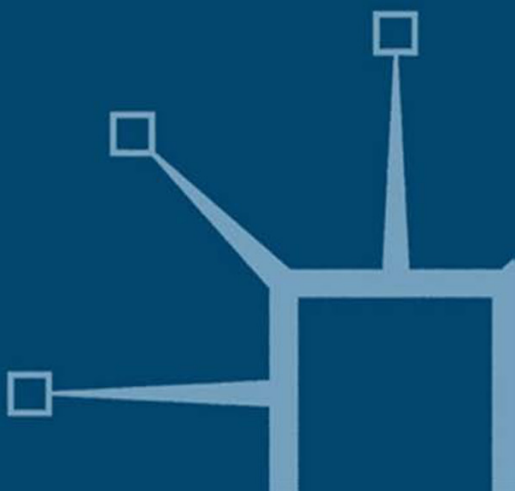


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The Role of the Arab-Islamic World in the Rise of the West

Implications for Contemporary
Trans-Cultural Relations

Nayef R. F. Al-Rodhan



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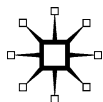
Implications for Contemporary Trans-Cultural Relations

Edited by

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1

Introduction: A Thousand Years of Amnesia

Nayef R. F. Al-Rodhan

Islam in Europe is often considered a relatively recent phenomenon. Political discourse in many European countries presents Islam as a foreign presence in Europe that is incompatible with societal values and a threat to people's way of life. Yet, far from being incompatible, the West and the Muslim world have a shared heritage that represents something positive upon which to build. The presence of Islam in Europe has far more profound roots than is commonly imagined, not simply because the Arab-Islamic Empire at one time included Spain, southern Italy, Sicily and the Balkans, but also due to the transmission of knowledge and techniques to non-Muslim areas of Europe from the Arab-Islamic Empire. While early Arab and Berber invaders did not initially belong to an obviously higher culture, they were not organized on a tribal basis and their capacity to embrace the contributions and advances in knowledge of Ancient Greece, China and India meant that the impact of the Arab-Islamic Empire on Europe had a very special character, and an important part to play in the rise of Europe.¹ While the Islamic geo-cultural domain comprised a number of ethnic and religious communities, I employ the term Arab-Islamic Empire, because Arab culture provided the cultural framework of the Empire and Arabic the backbone of intellectual endeavour, and Arabs also provided for the most of the political leadership during the golden age of the Empire.

The transmission of knowledge, techniques and institutions to Europe was particularly important during the medieval period. While trade had collapsed and non-religious learning and scientific inquiry had been stifled in Christian Europe during the so-called Dark Ages, the Arab-Islamic Empire flourished. While Europe was plunged into 'darkness' following the collapse of the Roman Empire, this was not the

case in the Arab-Islamic world. Trade between the Arab-Islamic Empire and the East continued following the fall of the Roman Empire, and scientific and philosophical inquiry thrived, particularly in the ninth and tenth centuries. In Baghdad a centre for rationalist learning was created by the Abbasid caliph, Al-Mamun (786–833) in ninth century, based on the earlier Persian Academy of Gundeshapur. Emissaries were dispatched to find seminal texts in a variety of areas of learning, including mathematics, astronomy, science and philosophy. The best translators and scholars were brought to what became known as the ‘House of Wisdom’ or *bayt al hikma*. Among the many scholars assembled at the university was Mohamed Al-Khwarizmi (c.780–850), the father of algebra and the algorithm. In the eleventh century, the House of Knowledge in Cairo attracted the brilliant minds of the age, including Ibn Al-Haytham (965–1039), who developed theories of optics that laid the foundation for our understanding of human vision. Intellectual pursuits and discoveries were also taking place in the far west of the Empire where Muslim Spain (Al-Andalus) was home to numerous centres of learning² in Cordoba, Toledo, Seville and Granada. The Arab-Islamic Empire possessed translations of Aristotle, the neo-Platonic commentators, some of Plato’s works, a large part of Galen’s body of work, as well as other Greek scientific works.³

