

4

Evolution of the Concept of Method in Islamic and Western Thought

GOALS OF THIS CHAPTER

1. To trace the evolution of the concept and meanings of method (*manhaj*) in both Islamic thought and Western thought.
2. To clarify the relationship between the concept of method in the Islamic heritage and growth of knowledge in scientific disciplines.
3. To observe the link between the emergence of methodological rules and the sciences dealing with Islamic texts.
4. To show how the meanings of texts, human social conditions and the natural world come together in Islamic methodology.
5. To note defects in the historical evolution of method in Western thought.
6. To discuss the contributions made by Aristotle, Francis Bacon, and René Descartes to the development of the concept of method in Western thought.
7. To affirm the impact of evolving human experience on the evolution of the concept of method.
8. To compare the trajectory of the development of the concept of method and methodological practices in the Islamic and Western heritages.

INTRODUCTION

This chapter will present a brief overview of the history of method. The focus here will be on the term “method” or other terms of direct

relevance to it, with attention given to the most significant phases of the term's evolution. Thus far we have presented the historical development of the concept of method in Islamic thought without reference to its evolution in Western thought. In what follows, however, we set out to identify the role played by method in the various phases of interaction between Western and Islamic thought.

The Arabic words *manhaj* and *minhāj* are both found in the Holy Qur'an, the Hadith literature, and other Arabic texts. However, the word *manhaj* has come to be used more frequently in modern parlance. The terms *minhāj*, *nahj* and *manhaj* are associated individually with particular contexts. However, each of them refers to essentially the same reality, namely, the soundest, safest path to assured knowledge and understanding. Muslim thinkers, who became aware of the importance of method early in Islamic history, could see clearly that method (*manhaj*) tended to be colored by whatever school of thought, philosophy or jurisprudence it was associated with. This was the case regardless of whether the school concerned was Islamic in origin and outcome, or combined the general culture of Islamic society with intellectual currents originating in Greek, European, or Oriental Illuminationist thought.

Western thinkers tend to trace the history of method back to the era of Greek philosophy; they then jump to the developments that took place the European Renaissance, and end with a discussion of the methodological crisis revealed in the statements of certain post-Modernists. However, we attempt in our discussion of Western thought on method to identify all the major way stations of its history, including phases involving cultural interaction and borrowing that other historians of thought may have passed over.

First: EVOLUTION OF THE CONCEPT OF METHOD IN ISLAMIC THOUGHT

During the life of the Prophet Muhammad, for example, the revelation would be bestowed on him from on high, whereupon he would communicate it to those around him, asking his scribes to write it down and deliver it to the Muslim community. In the course of

communicating verses of the Qur'an to others, the Prophet would sometimes clarify and explain the Qur'anic text. However, he was careful to avoid allowing the Qur'anic revelation to be confused with his own speech. It was for this reason that, according to Muslim scholars, the Prophet wisely refrained from allowing people to write down hadiths in the way they were writing down the words of the Qur'an.

“Method” during the days of the Prophet Muhammad consisted in the Prophet’s communication of the words of the divine revelation, and the Companions’ reception of the revelation.

The Holy Qur'an and hadiths – that is, the words and actions of the Prophet as recorded and passed down through chains of trustworthy narrators – were thus the two primary sources of knowledge which ordered life in the early Muslim society, and it was these that formed the basis for the processes of teaching and learning. As one would expect, the Prophet’s Companions were not in agreement about everything after the Prophet’s death. Consequently, the Companions’ consensus (ijma^ʿ) on this or that issue or question was viewed as a third source of reliable knowledge. In cases concerning which there was no explicit text in either the Holy Qur'an or the Prophetic Sunnah, Muslim scholars drew analogies between these new cases and previous, similar cases that had received explicit mention in the Holy Qur'an or the Sunnah. For this reason, analogy (*qiyās*) was included as a fourth source of Islamic knowledge. Consensus and analogy may be viewed as types or cases of *ijtihad*, or reasoned interpretation; therefore, *ijtihad* has also been classed as a source of knowledge after the Qur'an and the Sunnah.

“Method” during the lifetimes of the Prophet’s Companions consisted in deriving legal rulings from the Qur'an and the Sunnah through the process of *ijtihad*.

These, then, are the sources that made up the methodology on the basis of which Muslims derived knowledge in the specific sense of legal rulings. For this reason scholars referred to them as sources of legislation. At times scholars would go beyond the conclusions reached

through analogical reasoning, basing their rulings instead on the value, spirit and fundamental purpose of the action being ruled on. This process was referred to by scholars as *istihsān*, or juristic preference.¹

First-generation Muslims felt that the Holy Qur'an and the Prophet's explanations and applications thereof were sufficient to order their day-to-day affairs. Consequently, after the Prophet's death, consensus (*ijma'*), analogical reasoning (*qiyās*), juristic preference (*istihsān*) and the processes of defining human interests and the overarching aims of Islamic law were all forms of reasoned interpretation (*ijtihād*), the goal of which was to increase their understanding of the meanings of the Qur'anic revelation and what they had come to know through the Prophetic Sunnah. The process of recording the Islamic sciences, vouching the relevant texts, and regulating the ways in which these texts were used called for the development of specific new approaches. The various sciences that were developed at that time included the principles of jurisprudence, the principles of exegesis, principles of Hadith study, and scholastic theology. These newly developed disciplines were an outgrowth of Muslim reasoning, they were without precedent in the history of the sciences, and they provided a means of ordering Muslims' concrete affairs on the basis of Islamic law. Consequently, they constituted an Islamic methodology par excellence.

However, when we reflect on the principle source of this Islamic knowledge – the Qur'an itself – it becomes clear that the Qur'an was not only addressing the first generation of Muslims concerning the sciences they needed to establish. Nor was it addressing Muslims alone. Rather, it was addressing the entire human race, providing them with the source of guidance they needed to order all their affairs. The Qur'an continues to address believers and unbelievers alike, engaging them in dialogue and debate, telling them stories of bygone nations, encouraging them and warning them, and offering them evidence to which they are obliged to make some response. The Qur'an deals with life's affairs in their social, political and economic aspects alike while entering the inner recesses of people's hearts and minds. It points to the marvels of the world we live in from the level of the infinitesimal to the vastest expanses of the universe. By means of its various styles of rhetoric – story-telling and parables, dialogue and questioning, enticement

and threat – the Qur'an stimulates the mechanisms of perception and awareness in human beings in such a way that they put them to use as sources of knowledge, while holding them responsible ultimately for these uses and their outcomes.

This type of reflection helped Muslim scholars to appreciate the Qur'an's focus on informing people and directing them to what they ought to do, a focus whose aim is to help people both to achieve their interests in this earthly realm and to lead a life that earns them God's pleasure in the world to come. These aspects of knowledge have their origin in the written revelation. Further reflection gave them an appreciation of the way the Qur'an encourages us to contemplate and meditate on the realities both within ourselves and in the outer world. Through these mental processes human beings are able to discover the laws God has established on the psychological, social and cosmic planes, and, having grasped these realities, to legislate the laws needed to order life's affairs, to establish a community devoted to truth and justice, and to construct an enlightened civilization. These aspects of knowledge have their origin in the universe as a whole with its vast array of objects, living beings, events and phenomena. And just as human life is a unified whole in which there is no division between the requirements of this world and the world to come, so also should human beings relate to the two sources of knowledge – revelation and nature – in an integrated, holistic manner.

The natural and social sciences, when linked to the guidance contained in the Qur'an, lead toward a fuller understanding of phenomena and events.

