

Qur'anic Prerequisites for Developing Scientific Mind

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Abstract

Islamic science has a glorious past and it successfully contributes to the development of modern science. The emergence, developments and accomplishments of Islamic scientific trend are traced back to the advent of Islamic era when human mind had been radically reformed, and transformed from its irrational and superstitious tendency into a scientific nature. There are overwhelming emphases given in the Qur'an on shaping a scientific mind. In order to achieve this aim, the Qur'an follows many unique methods, such as denying supposition in the place of conviction, disobeying caprice and emotions in place of knowledge, discouraging blind imitation of forefathers and chieftains, developing consciousness, employing deductive reasoning, approaching the doctrine of cause and effect, posing enlightening questions, developing deep and critical thinking instead of superficial outlook. However, in the context of modern approaches of shaping the scientific mind, the three approaches of the Qur'an namely; making mind conscious, developing capacity of objective judgment and conscious reasoning should be scrutinized and researched.

Keywords: Qur'anic Prerequisites, Islamic sciences, The Qurān, Knowledge, Scientific Mind

Abstrak

Sains Islam mempunyai sejarah gemilang dan ia berjaya menyumbang kepada pembangunan sains moden. Kemunculan, perkembangan dan pencapaian trend sains Islam dijejaki di era kemunculan Islam apabila minda manusia telah diperbaharui secara radikal, dan berubah daripada kecenderungan yang tidak rasional dan khurafat kepada sifat sains. Terdapat penekanan hangat yang diberikan di dalam al-Quran bagi membentuk minda yang saintifik. Untuk mencapai matlamat ini, al-Quran mengikut banyak kaedah yang unik, seperti menafikan sangkaan di tempat sabitan, mengingkari kerendah dan emosi di tempat ilmu, tidak

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menggalakkan tiruan yang buta nenek moyang dan ketua-ketua, membangunkan penyedaran, menggunakan penaakulan deduktif, menghampiri doktrin sebab dan akibat, menimbulkan soalan yang memberikan penerangan, memperkembangkan pemikiran yang mendalam dan kritikal dan bukannya pandangan cetek. Mengambil kira bahawa ini dunia moden, karya ini berniat untuk menerokai dan menyelidik cara-cara baru bagi membentuk minda saintifik selaras dengan prinsip-prinsip yang dinyatakan dalam al-Quran, iaitu bagaimana untuk membuat minda sedar, membangunkan kapasiti untuk penghakiman objektif dan kesedaran penaakulan.

Kata Kunci: Prasyarat al-Quran, Sains Islam, Al-Qurān, Ilmu, Minda Saintifik,

Introduction

The overall plan revealed in the Qur'an is to guide mankind to the right path and to ultimate Reality. In materializing this plan, it finds the human mind as a tool or means. While this tool is promoted to scientific stage, the very plan is successful. In contrast, if human mind fails to reach the scientific stage, it often results in mental stagnation, superstitious practices, blind imitation, meaningless and irrational exercises. The Qur'an however aims to liberate mind from these harmful attributes and enlightens it with empiricism, rationality and logical methodology so that it can see the reasonableness of belief in Allah and following His guidance in this earthly life. The Qur'an addresses the human mind in a very systematic, rational, persuasive manner encompassing the entire gamut of human activity and providing the framework within which the human mind and its potential could be exercised to the full extent. This could widely be seen when the Qur'an devotes about one-third of its verses to describe the virtues of reason and scientific inquiry, and when reason and revelation are considered complementary to each other and integrated methods for the pursuit of truth. However, there are a number of approaches to developing scientific mind but this study highlights only three important approaches. The first is awakening the human mind from heedlessness (*ghaflah*) to consciousness. Heedlessness is a cognitive disease that destroys the wakefulness and capacity of right judgment. Unlike that, consciousness is an aware state of mind that prevents mind from being insensible and keep wakeful

which is a cornerstone for making mind scientific. The second is liberating mind from blind imitation and teaching it the method of objective judgment. The Qur'an finds that blind imitation turns human mind to stagnation and kills creative reasoning and objective judgment. Thus, it directs human mind to use a proper method of evaluation and judgment which is a key object to science. The third is promoting the mind from conjectural stage to conscious reasoning. The Qur'an categorically defines that conjecture is no substitute for the truth. The truth could be reached only if reasoning follows the right track. Thus, the Qur'an specifically and repeatedly asks mankind to investigate systematically the natural phenomena, and explore the mysteries buried deep in the bosom of nature. These three fundamentals of the scientific mind in the Qur'an are also popularly discussed in modern scientific tradition.

The Definition of Scientific Mind

“Scientific mind” has become a frequented term in modern physiology. The imprints of scholars' indefatigable attention to this topic could be traced back to the ancient time. But after modern scientific revolution, this term has drawn a fresh attention of the contemporary scholars of this field. However, as a preamble of this research, it is attempted to define this term of the Arabic origin along with non-Arabic. In Arabic, the equal for this term is “*al-'aqlīyyah al-'ilmīyyah*”. Searching the Arabic root of this term is necessary because it could facilitate exploring its Islamic root. However, the general definitions of this term will not be ignored. It thus firstly focuses on the definition of science and subsequently on mind from the Islamic and general point of view.

Science Defined

The English term “science” is a translation of the Greek *epistēmē*, the Latin *scientia*, and the Italian *scienza*, and in those forms it occurs frequently throughout the Renaissance. For Aristotle (384-322 B.C.), *scientia* designated a type of perfect knowing, the attainment of knowledge that is certain and unchanging. He asserted that one obtained such knowledge of any object when one knew its cause, that this cause made the object be what it is, and therefore that the object could not be otherwise. In this sense science was true and necessary, not open to radical

revision.¹ Even in writings as recent as those of Locke and Hume the words “science”, “scientific” etc. are reserved for knowledge of what is necessarily the case. Such knowledge is acquired by rational intuition or by demonstration.²

The classical definition of science is simply the state of “knowing” — specifically theoretical knowledge as opposed to the practical knowledge. In the Middle Ages the term “science” came to be used interchangeably with “arts,” the word for such practical knowledge. Thus, “liberal arts” and “liberal sciences” meant basically the same thing.