Reflecting the tremendous intellectual achievements occurring at the time in the Arab-Islamic Empire, Arabic became the lingua franca in Medieval Europe, as Latin would later become during the Renaissance. Hungry for knowledge, European scholars sought to familiarize themselves with Ancient Greek texts that were translated and commented on, as well as the cutting edge studies of Muslim scholars. Among these works were the texts of Aristotle, Al-Razi (Rhazes), Al-Kindi, Euclid, Archimedes, Al-Haytham, Galen, Appollionios, Hypsicles, Theodosios, Menalaos, Ptolemy, Al-Khwarizmi, Al-Farghani, Al-Naiziri, Thabit Ibn Qurra, Ibn Sina (Avicenna) and Abul-Qasim⁴ and Ibn Rushd (Averroes), among others. Al-Khwarizmi’s work would only be translated for Europeans 300 years after it was undertaken.⁵ Muslim Spain, known as the ‘ornament of the world’ at one time, Sicily and southern Italy were key points for the transmission of knowledge and practices to Europe from the Arab-Islamic world, partly as a result of scholars, translators, pilgrims and traders travelling between Europe and the Arab-Islamic Empire and partly because of the fall of Al-Andalus to Catholic Spain and of Sicily to the Normans. When Toledo fell to Catholic Spain in 1085, one of the most significant translations of scientific work was undertaken.⁶ With the fall of other major centres

of learning, such as Cordoba, Seville and Granada, in 1236, 1248 and 1492 respectively, transfers of knowledge and institutions took place. In Sicily, which fell to the Normans between 965 and 1061, exchanges between Arab and Norman culture would continue to take place over several centuries, with Islamic legal concepts, it is believed, making their way further west, as far as England.⁷ Indeed, other institutions of governance may also have been transmitted to Europe via the island of Sicily.

The myriad forms in which the Arab-Islamic world influenced Europe's development has been documented by a number of scholars.⁸ However, to the great detriment to history and to contemporary relations between the West and the Muslim world, such positive encounters are little known in the West today and are no longer part of the collective memory of Westerners. Why this is so is a complex and fascinating question. It has much to do with the construction of an identity, first of Latin Christendom and then of Europe, that coincided with that continent's rise and eventual triumph. This process involved a juxtaposition of a positive Self identity for the West against a negative Other, with the Arab-Islamic world falling into the latter category along with the East in general. Despite the great attraction of the cultural riches of Arab-Islamic lands, Latin Christendom was being constructed against Islam. Later, during the Renaissance, emphasis was placed on Greek rather than Arab heritage.⁹ As Europe became more powerful, eventually becoming dominant, this polarization continued, but in a slightly different way. Orientalism, as Edward Said called it, assumed the inherent superiority of the West in relation to the East.¹⁰ In relation to Europe, Eurocentrism – the tendency to view the world from the viewpoint of European dominance and an implied assumption of European uniqueness and superiority – infused Europe's account of its own historical development and place in world history. In these accounts, the role of the Arab-Islamic world in the rise of the West is obscured. The aim of this book is to recapture some of this history of cultural borrowing and exchange and, it is hoped that by so doing, it may contribute in a small way to a better understanding of relations between the West and the Arab-Islamic world. Acknowledging the West's debt to the Arab-Islamic world is vital in an era of increased global interconnectedness and pluri-cultural societies, when relations between the West and the Muslim world can often be characterized by an interplay of negative images of the Other. However, let us begin by briefly surveying how dominant accounts of the rise of the West tend to depict its historical trajectory.

The rise of the West – the dominant narrative

Modern Europe is often conceived as an exceptional case in terms of its development, moving along a linear, progressive path from Antiquity through feudalism, followed by the Renaissance and capitalism.¹¹ The revival of its Ancient Greek heritage following the Dark Ages is believed to have paved the way for the Renaissance, from which the Scientific Revolution and the Enlightenment are thought to have emerged. Similarly, the rise of capitalism and the expansion of the European world system are often thought to have taken place as a result of uniquely European attributes and it is often viewed as a transitional phase within a linear, progressive path towards modernity, containing within it the seeds of first mercantile and later industrial capitalism.¹² Max Weber's characterization of the West assumed that its superiority vis-à-vis other civilizations was its rationalism.¹³ Indeed, the uniqueness of the European state was believed to lie in its distinctly rational nature. This, in turn, is thought to have laid dependable legal foundations upon which commercial affairs could be based. The type of capitalism that emerged in the West was thought to have been possible only in Christian lands,¹⁴ the Protestant work ethic being viewed as particularly significant for its emergence.¹⁵ For Karl Marx, the classical and feudal periods were necessary precursors of capitalism in the West. Asia was seen as the exception to the rule.¹⁶ Marx, at least in his early writings, viewed the East as backward and stagnant due to oriental despotism that was believed to have stifled the emergence of private ownership. Capitalist relations in the East could, in his view, only materialize as a result of Western influence.¹⁷ Indeed, the rest of the world was thought to have remained despotic and stagnant until incursions were made by the West.¹⁸ Within this distinctly Eurocentric historiography, a dynamic West is frequently juxtaposed with a static East, with the achievements of non-Europeans assessed from the viewpoint of European dominance and its presumed uniqueness. Weber too approached non-European civilizations in terms of their perceived lack of Western attributes, in this case rationalism.¹⁹ The dice were, therefore, loaded against them from the outset. Non-European civilizations have tended to be ascribed less positive roles in world history, which itself becomes identical with Western history, with the characteristics attributed to the West being frequently associated with positive human development and progress.²⁰