The process of reflecting on these two dimensions – the inward and the outward – calls for use of the various tools available to us as human beings. It would not be fitting for us to neglect the use of our immediate physical senses. Take, for example, the role played in the reception of auditory stimuli by the sense of hearing, or of visual stimuli by the sense of sight. Nor should we neglect to verify the validity and reliability of the data we receive, ensuring that it provides an accurate description of objects and events both quantitatively and qualitatively. This

perceptive and analytic process can only take place through the use of the heart or the mind, which attributes meaning to all the input we receive. The Qur'an combines these two types of tools – sensory perception and the rational faculty – with a sense of responsibility, making clear that hearing and sight in their capacity as sensory faculties, and the mind as the faculty of understanding and awareness, need to be used together. We are not meant to stop at outward forms, passing sensations, or hasty, superficial assessments of things. Rather, the Qur'an calls upon us to use our physical senses and our faculty of discernment in a profound, deliberate manner, examining phenomena from all angles and reaching conclusions with care. Only then can we combine all elements of our observations, experiences and experiments in a manner in which all elements of the judgment process are called into play, and the available evidence, data and proofs are in clear focus.

The use of sensory perception and reason serve to generate and test knowledge, then put it to use.

With such considerations in mind, we can better understand the Qur'anic insistence on the need for both sensory and mental perception. We read, "...Go over all the earth and behold..." (*sūrah al-ʿAnkabūt* 29:20); "...Consider whatever there is in the heavens and on earth!..." (*sūrah Yūnus* 10:101); "Art thou not aware of thy Sustainer [through His works]? – how He causes the shadow to lengthen [toward the night] when, had He so willed, He could indeed have made it stand still: but then, We have made the sun its guide; and then, [after having caused it to lengthen,] We draw it in towards Ourselves with a gradual drawing-in" (*sūrah al-Furqān* 25:45-46); "...What do you think? If of a sudden all your water were to vanish underground, who [but God] could provide you with water from [new] unsullied springs?" (*sūrah al-Mulk* 67:30); "Behold, then, [O man,] these signs of God's grace – how He gives life to the earth after it had been lifeless!..." (*sūrah al-Rūm* 30:50); "...No fault wilt thou see in the creation of the Most Gracious. And turn thy vision [upon it] once more: canst thou see any flaw? Yea, turn thy vision [upon it] again and yet again: [and every time] thy vision will fall back upon thee, dazzled and truly

defeated.” (*sūrah al-Mulk* 67:3-4). Examples of such statements abound in the Qur’an. The Qur’an makes mention of specific phenomena that God has placed at human beings’ disposal in order that they might put them to use and benefit from them and, in response, realize that they are blessings from God. In fact, such blessings are incalculable:

[And remember that] it is God who has created the heavens and the earth... and has made the rivers subservient [to His laws, so that they be of use] to you; and has made the sun and the moon, both of them constant upon their courses, subservient [to His laws, so that they be of use] to you; and has made the night and the day subservient [to His laws, so that they be of use] to you. (*sūrah Ibrāhīm* 14:32-33).

The evidence gleaned from research and observation are linked to elements of the Qur’anic methodology.

A methodology that does not rely on reality with its array of objects, events and phenomena, and which fails to employ deliberate, repeated observation, thorough descriptions and precise calculations followed by experimentation and practical application will never lead to reliable, verifiable knowledge. Similarly, any methodology which does not involve gathering all data of relevance to the topic of study, be they visual, audio, or in the form of Islamic legal texts, will fail to yield the reliable knowledge it is intended to yield.

The Qur’anic revelation sets forth the research methodology that will lead to documented, and documentable, knowledge. Just as the “written signs” contained in the Qur’an affirm definitive rulings on certain questions and issues, they also insist on the necessity of seeking out the “visible signs” to be found within ourselves and in the created world around us. These “visible signs” enable us to discover the patterns and laws that govern existing phenomena and the changes and events associated with them. Why not speak, then, of “a Qur’anic research methodology,” or, at the very least, of a research methodology that derives its distinctive features from the Qur’an? Generalizing a bit further, we can speak of “an Islamic research methodology.” If, then, a

given writer speaks specifically of “*the* Islamic methodology,” he is referring to the methodology he himself (or she herself) has observed in the Qur’anic discourse.

Exercise

Give three examples of ways in which one might reconcile the “written signs” found in the Qur’an with the “visible signs” found in the created world for the sake of formulating an Islamic research methodology.

The Qur’an has a miraculous, generous quality about it in that the meanings it conveys accommodate whatever level human knowledge has achieved. In other words, they expand and grow along with our human knowledge and understanding. Consequently, different readers will come away from the Qur’an with different understandings of the verses that refer to the elements of the Qur’anic – or Islamic – research methodology. Scholars’ views of this methodology will differ in keeping with the degree of understanding and insight God has granted them, and depending on how much insight they have gained into geographical or temporal contexts.

Unless we appreciate the importance of the sensory and empirical pathways to knowledge, including field studies, experimentation, application and the like, all of which are advocated by Islamic research methodology, our understanding of the Holy Qur’an will remain incomplete. The Prophet’s perspective on this Qur’anic principle may be seen in the fact that he would sometimes suspend judgment on this or that issue until more data had become available. In some cases he would wait for a revelation from Heaven, and in others, information based on what he had observed or heard from those around him. We find, for example, that the Prophet had been about to forbid married Muslim men from engaging in sexual relations with their wives during the period between the birth of a newborn and the time the child was weaned. He had intended to issue this prohibition based on his belief that sexual relations would negatively impact the newborn, particularly if they resulted in another pregnancy while the newborn was still nursing. However, he noticed that this practice was having no ill effects on the children of the Byzantines and the Persians. Consequently, he

decided not to forbid it after all. Similarly, the Prophet had been of the belief that pollinating date palms was nothing but a misguided practice of the people of Medina, and that God Almighty would permit the date palms to bear fruit just as other trees did without human intervention. However, it then became apparent to him that date palms failed to bear when people stopped pollinating them. Hence, he modified his position on this matter. In so doing, he affirmed the importance of empirical observation and practical experimentation. He freely acknowledged that he himself lacked expertise in such matters, since his tribe in Makkah had never owned date palms, and that those with experience in this area were more knowledgeable than he was.

Exercise

Present other examples illustrating the fact that the Prophet would wait for more facts to emerge between issuing a verdict on a given issue.

With the variety of perspectives and tools relevant to the treatment of this or that topic of research, worldview remains the principle factor determining the approach to be applied as well as the outcomes of such application. For example, when criticizing hadiths, Muslims make use of the historical method just as Orientalists or materialists do. However, there is an essential difference between the Islamic and Orientalist approaches. This difference owes to an unbridgeable differences between their respective foundations and frames of reference. In this connection N. J. Coulson states,

...it must, of course, be frankly recognized that the Muslim and Western methods of Hadith criticism are irreconcilable because they rest on totally different premises. Between the dictates of religious faith on one hand and secular historical criticism on the other there can be no middle way of true objectivity.²

The significance of method for the Islamic sciences first became apparent as a result of the concern to preserve the sayings of the Prophet and to protect them from corruption and falsification. The systematic use of chains of transmission (*isnād*) was developed into a science, as were the principles of hadith, also known as the science of

hadith terminology (*‘ilm muṣṭalaḥ al-ḥadīth*). Strict rules were developed for determining the reliability of every narrator in a given chain of transmission, a process which led to the development of the science of contestation and validation (*‘ilm al-jarḥ wa al-ta’dīl*) and “the science of men” (*‘ilm al-rijāl*), that is, the study of the personal histories and moral characters of men who had transmitted accounts from the life of the Prophet, as well as other sciences relating to the Prophetic Sunnah. Numerous books were written on such topics, including *al-Jarḥ wa al-Ta’dīl* (Contestation and Validation) by Ibn Abī Ḥātim (d. 327 AH / 938 CE), *Al-Kifāyah fī ‘Ilm al-Riwāyah* (On the Science of Narration) by al-Khaṭīb al-Baghdādī (d. 463 AH / 1070 CE), *Mīzān al-ʿIṭidāl fī Naqd al-Rijāl* (The Measure of Moderation in the Critique of Men) by al-Dhahabī (d. 748 AH / 1348 CE), and *Lisān al-Mīzān* (a reworking of al-Dhahabī’s “Measure of Moderation”) by Ibn Ḥajar al-ʿAsqalānī (d. 852 AH / 1448 CE).

The elements of method evolved with the emergence of the science of the principles of the Prophetic hadith.