Modern dictionaries are a bit more specific than that and offer a number of different ways in which the term science can be defined:

- The observation, identification, description, experimental investigation, and theoretical explanation of phenomena.
- Methodological activity, discipline, or study.
- An activity that appears to require study and method.³

Science refers to a system of acquiring knowledge. This system uses observation and experimentation to describe and explain natural phenomena. The term science also refers to the organized body of knowledge people have gained using that system. Less formally, the word science often describes any systematic field of study or the knowledge gained from it.⁴

However, in Islamic tradition the word science is translated from the Arabic term “*al-‘Ilm*” which is defined by the Muslim scholars as the following:

Al-Jurjānī, in his book *al-Ta’rīfāt*, mentioned several shades of meaning of the term “*‘ilm*: science (*‘ilm*) is the firm conviction which is compatible with the reality; gaining picture of something in mind; perception of something as it is; opposite to ignorance; a supreme virtue by which maxims and particulars could

¹ William A. Wallace, “Science”, in *Encyclopedia of the Renaissance*, ed. Paul F. Grendler (New York: Charles Scribner’s Sons, 1999), vol. 5: p. 427

² Thomas Mautner, *A Dictionary of Philosophy* (USA: Blacwell Reference, 1996), p. 388

³ Austin Cline, Defining Science in a Scientific, Technological Age. <http://atheism.about.com/od/philosophyofscience/a/sciencewhat.htm>, retrieved on 20/04/11

⁴ <http://www.sciencemadesimple.com/science-definition.html>, retrieved on 20/04/2011

be known; and the reach of human psyche to the meaning of something.⁵

Abū Hilāl al-‘Askarī says: science is a conviction of the reality of a thing with conformity.⁶

Al-Rāghib al-Isfahānī says: science is an understanding the reality of an object.⁷

Al-Kūfawī says: science is a comprehension; it is acquisition of a virtual image of something in mind, a firm conviction and a comprehensive understanding.⁸

Al-Ghazālī says: science is knowledge of object as it is.⁹

Scientific knowledge is the knowledge of whatness (*māhiyah*) of the “thing”, its intrinsic properties (*muqawwimāt*), or the thing-in-itself. Ignorance on the other hand denotes knowledge of the thing contrary to its nature. In between these two ends stand two other degrees of knowledge: *shakk* (skepticism) and *zann* (probable knowledge). *Shakk* occurs when two opposite understandings of a thing are allotted equal possibilities, while *zann* takes place when one of the two possible interpretations is made probable. In terms of the degree of certainty, scientific knowledge ought to be either *certain* or *probable*; skepticism and ignorance are no science.¹⁰

According to the aforesaid definitions, “science” is a methodology of knowing what is what. In the attributive sense, which is “scientific”, this term refers to “a systematic process of understanding of a subject.”

Mind Defined

⁵ Al-Jurjānī, ‘Alī bin Muḥammad, *Al-Ta’rīfāt* (Beirut: Dar al-Kutub al-‘Arabī, 1405 AH), p. 199.

⁶ Al-‘Askarī, Abū Hilāl, *Al-Furuq al-Lughawiyah*, p. 294.

⁷ Al-Isfahānī al-Rāghib, *Mufradāt Alfāz al-Qur’ān* (Damascus: Dār al-Qalam), vol.2: p. 114

⁸ Al-Kūfawī, Ayyūb bin Mūsā al-Ḥusainī, *Al-Kulliyāt* (Beirut: Muassasah al-Risalah, 1998), 611.

⁹ Al-Ghazālī, Abū Ḥāmid, *Iḥyā’ ‘Ulūm al-Dīn* (Beirut: Dar al-Ma’rifah), vol.1: p. 29.

¹⁰ Louay Safi, *The Foundation of Knowledge: a Contemporary Study in Islamic and Western Method of Inquiry* (Malaysia: Petaling Jaya, International Islamic University Malaysia Press, 1996), pp.70-71.

The term “mind” is often used to refer, by implication, to the thought processes of reason.¹¹ In the most general sense “mind” denotes (a) the organized totality of psychical structures and processes, conscious and unconscious; (b) the total activity of a man or animal in responding to internal or external stimulation in relation to experience in the past and expectancy of the future; (c) (metaphysical) the entity or substratum underlying psychical structures and processes¹² or a substance which pervades individual mind and which contrasts with material substance.¹³

In Islamic or Qur’anic tradition, the equal term for “mind” is ‘*aql*’ which is an instrument to determine anything. It is also the trait which differentiates between man and animal. The references to ‘*aql*’ in the Qur’an are clear and frequent. It is used to mean the intellectual and spiritual capacity of the human mind which enables man to understand the Signs (*āyāt*) that God graciously shows to mankind.¹⁴

Encyclopedia of the Qur’an defines the word ‘*aql*’ (mind) as the power or faculty through which humans perceive and understand the world. It further mentions that the cognitive process described by ‘*aqala*’ is based primarily on the human’s ability to perceive, to reflect and to evaluate obvious facts. This meaning of ‘*aqala*’ is very close to that of the word ‘*aql*’ in pre-Islamic poetry.¹⁵

The perspective of ‘*aql*’ in Islamic thought could be summed up as follows: (a) Intellection - the act of reasoning and understanding based on the original and 'apparent' Qur’anic form of

¹¹ <http://en.wikipedia.org/wiki/Mind>, retrieved on 02/04/11

¹² J. Royce, ‘mind’, in J. Hastings (ed.), *Encyclopaedia of Religion and Ethics* (New York: Charles Cribner’s Sons), vol. 8. p. 1915.

¹³ Richard Dewey, ‘mind’ in James Mark Baldwin (ed.), *Encyclopaedia of Philosophy and Psychology* (India: New Delhi, Cosmo Publications, 2002), vol. 4, p. 1174.

¹⁴ *Āyah* is found in the Qur’an with two distinct and inter-related meanings - one refers to the statements in the Qur’an (43:3 and 42: 7), another to the Signs in nature (13:4 and 16:12). In both senses, it refers to the signs either of a language (Arabic) or of nature. In this way, ‘*aql*’ is the ability to read and notice, interpret and understand *āyāt* (signs). Syed Muhammad Dawilah al-Edrus, *Islamic Epistemology: An Introduction to the Theory of Knowledge in al-Qur’an* (Malaysia: The Islamic Academy, Cambridge Secretariat For Islamic Philosophy And Science Universiti Sains Malaysia, 1992), p.43.