That said, philosophers of history, who have sought to compare Western civilization with that which went before have, at times,

adopted a more nuanced view. Oswald Spengler's *Decline of the West*, for example, proposed a cultural cyclical notion of history that differed from the traditional linear interpretation of Western history:²¹

Thanks to the sub-division of history into 'Ancient', 'Medieval' and 'Modern' – an incredibly jejune and *meaningless* scheme, which has, however, entirely dominated our historical thinking – we have failed to perceive the true position in the general history of higher mankind of the little part-world which has developed on West European soil from the time of the German-Roman Empire, to judge of its relative importance and above all to estimate its direction.... It is not only that the scheme circumscribes the area of history. What is worse, it rigs the stage. The Western European area is regarded as a fixed pole, a unique patch chosen on the surface of the sphere for no better reason it seems, than because we live on it – and great histories of millennial duration and mighty faraway Cultures are made to revolve around this pole in all modesty.²²

Nevertheless, Spengler does seem to assume that modernity is an essentially Western phenomenon, driven by a spirit of discovery and a Faustian desire to master nature.²³ Arnold Toynbee's liberal analysis of the rise and fall of civilizations did not, by contrast, try to paint a different picture of Western civilization. He sought to examine history in a way that did not place Europe and the rise of the West at the centre, his conceptualization of history being cyclical.²⁴

In answer to the specific question 'why Europe?' Fernand Braudel's examination of capitalism within a broader world history attributed Europe's success to the key characteristic of liberty, in the sense of privileges or rights that protected one group from the abuses of another. The development of towns is conceived as central to the growth of such liberties. Towns are believed to have fostered freedom, provided markets for rural artisans and given birth to finance capital. The growth of towns increased production and the revenue of peasants, allowing peasants greater freedom as land became more abundant. Material prosperity earned cities independence and private liberties. This situation is contrasted with despotism in the East. Yet, as Braudel notes, towns were not unique to the West. They were also crucial to the development of the Arab-Islamic Empire, where the combination of production and distribution, whatever form it took, also required finance. Indeed, he recognizes that trade and finance developed together in the Arab-Islamic Empire. While in Braudel's account, Europe appears

to have autonomously charted its course to industrialization, he does acknowledge the role that colonialism post-1492 played in the development of industrialism and the rise of Europe.²⁵

The importance of towns to Europe's revival after the Dark Ages, during which urban life and the money economy collapsed, is also emphasized by Carlo Cipolla in *Before the Industrial Revolution: European Society and Economy 1000–1700*.²⁶ After lengthy struggles with the nobility and bishops, towns became the domains of the business and professional classes. The socially prominent position that these classes achieved, is believed to be what distinguished European towns from those that existed elsewhere in the medieval period. Towns are conceived as critical to Europe's development, because they stimulated demand and greater equality. Indeed, the urban revolution is believed to have laid the foundations of the Industrial Revolution.²⁷ In the field of enterprise and credit, Cipolla cites the *contratto di commenda* as a critical innovation that enabled savings to be transformed into productive investment. The *commenda*, or *collegantia* as it was known in Venice, enabled merchants to finance the purchase of goods for sale on their voyages as well as the trips themselves.²⁸ Again, there is no mention that this technique originated in the Near East. In his view, these were, among a myriad other innovations and inventions, 'the original product of European experimental curiosity and imagination'.²⁹

David Landes has sought to understand the main 'stream' of economic development and modernization by asking the following questions: 'How and why did we get where we are? How did the rich countries get so rich? Why are poor countries so poor? Why did Europe (the West) take the lead in changing the world?'³⁰ These questions are posed by Landes, because '[a]s the historical record shows, for the last thousand years, Europe (the West) has been the prime mover of development and modernity'.³¹ Among the factors thought to affect a nation's destiny is climate (geography). Europe is believed to have been blessed with the most temperate climate. The Middle Ages are conceived as an intervening period connecting the ancient with the modern world. During this interregnum, a new society is believed to have emerged that set a course unique to this civilization. Greek democracy, albeit with its shortcomings, is contrasted with oriental despotism. The separation of the secular and the religious is also thought to have contributed to Europe's rise in that it enabled popular initiative and decentralized authority. Inventiveness is also a factor considered crucial for increases in productivity in Europe. 1492 is understood as a key factor in Europe's rise. In response to the question 'Why Europe?', Landes cites what he views as

specifically European sources of success: intellectual freedom, a common language of proof, the routinization of research and its spread.³²

