latin Renaissance have detracted from the Arabs, whereas in fact Arabs were at the forefront of many of these exhibitions and statements, including scientific expressions and industrial terms and names of Arab instruments and goods, and the landmark of places and men, and what they quoted from the manifestations of pure Eastern architecture.¹⁰²

Stories, novels, and literary stories that flourished in Western Europe during the thirteenth century were undoubtedly influenced by previous Arabic books, whether Indian or Persian. Also, the Arabs have swept the West with new ideas and extensive information in Astrophysics and Mathematics.¹⁰³ In Spain, the popularity of astrophysics was high. Most of the books on Islamic astronomy in Spain were translated into Latin, and the Arabs' studies of

¹⁰⁰ Ibn al-Nadīm (2010). *al-Fihrist*, pp. 469-471.

¹⁰¹ Jacquart, Danielle (1996). “The Influence of Arabic Medicine in the Medieval West”, in *Encyclopedia of Arabic Science*, edited by Roshdi Rashed. London: Routledge, Vol. 3: 963-984.

¹⁰² Kamāl al-Bāzjī (1966). *Ma'ālim al-Fikr al-'Arabī ff al-'Aṣr al-Wasīṭ*, p. 337.

¹⁰³ Kennedy, Edward S. “Mathmaticla Geography”, in Roshdi Rashid (2006). *Encyclopedia of the History of Arabic Science*. New York: Routledge; Idem, “al-Gughrāfyā al-Riyādiyya”, in Rushdī Rāshid (2005). *Mawsū'at Tārīkh al-'Ulūm al-'Arabiyya*. Beirut: Markaz Dirāsāt al-Wiḥda al-'Arabiyya, vol. I: 267-292.

stars gave us the foundations of spherical and tropical trigonometry. It is the Arabs who allowed trigonometry to progress as they did with algebra and analytical geometry.¹⁰⁴

There are two important facts in regards to the translation movements by Arabs and Muslim scholars. First, Muslims were not only translators, but they were also innovators and creative with these materials, which they transferred from foreign languages; they interpreted and added their own explanations and examination to what they found were lacking, myth, or theoretical, which then became subject to the inductive approach and scientific experiments. Their attributions to older and classical foreign works in their comments added a great value to what was reached in the era of the Western renaissance. Second, Muslims played a major role in the service of world culture, as they saved these sciences from loss, having received these books in the dark ages and giving them life. Through their institutes, universities, and research, these studies reached Europe, translated from Arabic into Latin, mainly for the culture of modern Europe, and this is one of the most important reasons that led to the European Renaissance.

Originality is a common denominator among all civilizations.¹⁰⁵ The Arabs carried a torch of human thought for six centuries, during which Europe was engulfed in the darkness of ignorance. They began to love Greek thought, and then treated it with explanation and commentary. As they matured in knowledge, they were in the process of creating and developing, resuming the science of Greece as far as they were concerned. They worked with new subjects, tested their facts, laid down their foundations, devised bases for them, extracted their deficiencies, and created terminology and expressions. Then they made this intellectual

¹⁰⁴ See Alar, Andrea, “*Ta’thīr al-Riyāḍiyyāt al-‘Arabiyya fī al-Gharb fī al-Qurūn al-Wiṣṭā*”, in Rushdī Rāshid (2005). *Mawsū‘at Tārīkh al-‘Ulūm al-‘Arabiyyai*. Beirut: Markaz Dirāsāt al-Wiḥda al-‘Arabiyya vol. II: 669-736; Jalāl Maḍhar (1969). *Al-Ḥaḍārah al-Islamiyya Asās al-Taḳadum al-‘Ilmī al-Ḥaḍīth*, pp. 355-356; ‘Abd al-Ḥalīm, Muntaṣir (1981). *Tārīkh al-‘Ilm wa Dawr al-‘Ulamā’ al-‘Arab fī Taḳadumuhu* Cairo: Dār al-Ma‘ārif, p. 65.

¹⁰⁵ Aqād, ‘Abbās Maḥmūd (2002). *Athar al-‘Arab fī al-Ḥaḍārah al-Urūbiyyah*, p. 28.

heritage available for the young people who were interested in the advancement of the Latin people.¹⁰⁶

The important aspect of the impact of these cultural encyclopedias in Europe does not depend on the amount of information reached and how much information was taken by the Arabs or taken by the Europeans, but it is important to remember that the Europeans took the torch of science from the hands of the Arabs after that they learned from this great light, which revealed the latest science. If the Arabs had not carried that torch east and west, it would have been difficult for the Europeans to offer a revolution again.¹⁰⁷