¹⁵ Jane Dammen Mc Auliffe, *Encyclopedia of the Qur’an* (The Netherlands: Leiden, Koninklijke Brill nv, 2001), Vol. 2: p. 547

the word, and (b) Intellect - an Existent which, in a theistic context, is the First Manifestation. The Qur'anic evidence is however in favor of 'aql as the act of comprehending and understanding.¹⁶

Al-Ghazālī presents his thesis of intellect (*al-'aql*) in the seventh section in the book of *Iḥyā' 'Ulūm al-Dīn*, where he mentions four shades of its meanings: firstly, intellect is the quality which distinguishes man from animals and enables him to understand the theoretical sciences (*al-'ulūm al-nazriyyah*), and to master the latent intellectual or speculative arts (*al-ṣina'āt al-khafīyyah al-fikriyyah*);¹⁷ secondly, intellect ('aql) is related to the application in logical necessities; thirdly, the word intellect is applied to empirical (*al-tajārub*) knowledge;¹⁸ and fourthly, the term intellect is used when "the power of the instinct develops to such an extent that its possessor will be able to tell what the end will be, and, consequently, he will conquer and subdue his appetite which hankers for immediate pleasures."¹⁹

The first meaning of intellect is its base and fountainhead. The second meaning is its branch and near the first meaning. The third meaning is the branch of the first and second meanings. The fourth meaning is the ultimate result of intellect and distant goal. The first two arise as natural causes and the latter two are acquired.²⁰ According to Al-Ghazālī, "intellect" is the source and fountainhead of knowledge as well as its foundation.²¹

Osman Bakar mentions that 'aql refers to the human intellect as man's highest faculty of knowledge, and which may be identified with the eye of the heart for, in the language of the Holy Qur'an and Prophetic traditions, the heart means essentially the seat

¹⁶ Syed Muhammad Dawilah al-Edrus, *Islamic Epistemology: An Introduction to the Theory of Knowledge in al-Qur'an* (Malaysia: The Islamic Academy, Cambridge Secretariat For Islamic Philosophy And Science Universiti Sains Malaysia, 1992), p. 44.

¹⁷ Al-Ghazālī, *Iḥyā' 'Ulūm al-Dīn* (Beirut: Dār al-Ma'rifah), vol.1:85.

¹⁸ Al-Ghazālī asserts that this knowledge "is acquired through experience, in the course of events". To explain the relationship between empirical knowledge and the intellect he said that he who is taught by experience is called intelligent. See Mustafa Abu Sway, *Al-Ghazaliyy: A Study in Islamic Epistemology* (Kuala Lumpur: Dewan Bahasa dan Pustaka, 1996), p.116.

¹⁹ *Ibid.*, p. 117.

²⁰ Al-Ghazālī, *Revival of Religious Learnings* (Iḥyā' 'Ulūm al-Dīn), translated by Fazl-UL-Karim (Pakistan: Karachi, Urdu Bazar, 1993), vol. 1: 98

²¹ Al-Ghazālī, *Iḥyā' 'Ulūm al-Dīn* (Beirut: Dar al-Marifah), vol. 1: 85.

of knowledge, or the instrument for attainment of knowledge. A knowledge of what the intellect is and does, that is to say, a knowledge of its nature, powers and functions, is the key to the understanding of the problem of the creative process, of the creation of ideas, concepts, and theories in man's scientific enterprise.²²

The intellect is a tool by which a person becomes familiar with objects around him more extensively and deeply than he can do through his senses. It consists of the centre of the thinking process and among its characteristics are the abilities to synthesize, analyze, abstract, generalize, and deepen mental concept.²³ Thus, the functions of the intellect are synthesis, analysis, abstraction, generalization and deepening of mental concepts.²⁴

In a brief introduction to what scientific mind is, Yūsuf al-Qaradāwī, firstly refers to several types of minds such as “average mind” and “superstitious mind”. He then categorizes these minds as “imitative mind” which, according to him, is the opposite of the scientific mind.²⁵

In the light of the key elements of science and mind presented above in their respective definitions, ‘scientific mind’ is man’s systematic intellectual enterprise that processes knowledge with methodological and disciplined activities i.e. observation, identification, experimental investigation, theoretical explanation of phenomena, in order to deliver an objective conclusion of the issue concerned.

QUR’ANIC PREREQUISITES TO DEVELOPING SCIENTIFIC MIND

Awakening Human Mind from Heedlessness (*Ghaflah*) to Consciousness: Mind refers to psychological states and processes that may or may not be ‘conscious’²⁶ and consciousness is a mental

²² Osman Bakar, *Tawhid and Science* (Pakistan: Suhail Academy Lahore, 1991) p. 24.

²³ Mohammadi-ye- Reyshahri, *Principles of Islamic Beliefs* (London, Charing Cross Road, Al-Hoda, 1991), Vol. 2: 6.

²⁴ Ibid., Vol. 2: 7.

²⁵ Yūsuf al-Qaradāwī, *Al-‘Aql wa al-‘Ilm fī al-Qur’ān al-Karīm* (Cairo, Maktabah Wahbah, 1996), p. 239.

²⁶ The term ‘consciousness’ commonly refers to the ‘state of wakefulness’. Consciousness is to be conscious, to know about oneself and the world. ‘Consciousness’ as *conscientia* always implies in a broad sense understanding

state²⁷ or a cognitive faculty of human being. This very faculty may not be at random wakeful. Hence, there comes the question of its promotion or development to the wakeful state which is called the conscious state. In Qur'anic semantics, this state is portrayed in opposition to heedlessness. It is a state of mind that provokes mind to be forgetful or negligent of the matters which human being must not forget about. Muslim scholars often describe this state of mind as a disease that hinders mind to receive knowledge.²⁸ Heedlessness destroys peoples' sense to judge between right and wrong, and this capacity of judgement is an indication of the wisdom of a person. It promotes the capacity of pondering upon and this gift is called (insight) or "vision" in the Qur'an which is, in Qur'anic semantics, called *baṣīrah* "insight" is "to see." A person lacking this very insight is described as one whose heart and mind is covered lest. Allah says:

And We cast a veil upon their hearts (and minds) lest they should understand the Qur'an, and made them hard of hearing. When you commemorate your Lord and Him alone in the Qur'an, they turn on their backs, fleeing (from the truth). (17:46)

To make mankind conscious, the Qur'an strikingly condemns this mental attitude and emphatically invites upon thinking and remembering. Having gone through the Qur'anic emphasis on this issue, the prominent Muslim scholar Muhammad Iqbal (d.1938) even asserts that promoting mankind to consciousness is the chief objective of the Qur'an. He says that "only one main purpose of the

and knowing something. This is what meant by the social dimension of consciousness, in the sense of being in tune with people and things, of being in touch. Max Velmans, *Understanding Consciousness* (New York: Routledge, 2009), p. 9. Christian Scharfetter, *General psychopathology: an introduction* (New York: Press Syndicate of the University of Cambridge, 1980), p. 30. Philosophically, at its most basic level, consciousness may be said to be the process of a thinker focusing the thought on some aspect of existence. Physiologically, a number of processes have been identified with what we consider consciousness. Psychologically, it is important to distance consciousness from its more colloquial use as meaning simply "awake".