Moreover, although most of these books focused on methods of verifying the validity and reliability of accounts relating to the life of the Prophet, they also contained general methodological rules that were applicable to all sciences, particularly the nascent science of historiography, whose evolution culminated in the appearance of Ibn Khaldūn’s renowned *Muqaddimah* (the preface to his book on history entitled *Kitāb al-ʿIbar wa Tārīkh al-ʿArab wa al-ʿAjam al-Barbar wa man Jāwarahum min Dhawī al-Sulṭān al-Akbar*), which contained rules for systematic historical writing.

Exercise

Looking at Ibn Khaldūn’s *Muqaddimah*, find the rules he sets forth for systematic historical writing, and list the errors Ibn Khaldūn identifies in the writings of other historians.

Early in the history of Islam there emerged gifted thinkers with the capacity to instruct others in the matters of their religion. Each of these

outstanding scholars came to have his own authoritative frame of reference and individual approach. Thus, while Mālik ibn Anas (d. 179 AH/795 CE), who interpreted Islamic law for Muslims living in Madinah, was instructing people in jurisprudence based on his copious knowledge of hadith, Abū Ḥanīfah in Iraq was basing his teaching on a relatively narrower store of hadith knowledge (relative, that is, to Mālik's knowledge). Nevertheless, Abū Ḥanīfah's contribution was to employ reason in the understanding of the various types of situations that called for legal rulings.

Muslim scholars adopted distinct approaches to the derivation of juristic rulings.

Then came Imam al-Shāfi'ī (d. 205 AH/820 CE), who combined the approaches of Mālik and Abū Ḥanīfah. Al-Shāfi'ī documented and advocated the method he had adopted in his volume entitled *al-Risālah* (The Message). Al-Shāfi'ī's *Risālah* served as the foundation for writing about what later came to be known as the principles of jurisprudence (*ilm uṣūl al-fiqh*), a systematic science par excellence.

As Islamic society began occupying itself with philosophical studies and as the natural sciences and scholarly works translated from Greek, Persian and other languages began making their way into Arab Islamic culture, there arose a need for systematic writings that would set down rules for scientific investigation. Use was made initially of reasoning from analogy and logical proofs, after which this approach was expanded and applied on a broader basis. Noting the insufficiency of this approach, scholars added the approach of reasoning or inference from induction. Specialized books were written on the classification of the sciences, their general methods, and their applications to particular sciences. Such books included *Mafātīḥ al-ʿUlūm* (Keys to the Sciences) by al-Khawārizmī (d. 226 AH/840 CE), a treatise entitled *al-Tawfīq ʿalā Tārīkh Ikhtiṣār al-Najāh bi Ikhtiṣār al-Tarīq* (A Brief Treatise on the Swiftest Path to Salvation) by Ibn Ḥazm (d. 457 AH/1064 CE), *Mīʿyār al-ʿIlm* (The Measure of Knowledge) by al-Ghazālī (d. 505 AH/1111 CE), *Manāḥij al-Adillah fī ʿAqā'id al-Millah* (Approaches to Evidence Concerning Religious Doctrines) by Ibn Rushd (d. 595 AH/1198 CE),

Al-Mu'īd fī Adab al-Mufīd wa al-Mustafīd (A Review of Writings on Instruction and Learning) by al-^ʿAlmawī (d. 981 AH/1573 CE), *Tadhkirah al-Sāmi' wa al-Mutakallim fī Adab al-^ʿĀlim wa al-Muta'allim* (A Reminder to Listener and Speaker: Rules of Etiquette for Students and Teachers) by Ibn Jamā'ah (d. 672 AH/1273 CE), *Kashshāf Iṣṭilāḥāt al-^ʿUlūm* by al-Tahānawī (A Listing of Scientific Terminology), (d. 553 AH/1158 CE), and many others.

Every group of scholars had its own scientific logic and methodological tools. Hadith scholars had their methods of dealing with the sciences of narration and hadith terminology, exegetes had their methods of studying traditions, rhetoric and language, juristic rulings, and mystical interpretations; jurists and specialists in the principles of jurisprudence had methods of reasoning from analogy and induction, theologians had their methods of argumentation, dialogue and debate; the Sufis had their methods of mystical and experiential interpretation, while natural scientists had their methods of induction and hands-on experimentation.

It may go without saying that sensory perception needs to be paired with rational comprehension in order for human beings to construct true knowledge. Nevertheless, some Muslim scholars have gone to great lengths to detail and demonstrate this necessity. Al-Ḥasan ibn al-Haytham (d. 430 AH/1038 CE), for example, stipulated that sensory input and the mind have to work together in order for one to arrive at certainty,³ and he supported his claim by quoting from Galen. He then proceeded to explain the anatomy of the eye and the way in which human sight takes place in both its material, physiological dimension and its psychological, cognitive dimension. Ibn al-Haytham also discussed the role of memory and the sensory signals the person receives, and how he or she takes in part of the image being seen and uses this to reconstruct the remaining parts.

Methodological literature cites al-Ḥasan ibn al-Haytham's contribution to the evolution of scientific and empirical method in the context of Islamic history. Ibn al-Haytham wrote that he was well-versed in the sciences of the ancients, and that he had found what he was looking for in Aristotle's writings on the science of logic, the natural sciences and theology, which together constitute the heart of philosophy.

According to Ibn al-Haytham, Aristotle began by establishing universals and particulars, generalities and specifics, as well as logical terms. Impressed with the neatness of Aristotle's system, Ibn al-Haytham applied himself to the pursuit to what he termed the three "sciences of philosophy," that is, mathematics, the natural sciences, and theology. He steeped himself in their basic principles and undertook a thorough study of their rulings. In addition, he classified the various branches of these three sciences as a means of clarifying and explaining their more obscure aspects.⁴

However, after mastering the sciences of the ancients, which had yet to arrive at the use of induction and empirical experimentation, Ibn al-Haytham went beyond these sciences. In his research into physical sight, he employed a method which he described with a detailed precision rarely found among either his contemporaries or his predecessors. Ibn al-Haytham described his method as follows:

We begin our research with a thorough investigation of the facts and the states of visible entities, identifying the distinguishing features of particulars. Then, based on a process of induction, we glean that which is relevant to the sense of sight and the act of seeing, noting phenomena that are stable and unchanging, and which appear to the viewer as they are in reality. Then, gradually and in an orderly manner, we refine our criteria while critiquing the premises [on which our work is based], exercising reserve with respect to the conclusions we reach. In all that we investigate and examine, we make it our aim to exercise prudence and caution rather than surrender to mere impulse. And in all we detect and critique, we seek Truth itself, not merely conjecture or opinion. It is hoped that in this way, we will arrive at the Truth – which brings joy to the heart – and, in so doing, reach the goal wherein lies perfect certainty. By virtue of cautious critique, we will have won the Truth, which does away with doubts and disputes.⁵

Similarly, the physician Abū Bakr al-Rāzī (d. 313 AH/925 CE) spoke of the need for experimentation and analogical reasoning in connection with his treatment of patients. Al-Rāzī discussed patients' hospital records and statistics relating to various cases, describing the conclusions he reached based on them in what are referred to in modern parlance as "retrospective studies." He wrote:

I have kept these records over a number of years in the hospitals in Baghdad and al-Rayy, as well as in my own home. I have recorded the names of those whose cases correspond to what is written in these books, as well as the names of those whose cases do not correspond to it on a case-by-case basis. The cases that do not correspond to what is written in existing medical writings are as numerous as the cases that do. This lack of correspondence is a serious matter, and, just as in other crafts and professions, the prudent individual should not place full, unthinking confidence in what has been recorded in the past. Nor should he make generalizations or begin a treatment on the basis thereof. The reason for this is the nearly two thousand patients whose cases do not correspond to existing medical writings. Hence, I have refrained from issuing a definitive judgment based on what I have observed except when the evidence is so clear and incontrovertible as to be beyond doubt. For some time I have continued, through experimentation and analogical reasoning, to work on a treatment for acute diseases, taking care not to make any mistake at a patient's expense, while also taking care not to allow an existing illness to go on longer than necessary.⁶