In relation to the Scientific Revolution, Toby Huff has employed a comparative framework in *Intellectual Curiosity and the Scientific Revolution: A Global Perspective*³³ to examine the historical, deep structures of the developments that together formed the Scientific Revolution in order to understand the cultural and intellectual starting points that were in place in Europe as opposed to Mughal India, China and the Ottoman Empire. The specific window through which he seeks to do this is through the development of the telescope and its transmission around the world in the first two decades of the seventeenth century. He argues that in Europe the 'surplus of *human capital* was singular and did set the West on a unique developmental trajectory...the unique Western system of education and the abundant fruit spawned by the scientific revolution created a level of human capital unmatched anywhere in the world until the end of the twentieth century'.³⁴ In his view, modern science did not develop elsewhere in the world due to an absence of 'supportive social and cultural conditions'.³⁵ The scientific ethos of intellectual curiosity was, in Huff's view, simply unrivalled beyond Europe during this period. Indeed, that the telescope, when taken around the world, failed to trigger similar developments outside Europe was ultimately due to a deficit of scientific curiosity.³⁶ Moreover, while he acknowledges that there were earlier scientific discoveries, especially in the Middle East, that 'built on the Greek legacy of a still earlier age', little evidence is believed to exist to support the idea that scientific developments of China or Mughal India gave momentum to the European scientific revolution of the seventeenth century.³⁷

The dominant narrative of Europe's rise, therefore, depicts Europe as possessing unique characteristics, whether it be rationalism, liberty or intellectual curiosity. Moreover, within this overarching narrative, Europe is portrayed as having charted its course largely autonomously, owing very little to other geo-cultural domains. The Arab-Islamic Empire, which itself drew upon Chinese, Indian and Ancient Greek contributions to knowledge and practices, is often seen as little more than a 'holder' of Ancient Greek manuscripts. Its own contributions to the developmental trajectory of the West is rarely acknowledged.

Towards a more holistic approach to Europe's rise

Despite the entrenched nature of the dominant narrative of Europe's success, some scholars have argued that the rise of the West needs to

be rephrased and rethought to capture mutual influences between civilizations at every stage of history. In recent times, historians have attempted to understand European dominance and the rise of the West within the context of global history, calling into question European exceptionalism. André Gunder Frank, for example, adopts a materialist approach that emphasizes the global context rather than focusing on specific cultural and/or institutional features ascribed to the West. In *ReOrient*, Gunder Frank questions the notion that modern history is essentially European history. He challenges Eurocentric historiography by providing a different version of history between the fifteenth and eighteenth centuries. In Gunder Frank's view, Europe employed its American money to make gains from Asian trade, production and markets. By implication, Europe is considered as neither more important than other regions of the world nor at the centre of a developing global economic system. Neither capitalist relations in Europe nor European exceptionalism are believed to be the source of the modern economic and social system.³⁸

A similar approach is employed by Janet Abu-Lughold in *Before European Hegemony*. The world system as a whole is examined, of which Europe was but a peripheral economic system before it came to dominate. Between 1250 and 1350, the world system is thought to have reached a critical turning point when the Middle East linked the Mediterranean and the Indian Ocean, and East and West became more or less balanced. In fact, she argues that before this shift in global power occurred, Asian, Arab and Western forms of capitalism were very alike and, where differences did exist, it was the West that was the least advanced. Geographic, political and demographic factors are thought to be more important and determining in the rise of the West than any unique inventiveness or institutions. The demise of the Middle Eastern monopoly of the trade route to the East, caused by the opening up of the Atlantic sea routes is also believed to have played a significant role in the growth of European trade.³⁹ Thus, contingency is given greater explanatory power than specific forms of capitalism or cultural traits in Abu-Lughold's account.

The role of contingency has also been emphasized by a number of other scholars. In *The Colonizer's Model of the World: Geographical Diffusionism and Eurocentric History*, James Blaut claims that Europeans had no superiority over non-Europeans prior to 1492. Processes taking place in Europe pre-1492 were also taking place elsewhere. In this interpretation, it was Europe's colonial riches that propelled its advance after 1492.⁴⁰ As in other accounts, the discovery of the Americas is thought to

have played a critical role in the rise of the West. Kenneth Pommeranz has gone further in arguing that there is nothing to indicate that Europe held a comparative advantage in being able to amass capital stock before 1800. What altered the odds in Europe's favour is believed to have been innovations in Europe that enabled land saving, especially those linked to fossil fuels that did not rely on forests for energy. European advantages in transportation and technological sophistication need to be severely qualified. In his view, non-European societies retained advantages in technological sophistication in many areas up to the eighteenth century.⁴¹ Cultural agency in conjunction with contingency has also been highlighted by some scholars. Jack Goldstone, for example, claims that the rise of Europe was not due to any overarching superiority vis-à-vis other regions of the globe. In his view, the answer to the question 'Why Europe?' may be found in a combination of factors: discoveries that led to the questioning of ancient and religious texts; experimental science and mathematical analysis of the natural world; scientific method; an instrument-driven approach to experiment and observation; tolerance and pluralism; and close social relations between entrepreneurs, scientists, engineers and artisans.⁴²