²⁷Pete Mandik, *Key Terms in Philosophy of Mind* (New York: Continuum International Publishing Group, 2010), p. 30

²⁸ Ṣāliḥ bin Abd Allah (ed.), *Nazrat al-Na'im* (Jeddah, Dar al-Wasilah), vol. 11, 5108.

Qur'an is to awaken in man the higher consciousness of his manifold relations with God and the universe."²⁹ According to him, the character of man's knowledge is conceptual, and it is with the weapon of this conceptual knowledge that man approaches the observable aspect of Reality. The one noteworthy feature of the Qur'an is the emphasis that it lays on this observable aspect of Reality. He then corroborates his view to the following verses of the Qur'an:

'Assuredly, in the creation of the Heavens and of the earth; and in the alternation of night and day; and in the ships which pass through the sea with what is useful to man; and in the rain which God sends down from Heaven, giving life to the earth after its death, and scattering over it all kinds of cattle; and in the change of the winds, and in the clouds that are made to do service between the Heavens and the earth - are signs for those who understand' (2:164).

'Hast thou not seen how thy Lord lengthens out the shadow? Had He pleased He had made it motionless. But We made the sun to be its guide; then draw it in unto Us with easy in drawing' (25: 45-46).

In the light of conceptual indications of the above mentioned verses, Iqbal points out that "no doubt, the immediate purpose of the Qur'an in this reflective observation of Nature is to awaken in man the consciousness of that of which Nature is regarded a symbol. But the point to note is the general empirical attitude of the Qur'an. It was a great point to awaken the empirical spirit in an age which renounced the visible as of no value in men's search after God."³⁰

A Sūrah which We have sent down and which We have ordained: in it have We sent down Clear Signs in order that ye may receive admonition. (24:1)

²⁹ Muhammad Iqbal, *Reconstruction of Religious Thought in Islam*, ed. M. Saeed Sheikh (Lahore: Institute of Islamic Culture, 1996), p. 7.

³⁰ *Ibid.*, p. 11.

Nor wast thou at the side of (the Mountain of) Tūr when We called (to Moses) Yet (art thou sent) as a Mercy from thy Lord to give warning to a people to whom no warner had come before thee: in order that they may receive admonition. (28:46)

We have put forth for men in this Qur'an every kind of Parable in order that they may receive admonition. (39:27)

Evidently, all these verses end with a term of expectation i.e. *la'allakum tadhakkārūn* which means "so that you can remember or be aware of". This expectation is followed by a specific mentioning of the elements which could lead to meet it. However, when an expectation is made by Allah (swt) from human being, it becomes a moral duty for him to fulfill that expectation. Thus, it becomes an objective of his actions. It can be argued that the main purpose of these verses is to jolt the people out of their heedlessness.

His people remonstrated with him whereupon Abraham said: 'Do you remonstrate with me concerning Allah Who has guided me to the right way? I do not fear those whom you associate with Allah in His divinity. Only that which my Lord wills, indeed that alone will come by, My Lord embraces all things within His knowledge. Will you not take heed? (6:80)

The word used here is *tadhakkur* which conveys the sense that somebody who had been either heedless or negligent of something suddenly wakes up to its true meaning. The purpose of Abraham's statement was to recall them to their senses by reminding them that their true Lord was not uninformed about their deeds, for His knowledge encompasses everything.³¹

From the above mentioned verses, it is clearly reflected that the Qur'anic concern of making human mind conscious is overwhelming. Along with inviting to think and reflect upon the outer world or natural phenomena, in the Qur'an, the issue of

³¹ Mawdūdī, Abul A'la, *Tafhīm al-Qur'an*, 6: 80

consciousness is theoretically related to its most dominant major themes i.e. the objectives of the Qur'an and the mission of the prophets.

However, the main obstacle to make human mind heedless is as the Qur'an explicitly describes. The following verse is reflecting this reality.

So We inflicted Our retribution on them, and caused them to drown in the sea because they gave the lie to Our signs and were heedless of them. (7:136)

Senses are the tools of knowledge and heart is its processor. A person, who possesses all these tools and faculties but does not use them to understand the signs of God, is characterised in the Qur'an as a heedless being. The Qur'an bitterly criticises this attitude comparing them to the cattle. People of this attitude often misjudge the existing realities such as the signs of Allah which are fountainhead of physical or experimental sciences. They are in fact the sources which promote man's intellectual faculty to a higher plane. This promotion would not happen in man's mind unless they use properly the faculties of observation, seeing, listening, hearing, and reasoning etc. which they were bestowed upon. Thus, the most striking characteristic of a scientific minded person is to get rid of the state of "heedlessness." Taking lessons from the signs of Allah, being among men of understanding who take heed, using senses to acquire knowledge are among the signs of mindful attitude. Allah calls upon mankind to achieve this attitude. Allah says:

"And remember your Lord (by your tongue and) within yourself, humbly and with fear without loudness in words in the mornings and in the afternoons and be not of those who are heedless." (7:205)

Heedlessness is a dangerous disease. A profound stupor of heedlessness temporarily makes heart insensible to it.³² If it afflicts a person and overwhelms him, his actions are void of humility, humbleness, repentance, fear, tranquility, truthfulness and sincerity.

³² Nursi, Bediüzzaman Sa'id, *The Words, Thirteenth Word - Second Station* (Turkey: Istanbul, Sozler Publications, 1996), p. 156.