Hence, method among Islamic thinkers has been in evidence historically in more than one field of study. In fact, its manifestations can be traced in virtually all fields. Systematic or methodological thought is associated with specific rules and principles in both the Holy Qur'an and the Prophetic Sunnah. Similarly, it was evident in the practices of the Companions and Successors of the Prophet, while the writings of hadith scholars and jurists lent it greater definition and established its rules and premises. The concept and practice of method were further defined and classified in the works of scholastic theologians, philosophers, mystics and historians. Nevertheless, the field which is known preeminently for its concern for method is the science of the principles of jurisprudence, which lay the foundations for Islamic legislation. As one writer has remarked, works on the principles of [Islamic] legislation and jurisprudence contain "logical analyses and methodological rules that bear a clear philosophical stamp. Indeed, what we find in this discipline is nearly identical to the rules and foundations of modern research methods."⁷

It will be noted that the Holy Qur'an urges us to employ an overall epistemological approach which links the visible cosmos with the written revelation in their capacity as sources of knowledge. This same

approach links the use of reason and sensory input in their capacity as tools for relating to everything in both the created universe and the written revelation. In relation to human efforts and striving, this approach links the benefits of this earthly life with reward in the life to come; similarly, it connects the realms of thought, scientific research, and concrete practice.

Exercise

Design a chart showing the evolution of Islamic methodology in its various phases and fields. The chart should contain the following elements: the methodology of reception, the methodology of chains of transmission and documentation, the methodology of jurisprudence, the methodology of the principles of jurisprudence, the methodology of scholastic theologians, variety and integration in methodology, empirical scientific research methodology, mystical/experiential methodology, methodological defects and the backwardness of the Muslim community, methodological dependency and the disintegration of the Muslim community, methodological awareness, and acquiring the methodological faculty in the realms of thought, research, and behavior.

***Second: EVOLUTION OF THE CONCEPT OF
METHOD IN WESTERN THOUGHT***

The prevailing pattern of historiography in Western thought is based on two primary foundations: (1) recorded human history excluding religious sources, and (2) the history of the European peoples excluding that of other peoples, or, at the very least, undermining their importance.⁸ Hence, the history of philosophy, the history of science, and the history of civilization itself begins in Greece and ends in Western Europe and its North American extensions!

When discussing the first foundation above, we should bear in mind that the little that has been recorded of the history of human civilization confirms that people of all nations have used their minds and developed the sciences and the arts. They have formulated legal systems and constructed edifices whose remains stand to this day, and some of which are even classed among the wonders of the world. When the Greeks' turn came along, they built upon the efforts of those who had

preceded them. In other words, they did not start from scratch. In his *History of Greek Philosophy*, author Yusuf Karam notes that “the Eastern peoples who predated the Greeks had theories that embodied their perspectives on all the issues that were later classified as being philosophical in nature. In fact, for every idea the Greeks came up with, we find a similar, Eastern, idea which preceded it, or a principle upon which it may have been based.”⁹

As for the exclusion of religious sources, this may have resulted from the conflict that raged during Europe’s Middle Ages between science and the institutional church. When this conflict ended with the triumph of science, religious authority was isolated from the history of science and human wisdom.

Topic for Discussion

Given the tendency by Western historians of human thought to exclude religious sources from their study of history, first explain the reason for this phenomenon, then discuss its consequences.

However, we cannot rule out the possibility that prophets and messengers appeared in Greece with divine guidance. After all, we know them to have appeared among the Hebrews, the Arabs, and other peoples. The Holy Qur’an states unequivocally that peoples in all ages and all places have been visited by divinely inspired messengers who came bringing both warnings and glad tidings in their own languages. God declares, “[We sent all these] apostles as heralds of glad tidings and as warners, so that men might have no excuse before God after [the coming of] these apostles; and God is indeed almighty, wise” (*sūrah al-Nisā’* 4:165). How, then, can we rule out the possibility that Greece, too, was visited by divinely inspired apostles? If our authoritative basis for this certainty is the Qur’an, it should be borne in mind that even the Qur’an itself has not told us about all the apostles that have been sent to humankind. As God declared to the Prophet Muhammad, “[And indeed, [O Muhammad,] We sent forth apostles before thy time; some of them We have mentioned to thee, and some of them We have not mentioned to thee...” (*sūrah Ghāfir* 40:78).

In his book *‘Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibbā’* (Noteworthy Reports on the Various Classes of Physicians), Ibn Abū ‘Uṣaybi‘ah tells us that some philosophers, when they were unable to answer questions that had been addressed to them, would refer their questioners to the Prophet. In the first section of his book, Ibn Abū ‘Uṣaybi‘ah cites sayings about the divine and prophetic principles underlying the science of medicine, drawing examples from Greek history. He quotes Galen as having said that Asclepius, the first of the ancient Greeks to have spoken about medicine, had spoken by divine inspiration. We are told that “the kings descended from his line used to claim that he was a prophet.” Galen also tells us that “Asclepius, who lived before the Great Deluge, was a disciple of Agathodaemon the Egyptian, and was recognized as a prophet by the ancient Greeks and Egyptians. It was Asclepius who launched the craft of medicine among the Greeks...” Ibn Abū ‘Uṣaybi‘ah goes on to add that:

Asclepius was such an adept physician that he was able to heal patients whose recovery others had despaired of. Some claimed that God Almighty had honored him by exalting him to the status of the angels. It has been said that Asclepius was the prophet Idris, upon him be peace.¹⁰

Al-Mas‘ūdī states that in ancient times, particularly in the days of the great Brahman king, India was the land of knowledge and wisdom where the iron and gold industries developed along with astronomy, and numerology. The first of the cosmic principles developed in ancient India is described by al-Mas‘ūdī as “the First Principle, which gives all existent entities their existence while generously bestowing Its goodness upon them.” Moreover, although al-Mas‘ūdī believed Brahman to have been a king, he makes mention of those who believe him to have been God Almighty’s messenger to India, as well as those who claim that he was Adam himself, peace be upon him.¹¹ In the same work, al-Mas‘ūdī describes Zoroaster as ruler of the Mazdaists, who brought them the book known as the Zend Avesta (Arabic, *al-Zamzamah*).¹²

Scholar Nadim al-Jisr proposes that many aspects of the wisdom found among the ancients originated in the form of prophetic messages. He states, “For God’s guidance on the lips of the Apostles is more

ancient than the Greeks and their philosophy. In fact, I think it probable that much of the philosophy of the ancients in Egypt, China and India represents the remnants of prophetic teachings that history has forgotten, and whose bearers have come to be classified as mere philosophers whereas, in fact, they may have been prophets or their followers.”¹³

In all fairness, it should also be noted that some Western thinkers do recognize the efforts of peoples and nations that preceded the Greeks in relation to certain aspects of wisdom and philosophy. Hans-Georg Gadamer, for example, sees no possible beginning for philosophy anywhere but in the works of Plato and Aristotle. At the same time, however, he holds that these two philosophers were the portals through which the floodwaters of the period that preceded them came rushing. This being the case, they were historians of the pre-Socratic era. Pre-Socratic philosophy originated in Central Asia, and what is termed epic literature and philosophy both predate Socrates; in fact, they predate most of the written heritage that has come down to us. Moreover, the language in which they were written was the language that was spoken by the Greeks, a fact which Gadamer describes as “one of the great puzzles of human history.” He notes that the Greeks did not invent writing by means of an alphabet. Rather, they took it and completed it by drawing on the Semitic alphabet in a process that took two hundred years at most.¹⁴

Pre-Socratic Greek Methods

In his *History of Greek Philosophy*, Yusuf Karam notes that the most ancient Greeks known to us were the Ionians. A prominent scholar by the name of Thales (624–546 BC) traveled widely through the East and delved deeply into the Babylonian and Egyptian sciences. Thales adopted the empirical method and attempted to engage in induction and proof. The writings of the Ionians, who were particularly interested in nature, appear to have been lost. Hence, what we know about them derives from statements about them by Plato and Aristotle. However, a late Ionian thinker by the name of Heraclitus distinguished himself from other Ionian scholars by his propensity for debate and controversy.