Similar factors are also identified by H. Floris Cohen in *How Modern Science Came into the World: Four Civilizations, One 17th-Century Breakthrough*.⁴³ Cohen examines how modern science emerged and why this occurred in Europe rather than in Chinese or Islamic civilizations. Rather than conceiving of the Scientific Revolution of the seventeenth century as one event, Cohen identifies six distinct, but interconnected revolutionary transformations that together comprised what we tend to think of as the Scientific Revolution. With this interpretation of the Scientific Revolution, Cohen offers an explanation of why modern science came about in Europe and not in Greece, China or the Islamic world. Rather than a unidirectional sequencing, a number of episodes gave rise to a comparative approach, with modes of 'nature-knowledge' or approaches to natural phenomena forming the 'entities' compared. In Cohen's view, Greece offered a non-modern corpus of nature-knowledge, which ultimately experienced a decline. In contrast to the master narrative of the Scientific Revolution, Cohen argues that medieval nature-knowledge did not serve as a preparatory stage for modern science, but as an exceptional case in which the revival of a Greek corpus of knowledge ultimately remained blocked. Both Islamic civilization and Renaissance Europe were two other recipients of the Greek body of knowledge and are perceived by Cohen as similar enough to be compared.⁴⁴ Within the Ottoman Empire, reliance on established

modes of nature-knowledge impeded the uptake of new and innovative thinking that had emerged within European nature-knowledge structures. The latter is also believed to have been too incompatible with Ancient Chinese conceptual frameworks to be adopted in China.⁴⁵ In Renaissance Europe, by contrast, three simultaneous transformations are believed to have enabled modern science to come into the world. First, the Greek mathematical tradition was turned into a mathematization of nature, sustained by experimentation, by Galileo and Kepler. Second, the Aristotelian philosophy of nature was replaced by an atomist natural philosophy and a novel conception of movement provided by Galileo and Descartes. Third, practice-orientated inquiry and fact finding with regards to the natural world, consolidated by Galileo and Francis Bacon.⁴⁶ While a decline in nature-knowledge occurred in Europe halfway to the Scientific Revolution, royal confidence, Baconian optimism and religious sanctioning, out of which freedom of investigation could flourish, came together in the 1660s to give momentum to a revolutionary nature-knowledge, enabling modern science to stay in the world.⁴⁷

As mentioned at the outset, Eurocentric accounts of the triumph of the West have not only distorted our understanding of the West within global history, they have also tended to obfuscate the role of the Arab-Islamic world in the rise of the West. Several important recent contributions have sought to illuminate this little known dimension of history and to contribute to a more holistic conception of Europe's rise. In *The Eastern Origins of Western Civilisation*, John Hobson vigorously argues that the East played a crucial role in enabling the rise of modern Western civilization.⁴⁸ Eurocentric accounts of the rise of the West, he claims, neglect three points: the East pioneered its own rise after 500; the East actively created and maintained its own economy; and the East contributed to the rise of the West through the development and transmission of many 'resource portfolios' to Europe.⁴⁹ After 500, the East is believed to have established a global communications network through which its resource portfolios were diffused to, and assimilated by, the West. In addition to this process of 'diffusionism', Europeans appropriated Eastern economic resources following 1492.⁵⁰

The development and expansion of the Eastern economic system is thought to owe much to the Arab-Islamic Empire.⁵¹ This stands in contrast to the Eurocentric assumption that Islam was an inherently regressive religion that blocked the emergence of capitalism. Yet, religion and material life are not contradictory in Islam. The *shari'ah* ('sacred law') outlined provisions for contract law. Moreover, there were

signs of greater personal freedoms under Islam than in Europe, and public offices were also determined by 'egalitarian contractualism'.⁵² A number of innovations were crucial to the development of Muslim trade: the lateen sail and the astrolabe; breakthroughs in astronomy and mathematics, due in particular to the use of the zero as a result of Al-Khwarizmi's work; paper and textile manufacturing; iron and steel production. Energy was also harnessed through the use of windmills and watermills. Islam also had a comparative advantage over Europe in scientific knowledge and military technologies.⁵³ The revival and expansion of European trade was, in Hobson's account, due to its integration into an already developed trading system dominated by Eastern powers rather than to Italian pioneers. All the central innovations that lay behind the commercial revolution in Europe are believed to have derived from the East, the Middle East and China in particular. Key financial innovations, such as the *commenda*, as well as the bill of exchange, credit institutions, insurance and banking are often attributed to Italians, but they originated in the Islamic and pre-Islamic Middle East. Europe was not, therefore, the self-contained, regional economic system frequently depicted in Eurocentric accounts of the rise of the West after the year 1000.⁵⁴