He becomes careless and trifling. Thus, he tends to be forgetful and his mind becomes stagnated. The Qur'an, under the crashing of a mighty revolution all the senses and subtle inner faculties of people were awakened, even senses like those of fancy and imagination, in an awakened and aware state. This state is practically reflected in the first generation of Islam, which was the truly Qur'anic generation, whose senses were awakened and subtle faculties, alert, uttered those blessed words comprising the lights of belief and glorification. Consciousness and intellect are the distilled essence of life.³³ Life is the light of existence, and consciousness is the light of life.³⁴

Promoting Mind From Blind Imitation To Objective Judgment

Aristotle points out that imitation is inborn in man.³⁵ With this premise, it can be said that imitation is a matter of course. Yet, there is no problem if the goal of imitation is not to put an end to the activity or attitude but to learn how to be innovative or creative. A blind imitation itself is not a creative action. Following the example of a way of behavior or an appearance with unwarranted trust, without investigating and seeking proofs of its being desirable, is blind imitation.

In Islam, blind imitation is strongly discouraged unless one has reached the decision to follow after closely examining the suggested exemplar. Allah orders to look carefully at whatever exists on earth and in the heavens. Over and over again, in the Qur'an, there are warnings against blind imitation. Mankind is urged to investigate and carefully consider everything before following an example.³⁶

Blind imitation reduces the passion for investigation or inquiry which ultimately leads to mental stagnation. The machinery of empirical cause and effect comes to standstill. Blind imitation is

³³ Ibid. Tenth Word - Second Part of the Addendum, p. 122

³⁴ Ibid. Twenty-Ninth Word, p. 523

³⁵ James S. Hans, *Imitation and the Image of Man* (John Benjamins Publishing Company: 1987), 81.

³⁶ Birgivi Mehmet Efendi, Imam Birgivi, Tosun Bayrak, *The path of Muhammad: A Book on Islamic Morals and Ethics* (Indiana: World Wisdom. Inc. 2005), p. 122.

curiously inert, unmotivated, and even mindless activity.³⁷ This attitude of mind seriously undermines the merits of innovation³⁸ and hinders its search for truth. Due to its harmfulness, the Qur'an categorically condemns the practice of this attitude when criticizing Makkan unbelievers' blind imitation of their forefathers. Allah says:

When it is said to them, "Follow the Commands that Allah has sent down," they reply, "We will follow only what we found our forefathers practicing. Well, will they go on following their forefathers even though they did not use common sense and did not find the right way?"
(2:170)

This Divine criticism comes in response to an irrational attitude of the people who are used to ignore the obvious evidences that were revealed by Allah (swt). It is clear that the denial of a fact that is proved with obvious proofs is a sheer irrationality. Therefore, their saying "*we don't follow but what our forefathers followed*" is a kind of irrational attitude that had been an obstacle for them to find out what is rational, truth and reality. As it appears that, they overlooked Divine guidance and imitated their ancestral tradition³⁹. "*No, but we have found our elders doing the same*"⁴⁰. Thus, they themselves admitted that the only reason of their worshipping the idols was the blind imitation of their forefathers. Qur'an evidently vilifies blind imitation and dogmatically following of forefathers without reasoning and inspires to open the mind in investigating the truth. These verses indicate the Qur'anic attitude about the blind imitation.

Not only the Qur'an but also the practices of the Prophet's Companions, who were the truly Qur'anic generation and examples of the mind the Qur'an intends to develop, also go against blind imitation. This generation totally rejected blind imitation and acted

³⁷ James E. Gill, *Cutting Edges: Postmodern Critical Essays on Eighteenth-Century Satire* (USA: The University of Tennessee Press, 1995), p. 104

³⁸ Steven P. Schnaars, *Managing Imitation Strategies* (New York: Rockefeller Center, 1994), p. 1

³⁹ Al-Rāzi, Fakhṛ al-Dīn, *Mafātīḥ al-Ghaib* (Beirut: Dar al-Kutub al-Ilmiyyah, 2000), vol.3, 18

⁴⁰ Al-Qur'an: 26:74

upon what is logical to do as a result they have been able to come to the eternal light of the truth of the Qur'an. Finding truth only was their main motive in any kind of enquiry. Whatever is supported by clear evidence, they followed it. So while the truth was discovered, they accepted it even if it went against their own views.

Imām Abū Ḥanīfah clearly stated: "If a ḥadīth is correct, then that is my stand"⁴¹; "One should not accept our statement if he does not know from which source we have taken it"⁴². "It is prohibited for one to deliver *fatwa* by using my statement if he does not possess knowledge about the evidence I used." "We tell something today what we change tomorrow. O Abū Y'aqūb (Abū Yūsuf), don't write whatever you hear from me. In fact, I hold one view today which I might leave tomorrow, and what I will hold tomorrow, I might leave the day after tomorrow. If I say something that contradicts the Qur'an and Prophetic traditions, then leave my saying [and follow the Qur'an and the tradition]⁴³."

Imām Mālik bin Anas said: "I am a human being; I might be right and wrong. So check my views and accept what the Qur'an and *Sunnah* endorse of them; and leave what the Qur'an and *Sunnah* do not approve of"⁴⁴. "No body's views are taken but refused to be taken except the Prophet's views"⁴⁵.

Imām al-Shāfi'ī said: "The [acceptable] word is what the Prophet said and that is my word"⁴⁶. "If you find in my book anything contradicts the *Sunnah*, hold the *Sunnah* and leave what I said"⁴⁷. "If you see me saying any word which goes against the verified prophetic traditions, then I testify that my memory is gone"⁴⁸.

Imām Aḥmad bin Ḥanbal said: "Don't imitate me, and even not also Malik, al-Shāfi'ī, al-Awzā'ī and al-Thawrī. Take from the

⁴¹ Ibn 'Abidīn, *Al-Hāshiyah*, vol.1, p. 63

⁴² Ibid., vol. 6, p. 293.

⁴³ Al-Albānī, Muḥammad Nāṣir al-Dīn, *Ṣifatu Ṣalāt al-Nabī* (Riyadh: Maktabah al-M'arif, vol. 1), p. 47.

⁴⁴ Ibn 'Abd al-Barr, *al-Jam'i*, vol. 2, p. 32.

⁴⁵ Ibid., vol. 2, p. 91.

⁴⁶ Ibn al-'Asākir, *Tārīkh Dimashq* (Beirut: Dar al Fikhr, 1998), vol. 5, 1389.

⁴⁷ Al-Nawawī, Abū Zakarīyyā Muḥy al-Din, *al-Majmū'* (Beirut: Dar al-Fikhr), vol. 1, 63.