Heraclitus held a belief in the unity of opposites – the notion that all things come into being through a conflict of opposites – and that change is the true nature of things. According to Heraclitus, nothing would exist without change, while stability in the sense of a lack of change is tantamount to death and non-existence. Heraclitus' followers were known as the Sophists, who took doubt to its ultimate extreme. Consequently, Heraclitus is considered the forefather of skepticism in Greek philosophy.¹⁵

Before the days of Socrates, a prominent community of Greek philosophers gathered around a renowned teacher by the name of Pythagoras (572–497 BC). Therefore they came to be known as the Pythagoreans. The Pythagoreans are credited with having founded the science of Mathematics. In addition to Mathematics, however, they concerned themselves with astronomy, music and medicine, considering that the most significant traits that characterize this world are order and proportionality. According to the Pythagoreans, numbers and harmony constitute the true nature of existent entities. The Pythagoreans propounded the view that the Earth is round, and that it revolves in an orbit around a centralized fire.¹⁶

Another philosopher of the same period was Democritus (470–361 BC), who rethought natural science. According to Democritus, existence is essentially material in nature, and bodies consist of infinitesimal, indivisible material particles (atoms). Between these atoms there is a void out of which other bodies emerge. Atoms are in constant motion, colliding and parting in a process that accounts for the various changes in visible objects. Democritus held that the most simple of all entities is the individual essence, or the indivisible part, that the essences and the void are truly existent, and that they are the sole object of knowledge.¹⁷

It will be noted that the topic of research is what governed the general framework for research methods and ways of thinking in the various phases of Greek history. In the beginning, research moved in the direction of studying the visible aspects of the natural world. The Ionians, the Pythagoreans, Heraclitus and others focused on the basic material component of the cosmos, the things of nature and the changes they undergo. Hence, it should come as no surprise to find

that the research activities of that early period were governed by the natural method.

The Sophists' Rhetorical, Dialectical Method

In the fifth century BC the Athenians managed to rout the Persians and regain their independence. Consequently, they achieved sufficient stability to allow for the spread of culture and education. Competition among individuals and groups increased, political and judicial debate flourished, and there emerged a need for oratory, methods of argumentation, and techniques for winning over one's audience. Certain members of the intelligentsia who worked to develop their rhetorical skills were known as Sophists. The term "Sophist," derived from the Greek *sophizesthai*, "to become wise or learned," came to mean "someone who gives intellectual instruction for pay" in this or that science, discipline, or craft. However, it was used most frequently to refer to a teacher of rhetoric in the positive sense of the word. Nevertheless, the Sophists specialized in debate and in marshalling arguments, often specious ones, of relevance to the various questions, issues and situations of the day, and in the use of means of persuasion and rhetorical effect without any real concern for the truth as such. They restricted their efforts to an examination of terms, their meanings, types of issues, arguments and their conditions, and means of perfecting fallacious arguments. They debated well-known philosophical schools, mocked both reason and religion alike, and glorified power and dominance.

Most of Aristotle's trusted works have been compiled, translated into English, and published in a single 1,488-page volume. Beginning with the six books of the *Organon* (Aristotle's logical treatises), the volume includes *Physica* (On Physics), parts of *De Caelo* (On the Heavens), *De Generatione et Corruptione* (On Generation and Corruption), *De Anima* (On the Soul), *De Memoria et Reminiscentia* (On Memory and Reminiscence), *De Somniis* (On Dreams), *Historia Animalium* (The History of Animals), *De Partibus Animalium* (On the Parts of Animals), *De Generatione Animalium* (On the Generation of Animals), *Metaphysica* (Metaphysics), *Ethica Nicomachea* (Nicomachean Ethics), *Politica* (Politics), *Rhetorica* (Rhetoric), and *De Poetica* (Poetics). See Richard McKeon (ed.), *The Basic Works of Aristotle*, New York: Random House, 1941.

The Sophist method and its adherents came to be viewed with contempt after Socrates and his disciples took them on. One of the best-known Sophists was Protagoras (480–410 BC), who was quoted by Plato as saying that “of all things the measure is man, of the things that are, that [or “how”] they are, and of the things that are not, that [or “how”] they are not.” In other words, the truth about things is relative to the individual observer, things are in constant flux, and there is no absolute truth or error.¹⁸

Aristotle’s Logic, or The Organon

There are a considerable number of Greek sages and philosophers, such as Socrates, Plato, and Pythagoras, whose thought has had lasting effects on the human experience down the ages. However, of all Greek philosophers and thinkers, Aristotle (384–322 BC) may well be the most mature, and the one who has most profoundly influenced Western thought and human thought overall, especially with respect to the development of methods of research and investigation in philosophy and the sciences.

Aristotle’s contributions span a wide variety of fields, including ontology, ethics, politics, natural science, and metaphysics. All of Aristotle’s works were marked by a peculiar manner of reasoning which came later to be known as Aristotelian logic, and which rests fundamentally on the method of analogical reasoning. Some researchers maintain that Aristotle’s legacy has been badly misunderstood by its expositors, whose critics accuse them of having neglected Aristotle’s interest in induction and empirical observation. Nevertheless, the impact left by Aristotelian studies is such that “reading Aristotle is tantamount to gaining an understanding and awareness of the foundation of Western thought in its entirety.”¹⁹

The six treatises of Aristotle dealing with method and logic have been gathered into a single book known as the *Organon*. The six treatises contained in Aristotle’s *Organon* are: “Categories,” “On Interpretation,” “Prior Analytics,” “Posterior Analytics,” “Topics,” and “On Sophistical Refutations.”²⁰ The Greek word *organon* means “organ, instrument or tool”; hence, the title of this work, which deals

with instruments or tools of thought which serve to protect reason from error. In his introduction to *The Basic Works of Aristotle*, editor Richard McKeon states:

The influence of Aristotle, in the first sense as initiating a tradition, has been continuous from his day to the present, for his philosophy contains the first statement...of many of the technical distinctions, definitions, and convictions on which later philosophy and science have been based....Much of the history of civilization in the West can be, and indeed has been, written in the form of a debate in which the triumph of Aristotle in the thirteenth century and the defeat of Aristotle in the Renaissance indifferently herald great intellectual advances.²¹

Abd al-Rahman Badawi notes that the Arabs became familiar with Aristotle exclusively through his *Organon*, as a result of which “they grew accustomed to referring to him simply as ‘the master of logic.’”²²

The European Cultural Hiatus and the Emergence of Islam

The Roman Empire fell heir to the rich intellectual, rhetorical and philosophical legacy of the Greeks. However, the Romans became preoccupied with military adventures both within and without Europe's borders, thereby plunging Europe into a phase of intellectual and cultural decay. This decay accelerated after 285 CE, at which time the Roman state was partitioned into a Western Roman Empire and an Eastern (Byzantine) Roman Empire under Diocletian. Rulers of both Eastern and Western empires instated dictatorial feudal regimes; nor did Christianity's entrance onto the European scene do anything to improve matters, since both rulers and nobility allied themselves with the Church, while the Church adopted Aristotelian logic in its interpretation of religious texts. Research and rational exchange accordingly ground to a halt, and Europe drifted into a sound cultural slumber.

This same period of time witnessed the birth of Islam, which created a stable society which occupied the Levant, Iraq, Persia and Egypt, regions that had previously been home to ancient civilizations. Islam was marked by a positive attitude toward reason and the pursuit of knowledge, stressing the importance of reflection on the created

universe and the laws and patterns established by the Creator in objects, events, and natural, psychological and social phenomena. Muslim scholars benefited from the new spirit of liberation in the realms of research and discovery, and drew on existing knowledge by familiarizing themselves with the sciences established by their predecessors from India, Persia and Greece. Most of the Greek legacy was translated into Arabic, and schools and universities were founded [in the Arab-Muslim world]. Europe awakened in the midst of this cultural advance, which had reached it via a variety of channels, including direct contact with the Arab-Muslim world during the Crusades, and cultural exchange in Sicily and Andalusia. Europeans began acquainting themselves with the ancient Greeks' contributions by reading Arabic and Syriac translations of their works. In consequence, they became aware of the methodological developments related to induction and experimentation undertaken by Muslim scholars, particularly in the fields of astronomy, geometry and mathematics. This new awareness contributed significantly to subsequent religious reform movements, and served as a powerful impetus toward more research and experimentation by scholars and scientists. Despite the fierce resistance with which renewal and reform movements were met in Europe's Middle Ages, European societies began in the sixteenth century to witness major achievements in the realm of scientific discovery and industrialization. Such achievements enabled the Europeans to acquire forms of power and mobility which they quickly put to use in colonizing most of the old world (Africa, Asia and Europe) in addition to the discovery and occupation of the Americas.