The Arabs in the formation of scientific knowledge in Europe were walking side by side with their influence in the formation of theoretical science. It was the Arabs who made soap for the first time. They made sugar from reeds. Paper/*al-kāghid* was discovered by the Chinese, but it came to the West and was known to Europe only through the Arabs.¹⁰⁸ The paper industry began with flax in China and then moved to Samarkand in the second/eighth century after the Muslims conquered it in 94/713. The Muslim leader of Samarkand, Qutaybā ibn Muslim, took advantage of the Chinese prisoners in the development of the manufacture of paper and work on purification of impurities so that Samarkand, after a short period, became one of the most important centers of the paper/*al-kāghid* industry and spread the industry to the cities of Islamic countries, such as Baghdad. The paper/*al-kāghid* industry spread in Samarkandi and turned to Egypt and others to produce an alternative to the papyrus. Muslims made improvements to the Chinese paper/*al-kāghid*, purging it of the impurities that the Chinese used to put on mulberry leaves. The paper/*al-kāghid* spread in this new way in the country Transoxiana and then moved to Iraq, Syria, Egypt, North Africa, Andalusia, and the

¹⁰⁶ Kamāl al-Bāzjī (1966). *Ma'ālim al-Fikir al-'Arabī fī al-'Aṣr al-Waṣīl*, p. 337.

¹⁰⁷ Aqād, 'Abbās Maḥmūd (2002). *Athar al-'Arab fī al-Ḥaḍārah al-Urūbiyyah*, p. 28.

¹⁰⁸ Abd al-Raḥmān Badawī (1965). *Dawr al-'Arab fī Takwīn al-Fikir al-'Urūbī*, p. 37.

east and west. However, Samarkand retained its first position in its production. *Al-Kāghid* remained linked to the city of Samarkand as the papyrus was associated with Egypt.¹⁰⁹

The paper industry was spread by Muslims worldwide. Without this industry, science would not have progressed, the codification movement would not have been active, and Europe would not have existed as it did from the middle of the eighth century to the fourteenth century. Paper mills emerged in Baghdad during the reign of Rashīd, moved to Damascus, Tripoli, Palestine, and Egypt, and then to Morocco, Sicily, and Andalusia until the West knew about this industry, which has continued to become one of the pillars of culture and spiritual life.¹¹⁰

Science brought the Greek elements to the Eastern elements and created a new compound or made the creation of this compound possible in the future. The Greek science could have been passed on by Latin Europe if Catholic Christianity had not been completely separated from Orthodox Christianity by a wall of fanaticism, mistrust, and hatred. Since this wall unfortunately existed, it was not possible to connect the former Greek science to the Latin future except through Arab science. From the point of view of human development in general, Arab-Islamic culture was of great importance, because it constituted the basic link between the Near East and the West, then between the Middle East and Asia, Buddhism. The cultural contacts between Christian Europe and the Arab-Islamic world remained limited and weak

¹⁰⁹ Lyons, Jonathan (2012). *Islam through Western Eyes: From the Crusades to the War on Terrorism*. Columbia University Press; Nasr, Seyyed Hossein. *Science and Civilization in Islam*, second edition. Cambridge: Harvard University Press, 1987; Nazif, Hasan (2008). *al-Hasan ibn al-Haytham: Buhuthuhu wa Kushfuhu al-Basariyya [al-Hasan ibn al-Haytham: His Research and his Optical Discoveries]*. Beirut: Markaz Dirasat al-Wihda al-'Arabiyyal; Sarton, George (1988). *Introduction to the History of Science*, with recollections and reflections by Robert K. Merton, New Brunswick; Qāssim al-Samarā'ī (2001). *'Ilm al-Iktināh al-'Arabī al-Islamī* Arab Islamic Paleography and Codicology. Riyadh: Markaz al-malik Fayṣal lil-Buūth wal-Dirāsāt, pp. 217-290; Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd-4th/8th-10th centuries)*, p. 13.

¹¹⁰ Jalāl Maḍhar (1969). *Al-Ḥaḍārah al-Islamiyya Asās al-Taḡadum al-'Ilmī al-Ḥaḍīth*, 231-232; Qadrī Ḥāfiẓ Tūqān (1960). *Maqām al-'Aqil 'and al-'Arab* Cairo: Dār al-Ma'ārif, pp. 217-223; Muṣṭafā Maḥmūd Sulaimān (2008). *Tārīkh al-'Ulūm wa al-Tiḥnūlūjiyyāi*. Cairo: al-Hay'a al-Maṣriya lil-Kitāb, pp. 503-508; 'Abd al-'Alīm Khaḍir (1995). *al-Muslimūn wa Kitābat al-Tārīkh: Dirāsah fī al-Ta'ṣīl al-Islamī li-'ilm al-Tārīkh*. Herndon: al-Ma'had al-'Ālamī lil-Fikr al-Islāmī, pp. 174-186.