⁴⁸ Ibn al-'Asākir, *Tārīkh Dimashq*, vol. 51, p. 387

sources they have taken from⁴⁹. "Don't imitate anyone from these people (*a'immah*) in religious affairs, follow what are narrated from the Prophet and his companions and followers of them (*Tābi'ūn*)⁵⁰."

The aforesaid arguments, evidences and statements certify that there is no place of blind imitation and dogmatism in the Qur'ānic directives, in the practices of the Prophet and his Companions. The Qur'an strongly condemns this mental attitude.

And the example of those who disbelieve is as that of him who shouts to the (flock of sheep) that hears nothing but calls and cries. (They are) deaf, dumb and blind. So they do not understand. (2:171)

When he said to his father and his people: "What are these images, to which you are devoted. They said: We found our fathers worshipping them. He said: Indeed you and your fathers have been in manifest error. (4:52-54)

In the verses above, a repeated and explicit call for the complete and total liberation of the human mind from its bonds of blind imitation of the past, and from the shackles of legendary illusions.⁵¹ It is because blind imitators often use futile argument in support of what they do rather than to wise logic. This is reflected in the following verses as they frankly say "We have never heard anything like this ever happening to our forefathers." (*Al-Mu'minūn*, 24) This statement of the blind imitators explicitly outlines how blind imitation suppresses free thinking. And when thinking is shackled, consequently, people do not look at what they have and try to relate it to reality in order to arrive at the right conclusion to questions in hand. They rather look to history for precedents. If they fail to find such a precedent, they are prepared to reject the question in its entirety. They are incapable of understanding that they are imprisoned within their narrow walls, unable to break into the wide universe! They accuse those who

⁴⁹ Ibn al-Qayyim, *Fī I'lām al-Mūqī'in*, vol. 2, p. 302

⁵⁰ Albānī, Muḥammad Nāṣir Uddīn, *Ṣifat Ṣalāt al-Nabī* (Riyadh: Maktabatul M'ārif), vol. 1: 53.

⁵¹ Sayyid Quṭb, *In the shade of the Qur'an*, translated by M. A. Salahi (United Kingdom: Islamic Foundation, 2009), Sūrah Hūd, verse 62.

advocate freedom of thought of being mad, calling on them to think and reflect.⁵² In addition, these verses show that the blind imitation promotes a tendency of rejection or overlooking. The Qur'an categorically condemns this attitude. While the Qur'an calls upon people to follow the true and logical path of Allah with irrefutable logic and arguments, the blind imitators responds negatively to this call saying: *"No; but we will follow only what we found our forefathers believing in."* (Luqmān:21) This is their only basis and evidence. It is nothing other than blindly following traditions which lack knowledge and intelligent thinking. Islam wants to free them from such blind imitation, so as to set their minds free. It wants them to be able to think, reflect and benefit by the light, but they adamantly hold on to the chains of their deviant past. Islam means freedom of conscience, active feelings, aspiration for enlightenment and a new way of life that is free of blind tradition.⁵³ The Qur'anic criticism gets even bitter toward the blind imitator as it quotes: *It is unbelievers who attribute their own lying inventions to God. Most of them never use their reason. When they are told, "Come to that which God has revealed and to the Messenger, they reply, "Sufficient for us are the ways we found our fathers following." Why, even though their fathers knew nothing and were devoid of all guidance? (Al-Mā'idah:103-104)* This verse compares the blind imitators' attitude with irrationality and lack of objectivity in their choices and approaches. These two are the major obstacles to developing a scientific mind as on the other hand, rationality and objectivity are two cardinal mental attributes that could beam the path of how to make the mind scientific.

In the Islamic perspective, the quest for objectivity in intellectual pursuits is not only legitimate and desirable, rooted as it were in man's inner nature, but also possesses a profound religious significance. Objectivity is an essential element of the scientific spirit. Without objectivity, knowledge as a collective human enterprise would not be possible. The primary meaning of objectivity is related to two principal ideas. One is the idea of impartiality and a "disinterested" perspective as opposed to bias, prejudice and an "interested" point of view. The other idea, which is related to the first, refers to the principle of collective or public

⁵² Ibid., Sūrah al-Mu'minūn, verse 24.

⁵³ Ibid., Sūrah Luqman: 21.

verification. Objective knowledge is that knowledge which is open to public verification.⁵⁴ In Islamic tradition, the sense of objectivity, understood as referring to the qualities of impartiality, disinterestedness, and justice in the domain of knowledge, is inseparable from the religious consciousness of *tawhīd*.⁵⁵ However, objectivity in modern scholarship is mainly confined to the empirical or experimental domain. Islamic intellectual tradition, however, speaks of objectivity on the higher planes of human consciousness as well. This position maintained by Islam is a logical outcome of its belief that there are many levels of objective truth. Physical, mathematical, and metaphysical truths are all objective in nature. Corresponding to each level of objective truth, there is a particular form of verification or proof involving the particular faculty of knowing through which that objective truth is cognized.⁵⁶ Objectivity is also possible in the domain of non-empirical knowledge, such as in religious and spiritual knowledge or in philosophical and metaphysical knowledge, precisely because all men, in principle, possess the higher faculties of knowledge. Islam maintains that objectivity in its highest sense belongs to the intellectual order. This objectivity refers to the intellectual power of discernment which enables man to distinguish between the Absolute and the relative or between God and what is other than God.⁵⁷

When it is said that the Qur'an addresses the human mind, it means that it awakens our minds and directs us to use a proper method of evaluation. Human mind is the one tool available to man, which determines the accuracy and fairness of his judgments, for this standard does not bend in order to please or appease anyone.⁵⁸

Promoting Mind from Conjectural Stage to Conscious Reasoning

Conjecture is an inference or judgment based on inconclusive or incomplete evidence; or a statement, opinion, or conclusion

⁵⁴ Osman Bakar, *Tawhid and Science*, p. 8.

⁵⁵ *Ibid.*, 8.

⁵⁶ *Ibid.*, p.10.

⁵⁷ *Ibid.*, p.11.

⁵⁸ Sayyid Qutb, *In the Shade of the Qur'an*, Sūrah al-Baqarah, vol.1, 348.

based on guesswork.⁵⁹ A conjecture is an incomplete model⁶⁰ because it is in fact a hypothetical judgement which cannot fairly conform to one type of truth.⁶¹ In the conjectural state, logic and reasoning are seldom resorted to. This is indeed a bizarre state of mind that can be defined as being irrational and dubious. Getting rid of this dubious nature that generated by sheer conjectural acts, a sound reasoning could be an ascertainable way.