The idea of Europe as an autonomous system that pioneered the development and expansion of its own commercial and financial success is problematized by Hobson,⁵⁵ who argues that the feudal revolution in Europe is likely to have taken place partly as a result of a global transmission of Eastern technologies that had laid the foundations for the feudal state and economy by the eighth century, notably the stirrup, which enabled the development of the shock cavalry. However, once the situation had settled around 1000, the feudal form of relationship between nobles and peasants had to be legitimized and this need became intertwined with the construction of European identity. There was no intrinsic homogeneity in Europe at that time. Europe, as such, did not exist. Given that there was no Self to speak of, the Self became defined by what it was not. The imaginary Other against which Europe was defined was Islam. Europe came to be known as Christendom because it was constructed as Catholic Christian against Islamic Middle East, celestial hierarchy being transposed onto feudal social hierarchy.⁵⁶

The assumption that the feudal period in Europe followed Antiquity as a transitional phase within a linear progressive trajectory toward modernity, giving Europe the unique path to modernity, itself intimately tied to the construction of European identity, is also re-examined by Jack Goody in *The Theft of History*, in which Goody claims that there

was nothing intrinsic in feudalism that led to mercantile capitalism and later industrial capitalism. Some form of feudal social relations are believed to have existed almost everywhere following the Bronze Age.⁵⁷ This challenges Eurocentric interpretations of history in which feudalism was associated with a degree of individual freedom, whereas irrigated agriculture in the East was believed to be linked to despotism, together forming the so-called Asiatic mode of production.⁵⁸

The notion that Europe experienced an autonomous rebirth after the intervening darkness of the Middle Ages is highly problematic in Goody's view. Knowledge of Greek had progressively declined in Europe, limiting direct access to ancient Greek texts until the Renaissance. In addition to these linguistic constraints, the growth of Christianity in post-Roman Europe placed greater emphasis on religious rather than non-religious learning. Christians in Europe, in fact, played a minor role in the preservation, let alone expansion, of classical knowledge. The role of Nestorian Christians in the East was far more significant in this respect. They translated some classical texts into Arabic. Indeed, the growth of knowledge during this period was taking place in the East.⁵⁹ In Goody's interpretation, the Renaissance was a response in some ways to the 'splendours of the Islamic East that had provided models of luxury and civilization, including deeper knowledge of classical texts. The return to those texts, whether they came through Spain or Constantinople, was at one level an appeal to the past in the face of the Ottoman Empire and Mongol societies that had penetrated Eastern Europe and that were being opposed by the Orthodox and Catholic churches, the churches of the East and West Roman empires, respectively.'⁶⁰ The classical revival and the Scientific Revolution owed much to the Arabs and Muslims in general. A great deal of scientific knowledge was transmitted to Europe from the Arab-Islamic Empire, as mentioned earlier. Indeed, the notion that Islam necessarily hindered scientific and rational learning is confounded by historical evidence.⁶¹

Contact with the Arab-Islamic world also helped to fuel the Renaissance in Europe through the transmission of intellectual knowledge. Toledo in Al-Andalus was a vibrant city where Arabic texts were translated into Latin. It was a major point of transmission of classical, as well as Arabic knowledge to Christian Europe.⁶² Philosophy in the West is usually assumed to have an Antiquity-Renaissance trajectory, when, as mentioned, Muslims also looked back to classical learning. The works of Greek philosophers and mathematicians that had been lost to Europe were to be found here. Ibn Rushd's twelfth century critique of Aristotle was central to Europe's classical revival. His summaries and

commentaries were translated from Arabic into Latin in the thirteenth century by Michael Scott and Herman the German. Gerard of Cremona translated, among other works, Al-Zahrawi's medical encyclopedia, Ibn Haytham's *Book of Optics*, Al-Kindi's treatise on geometrical optics and Al-Razi's *A Study and Classification of Salts and Alums* (sulphates).⁶³ Ancient science and that of the Arab-Islamic world was often translated by Jewish doctors who had fled Spain.⁶⁴ As the case of medicine shows, the West is indebted to the Islamic world for the rebirth of scientific enquiry.⁶⁵ Moreover, Muslim scholars were not simply the keepers of Greek knowledge, as is often claimed in Eurocentric accounts of the exchanges between the Arab-Islamic world and the West. Classical texts were not only preserved by the Arab-Islamic world, but also elaborated on by Muslim scholars. As Goody remarks, the Arab-Islamic Empire played a critical mediating role in the rebirth of knowledge associated with the Renaissance, which was also stimulated by the contributions of Arab scholars.⁶⁶ The revival of classical knowledge also helped to enable a degree of secularization. In the West, secularism did not replace religion, but restricted religious learning and led to the growth of humanism. Religion was rationalized to some extent in terms of reducing appeals to rituals and mystification – very much in line with Protestant reformism.⁶⁷