until the eleventh century. But these contacts became stronger and clearer since the late century when Arab science began to move into Western Europe.¹¹¹

Europe remained in this ignorance and chaos until the sun of Islamic science fell and its beam reached Europe from the centers of Arab culture spreading in Andalusia, especially Toledo and southern Italy, bounded by Sicily, and then from the Levant, where Westerners mixed with the Orientals because of the pilgrimage to Jerusalem.¹¹² Sicily was part of the Islamic world for nearly nine centuries, and its success and prosperity stood side by side with life in Andalusia and was one of the most important way in which the Islamic civilization reached Europe. Arabian arts and sciences flourished in the African country of Constantine, which was transferred to Sicily. The books of Muslims in wisdom, medicine, and science were founded on the island of Sicily, which was the center of Islamic medicine in Europe, such as shown by the traveler al-Sharīf al-Idrīsī.¹¹³

Al-Sharīf al-Idrīsī, Abū ‘Abdullah Aḥmad ibn Muḥammad (d. 560/1165), was a Muslim scholar and a top geographer in history and one of the founders of the science of geography. He also wrote literature and poetry and of plants, and studied philosophy, medicine, and stars in Cordoba. His illustrations and maps were used throughout the European Renaissance. He sought to identify the patterns of rivers, lakes, and highlands, including information on major cities as well as state borders. Attributed to him is the epithet of the Arabs's Turbulon (referring to the great Greek geographer Turbulon). He was one of the most prominent students in mathematics; he invented geometry before ancient Archimedes. He toured the country and visited the Hijaz and Egypt, reaching the coasts of France and England,

¹¹¹ Sa‘īd ‘Abd al-Fatāḥ ‘Āshūr (1975). *Ūrūbā fī al-‘Uṣūr al-Eisṭā*, Cairo: Maktab al-Anjlū, vol. 1: 413-415.

¹¹² Honke, Zagrid (1981). *Allahs sonne uber dem abendland unser Arabisches erbe*, translated into Arabic by Fārūq Bayḍūn and Kamāl Dasūqī, *Shams al-‘Arab Tasṭa’ ‘alā al-Gharb: Athar al-Ḥad’ārah al-‘Arabiyyah fī Ūrūbā*. Beirut: Dār al-Afāq, pp. 45-47.

¹¹³ ‘Azz al-Dīn Farrāj (1978). *Faḍl ‘Ulamā’ al-Muslimīn ‘alā al-Ḥad’ārah al-Urūbiyya*. Cairo: Dār al-Fikr al-‘Arabī, pp. 162-163.

and he traveled to Constantinople and the shores of Asia Minor. He lived for a while in Sicily and stayed there as a guest of the Norman King Roger II. He was keen to gain knowledge. Al-Sharīf al-Idrīsī explained to Roger II the position of the Earth in space using the egg to represent the Earth; he likened the earth to the white-coated egg, just as the earth in the sky was surrounded by galaxies.¹¹⁴ In Sicily, in 550/1155, he wrote his famous book entitled *Nuzhat al-Mushtāq fī Ikhtirāq al-ʿĀfāq*.¹¹⁵ It included regional and comprehensive geography of the Islamic world and Europe, and contained seventy maps. One of his most famous effects of his maps is his circular map of the world engraved on a pure silver circle. This idea came from King Roger II, who boasted of it as a result of his sponsorship of science and knowledge, and put it in his palace before the delegations. It weighed 400 lbs., more than 200 kg. Al-Sharīf al-Idrīsī created a map of the earth between latitudes 63 north and 16 south, an achievement that came to emphasize the spherical earth that al-Sharīf al-Idrīsī imagined.¹¹⁶

The influence of the Arabs in the West was great, until Europe became the city of Arabs with its civilization. We cannot realize the influence of the Arabs in Europe, but can imagine its situation before it was invaded by the Arab civilization in the Abbasid era. In particular, the scientific movement and the translation movement into Arabic helped to develop a great renaissance, while the spread of the language east and west led to the ease of intellectual communication and the spread of Islamic civilization. We find that the greatest scientific and philosophical activity witnessed by the whole world in the first half of the Middle Ages was in the Arab Islamic countries.¹¹⁷

¹¹⁴ Stewart, Edward Kennedy. "al-Gughrāfiyā al-Riyāḍiyya", in Rushdī Rāshid (2005). *Mawsūʿat Tārīkh al-ʿUlūm al-ʿArabiyya*. Beirut: Markaz Dirāsāt al-Wiḥda al-ʿArabiyya, vol. 1: 286-289.