It would be mistake to conclude from this that the uncertainty of a theory, i.e. its hypothetical or conjectural character, diminishes in way its implicit claim to describe something real. For every statement is equivalent to a statement claiming that is true. A conjecture may be true and thus describe a real state of affairs. If it is false, then it contradicts some real state of affairs.⁶²

Conjecture might lead to a truth if it is causal, which is an art of using what we know, together with judicious observation and experiment. There is a possibility to gain a fuller and more confident understanding of something by using this method.⁶³ Analysis or conjecture may help reveal the real reasons or it may not, but believers must refrain from such guesswork regarding any instructions or rulings the reasons or justifications for which have not been expressly given. God knows they are for the good of mankind. No matter how much speculation the human mind may make regarding the reasons behind certain Divine rulings or the way in which they ought to be implemented or exercised, it all remains speculative.

No matter how confident, incisive or knowledgeable one is, one can never state with certainty what the Divine reason or wisdom might be. This deference to God Almighty is imperative. It is an essential element in differentiating between the reality and the

⁵⁹ www.thefreedictionary.com/conjecture

⁶⁰ Jeff Glassman, *Conjecture, Hypothesis, Theory, Law: The Basis of Rational Argument* (Cross Fit Journal Issue 64 - December 2007), 3. <http://store.crossfit.com>

⁶¹ F. H. Bradley, *Essays On Truth And Reality* (Oxford: The Clarendon Press, 1962), 110-112.

⁶² Karl Raimund Popper, *Conjectures and refutations: the growth of scientific knowledge* (New York, Routledge, 1963), p. 156.

⁶³ Glenn Shafer, *The art of causal conjecture*, p. 299

nature of knowledge that is God-given and that is the result of human analysis or understanding.

While they have no knowledge thereof, they follow but a guess, and verily, guess is no substitute for the truth. Therefore withdraw (O Muhammad!) from him who turns away from Our Reminder (this Qur'an) and desires nothing but the life of this world. (53:28-29)

In the verse above, the sheer conjecture without any judicious judgment is strongly condemned. It is clearly stated that this mental exercise cannot help to reach to the truth. Thus, any practice that is grounded on this attitude should be rejected even if it is practiced traditionally by the forefathers or by the majority who tend to follow their conjectures and fancies rather than sound knowledge. Since the sheer conjectures cannot provide an authentic and decisive conclusion, it cannot play as an effectual scientific tool of human understanding. The Qur'an thus approaches mind to be promoted from this unsound stage to a sound and scientific stage which could lead them to the truth and guidance.

The Qur'an uses several methods for this transition of mind. The first is to invite mankind to a systematic and methodological thinking. It is true that the soundness of the conclusion at which a person arrives totally depends, however, on the soundness of the method. If the method is sound, so would the conclusion be; and vice versa. For example, as the above mentioned verses pictured, the method used by the polytheists is based merely on conjecture which has little role in penetrating the reality. The Qur'an brands this kind of intellectual quest as essentially fallacious. It tells such people that the real cause of their malady is guesswork and conjecture in their pursuit of reality. In sharp contrast to this fallacious method, the Qur'an lays down an altogether different method to guide men in their quest of reality. This requires, first of all, that one should heed with open ears and consider with open minds the statements of those who claim to be expounding their doctrine about reality not on the basis of speculation or conjecture, nor on the basis of meditation or intuitive conviction, but on the basis of 'knowledge'. They should then proceed to consider the phenomena which form a part of man's observation or experience of the universe (called *āyāt*-signs-in the Qur'anic parlance); to

systematize all that they come to know in this manner and to seriously reflect whether the phenomena seem to testify to the reality underlying the phenomena. Not only does the Qur'an urge people, over and over again, to follow this method, but by frequently drawing attention to the physical phenomena and then showing how right conclusions can be derived from them, it also seems to train them to follow this method.⁶⁴

Human mind has wide scope open to understand the nature of the universe, its potentials and the forces working within it as well as the nature of different creatures, and to make use of what God has given mankind in this universe.⁶⁵ The Qur'an invites people with an exhortation to think and reflect: "*I only follow what is revealed to me. Say: Can the blind and the seeing be deemed equal? Will you not reflect?*" Reflection is certainly needed, and the Qur'ān calls on people to reflect. However, reflection must be guided by divine revelation so that it remains enlightened. There is no virtue in reflection that is blind, groping in the dark, without guidance. When the human mind uses its faculties within the framework provided by divine revelation, it has a very wide field in which to play its role. Indeed, divine revelation provides continuous motivation for the working of the human mind. When God has endowed man with his great gift, the mind, He has required him to use it actively and provided him with guidance so that he can steer himself away from deviation and error.⁶⁶

As far as the observation of the world or the universe is concerned, as a rule, the Qur'an does not touch on things that are hidden from most people's eyes or are based on mere guesswork or conjecture, or cannot be seen by the naked eye, or can be observed through instruments such as microscopes and telescopes only, because there is room for a lot of difference and disagreement concerning them. Instead, the Qur'an draws our attention to those undeniable facts which no just and honest person can dare deny.⁶⁷ Here are some Qur'anic verses that invite mankind to observation:

⁶⁴ Mawdūdī, *Towards Understanding the Qur'an*, Translated by Zafar Ishaque Ansari, Qur'an, 10:67.

⁶⁵ Sayyid Quṭb, *In the Shade of the Qur'an*, Sūrah al-Nisā', p. 325

⁶⁶ Sayyid Quṭb, *In the shade of the Qur'an*, Sūrah al-An'ām, p. 133

⁶⁷ Islahi, Amin Ahsan, *Pondering over the Qur'an*, Translated by Mohammad Saleem Kayani (Kuala

Then let man at least consider from what he is created. He is created from a spurting fluid. That issues forth from between the backbone and the breast-bones. Surely He (the Creator) has the power to create him again. (86:5-8)

Then let man look at his food; We poured down water in abundance, then cleft the' earth asunder, then caused to grow in it corns and grapes and Vegetables, and olives and dates, and lush gardens, and fruits of every kind and fodder as a means of sustenance for you and your cattle. (80: 24-32)

These observable phenomena in the Qur'anic usage is “*āyah*” (sign). Everything in the universe is an *āyat* Allah (a sign of Allah). By definition, signs are signs of God. One way to grasp the message of the signs would be to look at the natural world and try to understand its language. In a certain sense, this is what modern science does; it is trying to understand the message of nature and the cosmos. However, when the Qur'an mentions God's signs, it typically concludes with something like “perhaps you will take heed”, or “will you not understand?” or “do you not see?” or “will you not use your reason”,⁶⁸ “you perhaps use your mind”, “so that you use your reason” and as such.