As will be seen shortly, the history of Europe witnessed a number of important way stations in the evolution of methods in Western thought, including the efforts of thinkers such as Francis Bacon, René Descartes, Augustus Comte, Emile Durkheim, and the post-modernist movements.

Francis Bacon and the New Organon

Francis Bacon (1561-1626 CE) was an English philosopher who lived during a period of Europe's history in which the Greek philosophy

founded upon debate and abstract thought was prevalent. During this period numerous scientific discoveries and inventions were made. These include William Harvey's (1578-1657) discovery of the circulatory system, Robert Boyle's (1627-1691) experiments with air pumps, William Gilbert's (1544-1602) experiments in magnetism, the invention of typing, the compass and the rifle, etc. This intellectual atmosphere so strongly committed to the use of scientific and technical tools, as well as the vast variety of experiments being performed on nature, had the effect of moving Bacon decisively away from metaphysics and toward the pursuit of a scientific knowledge that would contribute to the control and domination of nature through the use of the scientific method based on practical experimentation and problem solving. Bacon took the title for his book *The New Organon: or True Directions for the Interpretation of Nature* from Aristotle's *The Organon: The Instrument for Rational Thinking*.

Bacon stressed the need for the progression of science at a time when Aristotle's logic was proving woefully inadequate to this task in the new era. Consequently, *The New Organon* proposed a system of thought that went beyond that of Aristotle, and which was better suited to the progression of knowledge in the scientific era. Where Aristotle's system of argumentation relied on analogical reasoning and was capable of deriving consistent outcomes logically from basic premises, Bacon's logic was designed to inquire into the basic premises themselves. And whereas Aristotle's logic presupposed certainty by relying upon non-negotiable assumptions whose validity could not be questioned, Bacon proposed an inductive system of argumentation that relied on inquiry into the basic evidence found in the natural world. In Bacon's system, the researcher into the sciences gradually moved from basic data which he had compiled by dint of ongoing effort through the use of "the new organ" toward higher levels of probability.²³

Bacon severely criticized Aristotelian syllogisms, which had led to intellectual stagnation and hindered scientific progress by restricting scientists' freedom to engage in fresh, creative research. In Bacon's system, the process of scientific logic begins with induction and scientific experimentation by means of which the facts are discovered. It then goes on to trace these facts back to universal principles through

the use of Aristotelian logic. The facts are then recorded and conveyed to others through the use of explanatory methods and techniques.

Bacon's logic is divided into two parts. The first part, which is negative, undertakes to deconstruct "illusions" which "block men's minds," preventing them from arriving at the truth. So attached are people to these illusions and so influential are they over their thinking that Bacon refers to them as "idols," of which he identifies four kinds, namely, "idols of the tribe," "idols of the cave," "idols of the marketplace" and "idols of the theatre."²⁴ The second part, which is positive, is a new system capable of discovering the facts as they are. It is a system based on induction, scientific experimentation, and its applications to a number of research topics such as heat, motion, light, scents, power, and others.

René Descartes and his Discourse on Method

René Descartes (1596-1650 CE) was a French philosopher who had been educated in a number of different European countries at a time when the system of logic founded on the Aristotelian syllogism held sway over thought in Europe's religious establishment. So attached was the Church to the Aristotelian system that it would prosecute any scholar who dared to cast doubt on the theories supported by Aristotelian logic, including theories that were purely scientific in nature. Descartes was not satisfied with the Aristotelian education he had received in school, and felt that the knowledge he had acquired lacked consistency and certainty. He noticed that of all the sciences he had studied, mathematics alone was characterized by certainty and precision, and he began wondering how he might develop sciences that were as consistent, unified, and certain as mathematics.

Descartes felt powerless and frustrated due to his inability to formulate a new intellectual scheme that would serve as a solid foundation for all of the sciences. Despite his orderly vision and his earnest striving, he despaired of achieving the goal he had set for himself. Nevertheless, after years of hopelessness, confusion and raucous living, he decided to give up his various preoccupations in life and devote himself entirely to accomplishing the task he had envisioned. He then

proceeded to write his *Discourse on Method and Meditations on First Philosophy*.²⁵ The book consisted of six parts. Part I dealt with a number of considerations relating to philosophy, religion, and the sciences. Part I treated the principles and foundations of the method the author had set out to formulate. Part III treated certain ethical rules derived from his method. Part IV set out to prove the existence of God and the human spirit. Part V was devoted to questions of physics, the movement of the heart, and certain issues relating to medicine and the difference between human beings and animals. And Part VI discussed the requirements of achieving progress in research into nature, and the reasons he had decided to write his book.

In Descartes' view, the Aristotelian method based on syllogisms was incapable of generating new knowledge and, therefore, fruitless. At the same time, Descartes held that experimental induction which relies on sensory experience, and which Francis Bacon had formulated as an alternative to Aristotelian logic, would not lead to coherent, certain knowledge. As for the method which Descartes formulated, it began with doubting the validity of people's beliefs, which consist in mere illusions to which they cling by virtue of what they have grown accustomed to without serious consideration, and by virtue of their unthinking imitation of others. He stated, "I learned not to believe anything too firmly of which I had been persuaded only by example and custom; and thus I little by little freed myself from many errors that can darken our natural light and render us less able to listen to reason."²⁶

Descartes' method is based on four principles. The first principle is never to accept as true anything that one does not know to be such, and to avoid biased or hasty judgments. In addition, one should make certain that there is no reason to doubt something's truth or validity. The second principle is to divide each difficulty into as many parts as possible so as to facilitate its resolution. The third principle is to conduct one's thoughts in an orderly fashion, beginning with those objects that are simpler and easier to know "in order to ascend little by little, as by degrees, to the knowledge of the most composite things." And the fourth principle is to go back and make certain that there is no aspect of the difficulty concerned that one has failed to make note of and investigate.²⁷

Comte, Descartes and the Positivist Method

Despite the fact that the eighteenth and nineteenth centuries were largely colored by scientific discoveries relating to matter and nature, this period of history also witnessed major developments in the establishment of the social and human sciences, whose pioneers attempted to apply the experimental scientific method to the social sciences. French philosopher August Comte (1798-1857) is credited in the West with founding the discipline of sociology as well as the doctrine of positivism, which rejects all supernatural and metaphysical dimensions. Positivism reinterprets the evolution of human thought and the search for truth in keeping with the “law of three stages.” These three stages are: (1) the theological, (2) the metaphysical, and (3) the positive. In the theological stage, religious thought develops from idol worship, to polytheism, to monotheism. In this stage, human reason is dependent on superstitious and mythological interpretations. In the metaphysical stage, which is more mature than the theological stage, reason seeks explanations in abstract or symbolic forces. In the third, positive stage, human reason does not ask why phenomena occur; rather, it asks how they occur with reliance upon the precise description of “objective” events and cases through which it can discern relationships and derive scientific laws that explain all phenomena, natural and social alike.