Philosophical traditions in Europe did not escape the influence of the Arab-Islamic world. A number of Arab-Islamic philosophers were influential in Europe. Among them was Al-Razi, who was born in 865 CE and wrote philosophical works exploring the relationship between religion and philosophy. He believed that all religious and ethical truth could be attained through rational thought. Ibn Sina, who lived in the tenth century, was also widely known in the West for his theological contributions. A century later, Al-Ghazali made the case for a literal interpretation of the Quran, asserting that the employment of reason alone to attain truth would lead to the destruction of religion and morality. Ibn Rushd was born in the twelfth century and wrote a commentary on Aristotle. When interest in philosophy began to flourish in the twelfth century, Islamic philosophy not only became a source of knowledge in its own right, it also provided a means by which Europeans could become familiar with Greek texts that had become lost to them. As Robert van de Weyer notes, the influence of Muslim philosophers in the long run was to liberate European thought from religious dogma, which, in turn, contributed to the European Renaissance and related developments.⁶⁸

Scientific inquiry also flourished in the so-called golden age of Islam. Muslim scholars made important advances in astronomy, compiling

tables that calculated the movements of the sun, the moon and the planets.⁶⁹ They not only drew on Greek texts, but also Persian and Indian astronomical knowledge to further their own understanding of the universe, as well as contributing to the development of astrology. They refined the Ptolemaic system.⁷⁰ However, these mathematical methods were soon discovered to be inadequate and this resulted in the search for new techniques that led to the development of trigonometry and other mathematical methods.⁷¹ Islamic scholars developed mathematics as an independent science, introducing, above all, a more sophisticated number theory, which made computations much simpler.⁷² Knowledge of astronomy and mathematics entered Europe from Spain.⁷³ While some interest in astronomy can be traced back to the Carolingian period in Europe, later advances were only made based on Arab-Islamic astronomical knowledge. Given the paucity of translations of Greek texts, the major stimulus to the growth of the discipline came through contact with the Arab-Islamic world and Latin translations of Arabic astronomical studies.⁷⁴ Prior to the introduction of Arabic numerals, which themselves had Indian origins, Europeans had employed Roman numerals that limited mathematical operations and set back the development of mathematical theory in Europe. The introduction of Arabic numerals into Europe is thought to have occurred in the early thirteenth century through the publication of *Liber abaci* by Leonardo Fibonacci, whose father was in charge of a Pisan trading colony in today's Algeria. In preparation for his dealings in business, Fibonacci's father sent him to learn mathematics with an Arab teacher.⁷⁵

While historians have often traced the development of medicine in Europe back to Antiquity, a very significant contribution was made to this field by Arab-Islamic scholarship. The Arab-Islamic world had preserved the greater part of Galenic medical knowledge. Jewish refugees fleeing repression in reconquered Spanish lands brought medical knowledge from the Arab-Islamic world, stimulating the study of medicine at Lunel, Narbonne and Montpellier in the south of France. The Italian town of Salerno, a medical centre in the Middle Ages, was also influenced by Arab-Islamic medicine.⁷⁶ Muslim scholars not only employed Greek texts, but produced their own original works. The study of anatomy was advanced by the tenth century works of Abu Al-Qasim, known in Europe as Abulcasis, who was able to work on humans. Thus, the development of medicine in Salerno and Montpellier were not simply the result of the resurrection of classical learning and a continuation from them. Developments owed much to Arab-Islamic world, which acted

both as a medium of transmission of Greek knowledge and as a source of new medical knowledge.⁷⁷ The work of Ibn Al-Nafis, who critiqued Galen's work on the human body, laid many of the foundations for the later work of William Harvey.⁷⁸ Ibn Sina's book *Kitab al Shifa* [The Book of Healing] introduced the principals of logic and its use in the acquisition of knowledge to Medieval Europe, and his works placed science and religion on an equal footing in terms of comprehension of the world. Other major scholars in the medical field included Al-Razi (Al-Razes) and Ibn Rushd.⁷⁹ Europe continued to depend on Arabic medicine until well into the fifteenth and sixteenth centuries.⁸⁰