And He has subjected to you the night and the day, the sun and the moon; and the stars are subjected by His Command. Surely, in this are proofs for people who understand. (16:12)

And from the fruits of date-palms and grapes, you derive strong drink (this was before the order of the prohibition of the alcoholic drinks) and a goodly provision. Verily, therein is indeed a sign for people who have wisdom. (16:67)

Lumpur: IBT, 2007), vol. 1, al-Baqarah, 152.

⁶⁸ Sachiko Murata & William C. Chittick, *The Vision of Islam* (London: I. B. Tauris & Co Ltd., 2006), p. 54.

This observation of all the signs of Allah promotes in the mind a sense that all these have been created by God's creative power. Nature is a source of many types of knowledge: mathematical, physical, and metaphysical; scientific and spiritual; qualitative and quantitative; practical and aesthetical. This is because, as a world and viewed in its totality, the reality of nature is comprised of many aspects.⁶⁹ The recommended tools for the understanding them are the observation and examination of the natural world which coupled with reasoning and reflection. This essentially ties the belief in God with mankind's empirical knowledge. The Qur'an abounds in such verses asking people to consider for themselves and to use their minds to reveal the secrets of the universe i.e. astronomy, cosmology, geology, medicine, biology, history and prophecies.⁷⁰ It stresses scientific investigation and exploration of the mysteries buried deep in the bosom of nature, is an endless activity of human mind. It is clear that the methodology used in the Qur'an leads humans towards the belief in what the Qur'an calls "the unseen, the absent from our sights or the unseen world" is not based on speculative philosophy, but on observations of phenomena in our observable world, the world within and without the human being. Knowledge based on observations which is open-ended is more objective than that based on philosophy which tends to be not so open-ended.⁷¹ As methodology is the way or method by which man can gain knowledge of Reality, either in its partial or total aspects, man is the subjective pole of knowledge, that is to say, the subject that knows. This pole consists of all the faculties and powers of knowing within man, which are hierarchic in nature.⁷² Man is frequently recommended to use several multi-layer effective methods that could develop his mind as scientific. These are most notably observing (*nazr*), thinking (*tafakkur*), reflecting (*tadabbur*), reasoning (*ta'qqul*) and others. Each of them has a complementary role in developing scientific mind. For example, *tafakkur*, which is

⁶⁹ Osman Bakar, *Tawhid and Science*, p. 63.

⁷⁰ Ahmad Mahmud Soliman, *Scientific Trends in the Qur'an* (UK: TaHa Publishers Ltd, 1985), p. 14.

⁷¹ Mohammad Abu-Hamdiyyah, *The Qur'an: an Introduction* (London and New York: Routledge, 2002), p. 37

⁷² Osman Bakar, *Tawhid and Science*, p. 19.

the driving force which gives the power for the brain to work and operate. This term is briefly defined as reflection or careful consideration. In the Holy Qur'an, Allah says: *Do they not reflect?* From the Qur'anic perspective, this term has three major aspects: reflection upon creatures (*fikr fī al-khalq*), reflection upon signs (*fikr fī al-āyāt*) and reflection upon life (*fikr fī al-nafs*).⁷³ Professor Malik Badri, a contemporary Muslim psychologist says that *Tafakkur* goes through three interrelated stages as follows:

1. Information that comes through conception via the senses, imagination or abstract intellectual information.
2. Paying closer and more thorough attention to that information acknowledging its aesthetic traits and perfect creation. This in turn, leads to astonishment and appreciation.
3. Moving to think about the Great Creator. This leads to stronger faith and better knowledge about His attributes.⁷⁴

The human mind is fully equipped to scrutinize and probe into man's surroundings, and to experiment with and apply the theories he formulates and the tools he invents. The Qur'ān concentrates on nurturing man's character, conscience and mind, and laying the sound foundations of the human environment which allows him to make full use of his own hidden potential and that of the world around. Having laid down the groundwork and given man the necessary mental tools and criteria, the Qur'ān leaves man free to seek and search, experiment and reasoning. And even scientific inquiry, based on reason, is seen in Islam as form of worship.⁷⁵

Conclusion

“Scientific mind” has been a popular term in cognitive science. It is used to mean the opposite to superstitious, irrational, traditional, uncreative, unconscious and imitative mind. These

⁷³ Syed Muhammad Dawilah al-Edrus, *Islamic Epistemology: An Introduction to the Theory of Knowledge in al-Qur'an*, p. 45.

⁷⁴ See: Jamal Badi, *Creative Thinking: an Islamic Perspective* (Malaysia: IIUM Press, 2nd edition, 2005).

⁷⁵ Ed. Edward Chaig, *Routledge Encyclopedia of Philosophy* (London and New York: Routledge, 1998), p. 562.

types of minds are severely criticized in the Qur'an. The Qur'an overwhelmingly focuses on how human being can get rid of them, and develop a creative, objective, rational and conscious mind instead. In doing so, it instructs many approaches but this study however discussed only three of them. The first is awakening human mind from heedlessness (*ghaflah*) to consciousness which is the state of being awake and able to hear, see and think; having knowledge or understanding. It is a cognitive faculty that keeps man's mind wakeful systematically. In Qur'an, heedlessness is presented as a disease that hinders mind to receive knowledge and destroys peoples' capacity of right judgement. This definitely prevents mind from being enlightened. Thus, the Qur'an urges to wake up from heedlessness and obligates to be conscious. Secondly, the Qur'an warns that blind imitation has been a key cause for intellectual stagnation. It draws a long ancient historical inference which shows that people of ages were deprived from accepting truth because of their blind and illogical imitation of their forefathers. It categorically states that for reaching the truth, man's mind should be totally free from blind imitation. Finally, the Qur'an appeals to human being to use reason methodologically and systematically to investigate the secrets of natural phenomena. It recommends observation and examination of the natural world coupled with reasoning and reflection. Scientific and rational investigation in human life and natural phenomena are made a religious duty or obligation in the Qur'an. This is essentially the Qur'anic quest for empirical knowledge which is the cornerstone for science. These three approaches could liberate human mind from unscientific state to the scientific.