No less important to the formulation of positivism was the contribution of Émile Durkheim (1858-1917 CE), who, in his book entitled *Rules of Sociological Method*, argued that sociology is a discipline which is subject to the positive method just as other sciences are. Durkheim formulated the science of socialism on the basis of three assumptions. The first assumption is the unity of nature, the second is that social phenomena are part of the objective world of nature, and the third is that these phenomena are subject to natural laws and principles and can therefore be studied in accordance with the scientific method based on induction and experimentation.²⁸

Modernism and Post-Modernism

Between the Age of Enlightenment (beginning in the mid-seventeenth

century) and the mid-twentieth century, the Western world passed through a historical phase in which a set of beliefs, customs, attitudes and intellectual orientations now referred to as “Modernist” held primary sway. This Modernist period was marked by an absolute confidence in the powers of human reason, and the clear emergence of scientific and technological progress. Western society and culture were largely colored by secularism during this period, with the Christian religion losing confidence in its ability to cope with the real world’s day-to-day challenges. Three forms a new religion thus began to emerge. The first of these was faith in a creator God who has nothing to do with the affairs of the universe He made. The second was an individualist piety accompanied, in a rather schizophrenic manner, by intense interest in worldly affairs. And the third was a kind of defensive isolation. These phenomena taken together yielded a situation in which the religious dimension of life in Western society reached a very low ebb.²⁹

Some modernist intellectual trends and schools of thought turned into philosophical frameworks and worldviews that gave rise to specific research methods. Scientific rationalism, which emerged in the seventeenth century and took a leading role in the eighteenth century, supplanted metaphysics and religion. Scientific rationalism formulated a secular positivistic philosophy that touted the unlimited potentials of science and the scientific method and human beings’ ability to achieve total control over nature. Scientism³⁰ became a cult of sorts with all the features of a religious sect. Such currents gained additional strength with the transformation of the theory of biological evolution into a philosophical school that proclaimed the continuation of human evolution and progress in a never-ending upward trajectory. Among the dangers of this school of thought was that it justified ethnocentrism and saw war as a law of social life justified by natural forces rather than being a result of people’s choices.

Yet even with their rosy optimism, these intellectual currents could not prevent currents of another sort from making their appearance on the European stage. Hence, the eighteenth and nineteenth centuries witnessed the emergence of pessimistic thought trends whose adherents believed that scientific progress had created a bourgeois ideology

that had robbed people of certain aspects of their humanity by exalting reason and neglecting intuition, sentiment and emotion. Rationalism thus triggered a backlash in the form of Romanticism, which in turn led to the emergence of psychoanalysis with its emphasis on the subconscious. Marxism erupted in partial response to Capitalism, Nietzsche brought nihilism, Sartre brought existentialism, and Oswald Spengler launched an assault on Eurocentrism, declaring that European civilization would collapse just as civilizations before it had done.

Exercise

Design a chart showing the various stages of the evolution of methodology in Western thought and their intellectual premises.

The spirit of pessimism developed into “ascientific” methods and approaches that purported to represent “the new science” as an alternative to the science associated with modernism. This “new science” has found expression in a variety of currents, schools of thought and methods, all of which fall under the rubric of what has come to be known as “postmodernism.” Postmodern thought trends reflect a shared belief that the modernist enterprise suffered from serious defects. Some pioneers of postmodernism focus on the philosophical priority given by modernism to reason centered around the self; others focus on critiques of its moral relativism, while still others highlight the harmful effects of the rationalism that led scientific and technological progress. Academic circles over the past several decades have observed a host of research methods in the humanities, and particularly in the field of sociology, associated with postmodernist philosophical currents such as structuralism, hermeneutics, deconstructionism, formalism, phenomenology, and others.

***Third: THE RELATIONSHIP BETWEEN THE CONCEPT
OF METHODOLOGY AND THE EVOLUTION OF
SCIENTIFIC FIELDS IN ISLAMIC AND
WESTERN HISTORY***

The concept of methodology in the history of Western thought has been linked primarily to the natural sciences, whereas in the history of

Islamic thought it has been linked for the most part with the sciences dealing with divine revelation. In the West, science has been viewed primarily as a discipline that examines natural substances and phenomena, while the method used by scientists was the scientific method, or more specifically, the experimental scientific method. Most Western historians of science hold that experimental science began in Europe, where it grew and evolved before spreading to North America. It was this science that led to the West's being the geographical locus of the industrial, technological and information revolutions. Nevertheless, one does find historians of science who give credit to other peoples, particularly in the Eastern world, which witnessed the birth of civilizations whose impact on the evolution of the natural sciences would be difficult to ignore. Yet despite this acknowledgment, the discussion remains restricted to the history of the natural sciences alone.

From the Islamic perspective, by contrast, the concept of science has to do with the evolution of human perceptive capacities in all areas of life, including the material, the social, the psychological and the spiritual. The authoritative point of reference for this perspective is the divine revelation, which relates chapters from the story of humankind's evolution in its earliest stages. These chapters make clear that from the time when human beings were first created they have been equipped with the capacity for reflection, thought, and experimentation. In keeping with the divine wisdom, human beings have also been equipped with the understanding and knowledge they need in order to function as God's *khalifah* on earth. God declares, "Yea, indeed, [O men,] We have given you a [bountiful] place on earth, and appointed thereon means of livelihood for you: [yet] how seldom are you grateful!" (*sūrah al-A'raf* 7:10). God in His wisdom has subjected the earth and everything in and around it to His dominion. As a result, cosmic phenomena take place in an orderly fashion. The laws that govern such phenomena are orderly as well, a fact which makes it easier for human beings to discover them and put them to use. We read in the Qur'an that, "And He has made subservient to you, [as a gift] from Himself, all that is in the heavens and on earth; in this, behold, there are messages indeed for people who think!" (*sūrah al-Jāthiyyah* 45:13). The ability to perceive these realities is a God-given capacity. However, this

capacity has grown and developed thanks to the guidance and instruction brought by the prophets, as well as human experience in dealing with and perceiving the links between objects, events, and phenomena in their material, social and psychological dimensions.

One of the first scenes in the story of human beings' creation is the one in which God teaches Adam the names of things, a process by virtue of which Adam is shown to have been given preference over the angels themselves: "And He imparted unto Adam the names of all things; then He brought them within the ken of the angels and said: 'Declare unto Me the names of these [things], if what you say is true'" (*sūrah al-Baqarah* 2:31).³¹ Another situation in which direct instruction took place was the one in which God sent a crow to teach Adam's son through a practical demonstration: "Thereupon God sent forth a raven which scratched the earth, to show him how he might conceal the nakedness of his brother's body..." (*sūrah al-Mā'idah* 5:31). Another instructional situation is found in the story about Noah's building of the ark. It was God who taught Noah the scientific principles necessary for the completion of this task, as well as their practical applications. Then Noah carried out the task under God's direct supervision. God said to Noah, "but build, under Our eyes and according to Our inspiration, the ark [that shall save thee and those who follow thee];..." (*sūrah Hūd* 11:37). It was God Almighty who showed Abraham the kingdom of the heavens and the earth as he looked about and observed natural phenomena. God says, "And thus We gave Abraham [his first] insight into [God's] mighty dominion over the heavens and the earth – and [this] to the end that he might become one of those who are inwardly sure" (*sūrah al-An'ām* 6:75). After granting Abraham this insight and guidance, God commanded him to build in Makkah the first edifice that had ever been constructed on earth for the worship of the one God.

Since the days of Adam, individuals have needed a relatively long time to reach maturity and become capable of bearing responsibility. During this period of instruction and growth, the individual makes use of his God-given instruments of hearing and sight, mind and heart. The data, information, and experiences received via the senses then become the subject of contemplation and reflection. Language, for

example, is acquired gradually through a kind of osmosis from the social environment in which the individual lives. Language thus becomes the individual's natural means of communicating with others in his social milieu. No one who has lived his or her entire life in an environment devoid of linguistic interaction with human beings will be able to acquire language, a fact which has been demonstrated through documented cases of children who have grown up in isolation from other human beings.³² Similarly, there is evidence to confirm that twins who have been raised in separate environments have acquired different languages, customs, and religions.³³

As the first, newly created human being, Adam had no opportunity to learn things gradually and by osmosis, as it were. Nor was he a child who would need to spend time being prepared to understand the meanings of events and phenomena. Rather, he had been created as a fully developed adult who was capable of understanding and perceiving, and God Almighty had provided him with the knowledge he would need in compensation for what he lacked by way of family and community. Perhaps this is part of the meaning of God's statement that He "imparted unto Adam the names of all things..." (*sūrah al-Baqarah* 2:31).