¹¹⁵ al-Sharīf al-Idrīsī, Abū ʿAbdullāh Aḥmad ibn Muḥammad (d. 560/1165). *Nuzhat al-Mushtāq fī Ikhtirāq al-ʿĀfāq*. Cairo: Maktabat al-Thaqāfah al-Dīniyya, 1980.

¹¹⁶ Stewart, Edward Kennedy. "al-Gughrāfiyā al-Riyāḍiyya", in Rushdī Rāshid (2005). *Mawsūʿat Tārīkh al-ʿUlūm al-ʿArabiyya*. Beirut: Markaz Dirāsāt al-Wiḥda al-ʿArabiyya, vol. 1: 286-289; ʿUmar Farūkh (1984). *Tārīkh al-ʿUlūm ʿand al-ʿArab*, p. 208.

¹¹⁷ Saʿīd ʿAbd al-Fatāḥ ʿĀshūr (1975). *Ūrūbā fī al-ʿUṣūr al-Eiṣṭā*, vol. 1: 149.

Conclusion

Although we live in the twenty-first century era of modernity with the Internet and globalization and with more understanding of knowledge and ignorance, the contradictions of life and its complexity, the fragmentation of the Arab personality and its intellectual references and cultural origins and other ideologies, and our memory of reports of knowledge in the Arab world in the past years, culture and manifestations are the only things that brings us together. If the policy has separated us, let us unite the culture, and then we recognize that translation still has a major role in the transfer of knowledge, culture, ideas, and circulation between nations and peoples. Without a doubt, translation has become a means of globalization, the transfer of knowledge, the dialogue of civilization, and the continuation of different cultures. However, duty and logic oblige us to be fully aware of this issue so that we are not fooled. We need to realize reason and logic and eliminate globalization, and guide it in proportion to our identity and our faith that has become threatened. All nations and peoples enjoy their own identity. We enjoy an Arab and Islamic identity that must be preserved. We are a nation proud of its ancient past, its championships and glories. We are also aware of the contention of the physical and cognitive space in various forms and types of cultures. There are those who seek the abuse of globalization and the media for special and politicized purposes that serve their policies and aspirations. Globalization has become a manifestation of “soft powers”, “creative chaos”, “hidden conflicts”, cultural conspiracies, brainwashing, and directing. Some voices in the West themselves have warned of globalization and its dangers, and all these reasons oblige us to be conscious and involved in this vast space. Globalization is not just a recipient; intellectualization and translation are a manifestation of it, and it has never been unilaterally.

Translation as a cultural act reflects the awareness of elites that lead this act to its importance in the development of society and to push forward. The cultural and cognitive

diversity in the translated books necessarily lead to the recognition of the other and shorten their experience in a short period of time, and thus remove all that is unrealistic about the other and the formation of an almost realistic understanding far from the stereotype of this other.¹¹⁸

The translation in Islamic civilization expressed contact with the other, whether this was the heritage of the previous nations or the nations that were under the control of the Islamic state or the competing nations of the Islamic state. The translation movement manifested in the most beautiful images in the 'Abbasid period. This was followed by the first caliphs of the successors of the 'Abbasid and the men of the state, and then the other elites of the society began to become a social movement that lasted for nearly two centuries.¹¹⁹

The Islamic civilization is unique in the exploitation of translation and the activation of its role on a large scale to create *al-muthāqafah*/exchange of cultures and circulate ideas or principles taught by an authority of the culture between itself and the previous civilizations such as Indian, Persian, Greek, and Chinese civilizations, and reached the high levels of friction and fruitful interaction that enriched the intellectual and scientific process of humanity, and pushed giant steps forward.¹²⁰

¹¹⁸ Ibn 'Issā Ḥanafī (1980). "Min Ajil Khiṭā 'Arabiyya fī al-Tarjamah," *Majalat al-Thaqāfah*, issue 55, no. 10, January-February, pp. 86-88.

¹¹⁹ al-Mas'ūdī, Abū al-Ḥassan 'Alī ibn al-Ḥusayn (d. 346/957). *Murūj al-Dhahab wa Ma'ādin al-Jawhar*, vol. 4: 521-522; Gutas, Dimitri (1998). *Greek Thought, Arabic Culture: The Greco-Arabic Translation Movement in Baghdad and Early Abbasid Society*, pp. 128-129.

¹²⁰ See Growther, J. G. (1969). *A History of Science*. London: Methuen Educational; *Qīṣat al-'Ilm*, translated into Arabic by Badawī 'Abd al-Fatāḥ and Yumnā Ṭarīf al-Khūli, Cairo: al-Majlis al-A'lā lil-Thaqāfah, 1998, p. 57.