The diffusion of ideas, techniques and institutions from the Arab-Islamic world to Europe came to be virtually erased from the collective memory of Europeans and Westerners in general. There are many reasons for this. Despite cultural borrowing from the Arab-Islamic world, a negative and menacing image of Islam came to dominate in Europe. Scholarly interest in Islam as a religion is thought to have only begun at the time of the Crusades, though a misunderstanding of Islam generally reigned. While a number of prominent translators demonstrated a deeper knowledge of Islam and translated the Quran in the early twelfth century, the image of Islam that developed in Medieval Europe was one of Islam as a falsehood, a religion of the sword and self-indulgence, and of Mohammed as an antichrist. This was contrasted with a European image of Christianity as true, converting by rational argument and persuasion, and a religion of asceticism.⁸¹ Montgomery Watt was perhaps correct when he said that '[i]n general the feelings of western Europeans over against Islam were not unlike those of an underprivileged class in a great state. Like the underprivileged class they turned to religion in their effort to assert themselves against a privileged group...'.⁸² In this sense, Islam helped to prompt Europe into developing a new self-image.⁸³ The temporal identity that would gradually replace a predominantly spiritual identity of Christendom was, as discussed, premised on a progressive linear trajectory that left no room for acknowledging outside influence, let alone that from the Arab-Islamic world.

'An ocean model of civilization'

This book aims to recapture this lost dimension of history, and it is my hope that in so doing it will contribute to a better understanding of both the West and the Arab-Islamic world, their exchanges and shared heritage, as well as help to foster more positive present and future relations. East and

West have not, after all, only met in conflict and their common history is not only one of tension and antagonism. Moreover, their positive encounters served to advance our collective knowledge.⁸⁴ As I have mentioned in *Sustainable History and the Dignity of Man: A Philosophy of History and Civilisational Triumph*, '[e]ach high point in the history of human civilization has taken place where the conditions were ripe and has borrowed and built upon the achievements of other cultures whose "golden age" may have passed'.⁸⁵ Advances in human civilization are cumulative and the fruit of collective achievements. The human story is one story. Rather than conceiving of multiple civilizations, we ought to think in terms of multiple geo-cultural domains that together comprise one human civilization. In *Sustainable History and the Dignity of Man*, I have outlined 'an ocean model of one human civilization' into which flow multiple rivers that each contribute to its character and depth (see [Figure 1.1](#)).⁸⁶

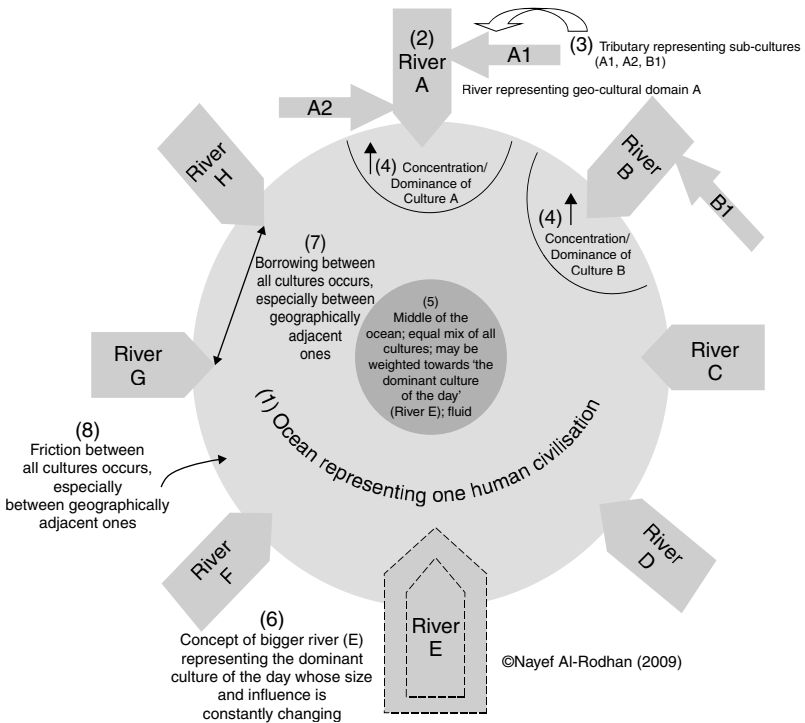


Figure 1.1 The ocean model of one human civilization

Source: N. R. F. Al-Rodhan (2009), *Sustainable History and the Dignity of Man: A Philosophy of History and Civilisational Triumph* (Berlin: LIT), p. 37, reproduced with the permission of LIT.