Numerous layers of meaning are conveyed by God's statement that He "imparted unto Adam the names of all things."

Religious texts that speak about the origins of humanity testify that from the time when human beings were created they were capable of learning, and that whenever they lost their way or forgot what they had learned, God Almighty would send them messengers and prophets to carry on with the process of instruction and reminder. What we know of human history and the evolution of civilization bears witness to this process. Meanwhile, individuals are born without any type of knowledge whatsoever, after which they begin instinctively at an early age to record the impressions gleaned from hearing, sight, taste, touch, and smell. These impressions and expressions are then organized into what we might describe as realization and consciousness. Unlike other creatures, human beings are able to communicate about their

experiences through speech and to record them in a variety of ways, thereby enabling them to pass them from one individual to another, from one generation to another, and from one people or nation to another. It is in this way that cultures and civilizations are formed and perpetuated.

Our God-given instincts, propensities and faculties combine with both the inborn and acquired use of the tools of consciousness and understanding (such as the sense of hearing, sight, and intelligence) to construct methods of thought, research and practice that can help us find answers to our questions and, in so doing, influence our decisions and behavior. Methodology is certainly no newcomer to the human scene; on the contrary, it comes naturally to human beings as entities created purposefully by God and appointed to be God's *khalīfah* on earth. Methodology is a cognitive process peculiar to rational beings, and a practice which is necessary for the continuation of life in all its dimensions.

Methodology in the thought and life of humankind

- a natural instincts,
- a rational property,
- and a practical necessity.

Methodology is a historically recognized phenomenon of which we have written records. Such records bear witness to the ways in which the ancients of various civilizations dealt with the worlds of things, people, and ideas. The remnants of ancient civilizations in China, India, the Fertile Crescent, Pharaonic Egypt, and South America testify to remarkable degrees of development in mathematics, geometry, astronomy, architecture, agriculture, medicine, mining, and the manufacture of tools and instruments required for observation, arithmetical calculations, time measurements, medical treatment, excavation, inscriptions, drawing, and other undertakings that would be easily recognizable to historical museum goers.

Our purpose in linking the concept of methodology with the evolution of the various sciences has been to show that in the sphere of human endeavor, it is difficult to distinguish one realm that is natural

and material, a second that is social and human, and still another that is spiritual, psychic and emotional. Indeed, the individual human being is a composite entity composed of reason or mind, spirit, and body, while human populations consist of networks of relationships involving cooperation among families, tribes, peoples, societies and states for the purpose of providing life's necessities such as food, clothing and shelter. Such necessities led to the invention of tools for agriculture, industry, trade, transportation and communication. Such tools were then developed and improved from one age to the next thanks to the combined efforts of scientists from a variety of specializations.

In sum, methodology did not simply spring up suddenly in the context of modern civilizations; nor is it the exclusive product of a particular community or people or a particular era. Every community and nation is entitled to search in its history for the ways in which it has contributed to the development of science and civilization, and to take pride in these contributions. However, it should not, in the process, gainsay the equally significant contributions made by other communities or nations.

CONCLUSION

Every discovery undoubtedly leads in some way or other to those that succeed it, just as later discoveries are dependent on those that preceded them. In fact, all experiences, even negative ones, have some value in guiding human thought toward that what more beneficial and closer to the achievement of its aims.

Nevertheless, the history of humankind has had its ups and downs, and human civilizations have differed from place to place and era to era. Although the divine providence has provided us with apostles and prophets to guide us and draw us away from many a deadly precipice, we have quickly forgotten what we were taught, and lost our way anew. For not long after a prophet leads his people to the worship of the one true God and to the establishment of a society founded on the principles of justice and virtue, you find them drawing pictures of their prophet and chiseling idols in his image to remind themselves of what he did for them. Then they forget the prophet himself and the idol

remains. Common sense might lead us to realize the impotence of our idols and the absurdity of worshipping them in our search for the Deity we have lost sight of during times when no prophet has been sent. Yet we still have no compunctions about representing this Deity in the form of a planet, a river, or a cow!

Magical rites may have been a manifestation of the mythical, meta-physical stage of this or that people's evolution. However, we still see peoples in the present day who celebrate rites no less magical, albeit with the use of tools and gadgets proper to the twenty-first century – satellite channels, websites, newspapers and forums. The peoples of the world have not followed the same path in their various communities and environments. In fact, even within the same community you find some individuals, groups and classes adhering to one way of thinking, while other individuals, groups and classes adhere to a way of thinking that differs entirely. Similarly, we might see a member of a modern-day community practice his or her profession in a perfectly orderly and scientific manner only to find that when he goes home, he believes in the same groundless superstitions that prevail in the rest of his community.

Human knowledge originated as a gift from God Almighty by means of which God distinguished human beings from other creatures. When God “imparted unto Adam the names of all things,” He gave him the ability to acquire knowledge from its two sources (divine revelation and the created universe) by means of its two instruments (reason and sensory perception). Some writers portray the evolution of research methods as a steadily upward progression. However, the truth is that in every stage of their evolution, human beings have used a variety of methods and means of acquiring knowledge. Adam's first son received some knowledge directly from his father, who in turn had received knowledge from God Almighty. Yet, when he killed his brother, he did not know what to do with him. In this situation, a raven taught him by example how he needed to comport himself in that situation: “...[And Cain] cried out, ‘Oh, woe is me! Am I then too weak to do what this raven did, and to conceal the nakedness of my brother's body?’ – and was thereupon smitten with remorse” (*sūrah al-Mā'idah* 5:31).

The nations of the world make use of the knowledge available to them in proportion to the degree of advancement they enjoy. When a nation is in a state of backwardness, it fails to realize the value of the cultural heritage it possesses, and is thus unable to employ it to its best advantage. This is the situation in which Europe found itself during its Dark Ages (approximately 500–1000 CE) following the collapse of the Roman Empire both East and West. The nations of Europe failed to see the value of the rich Greek heritage to which they had fallen heir in the fields of medicine, mathematics, philosophy, geometry, literature and poetry. When, by contrast, the Muslims found themselves in a position of cultural ascendancy, they saw the value of what they had at their disposal, as well as the knowledge possessed at that time by the Europeans, Indians and others. Hence, they quickly set about to transfer this knowledge to themselves through translation and other means. They sifted through the scientific works that had come into their possession, bringing things to light, editing the texts in their possession, accepting some things and rejecting others, developing and modernizing. When, on the other hand, the Muslims found themselves in a state of backwardness, they were unable to make use of the legacy they had received from their forebears, and failed properly to appreciate the value of the achievements their scholars had made in earlier times. Later, when fortunes changed and Europe has its awakening, the European nations realized the value of the Greek heritage the Muslims had given humanity through their efforts. They also discovered the pioneering developments the Muslims had achieved in the various scientific disciplines, whereas the Muslims themselves were unable to make use of these very same achievements during the time of their own backwardness.

Therefore, it comes as no surprise to find that some of the Muslims' greatest achievements have come to our knowledge through Westerners' discoveries of them. One major Muslim figure whose importance has been brought to light by the West is Ibn al-Haytham (d. 432 AH/1040 CE), who is known to have written upwards of two hundred books in various scientific fields. He is also known for his precise and thorough formulation of the experimental scientific method based on observation, experimentation and proof. Another is Ibn Khaldūn

(d. 808 AH/1406 CE), a pioneering thinker who provided us with crucial keys to the social sciences as they relate to politics, the economy, development, education and psychology. Ibn Khaldūn's greatest contribution in the area of research methodology and ways of thinking lies in his emphasis on the importance of practical, concrete experience (empiricism) for acquiring an understanding of the defining characteristics of things, social laws, and principles of causality.

However, as was pointed out earlier, a comparison between Muslims' own critiques of the Prophetic Sunnah and those undertaken by Orientalists who have attempted to study the hadiths reveals a fundamental, and essentially irreconcilable, difference in approach or method, with the Islamic method being founded upon religious faith, and the Western method being based on a secular, materialist critique of history.³⁴