

SCIENCE AND TECHNOLOGY
IN
QURANIC PRECEPTS

KHALID MASUD



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SCIENCE & TECHNOLOGY

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FOREWORD

The Quran is the word of Allah revealed to the Prophet Muhammad, peace be upon him, for the guidance of humankind in all spheres of life. The subject of science and technology is not alien to the Quran, whose references to natural and scientific phenomena are so numerous that quite a few books have appeared on this subject. The Muslim scientists are painstakingly trying to prove that the latest scientific thought is contained in the Quran. This point of view is not altogether true. The Book contains guidance in respect of the study of natural and scientific facts as well as the use of science and technology which is specifically its own.

In the following pages I have tried to explain Quranic precepts in the matters of science and technology. These are three articles contributed to various national journals. These have been collected together for the benefit of the readers.

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SCIENCE IN QURANIC PERSPECTIVE

There is a growing consciousness among the Muslim scientists that a very large number of Quranic verses relate to the subjects which have relevance to the modern science. They have tried to pick up such verses that, in their view, have direct or indirect reference to any field of science. Quite voluminous literature has been produced to show that the Quran has alluded to almost every branch of science and this fact is regarded as one of the proofs of the authenticity of the Holy Book. This is obviously done out of love ingrained in the hearts of the Muslim scientists for the articles of their faith and, therefore, is justifiable. However, one aspect of this exercise is noteworthy. Although one cannot deny the fact that quite a large number of verses contain elements of various branches of science, yet when one studies the Quran in its own perspective, the context of the verses said to have reference to the scientific phenomena is found to rarely have any scientific import.

Let us examine the issue by means of some of the verses related to natural phenomena. Discussion on each and every verse will be quite lengthy and not so essential. Therefore, only one or two representative verses will be quoted to determine what message they have to convey.

Natural Phenomena as Evidences:

One of the most indelible impressions one gets from some of the verses under question is that they are meant to serve as evidences to prove certain realities quite apparent from what we see around us. In such verses the word 'ayah' (آية) or 'ayaat' (آيات) meaning signs or portents is invariably used. In order to prove its stance on

various subjects, the Quran refers to natural phenomena calling them signs pointing towards the conclusion the Quran wants to draw. To cite an example, the following passage may be perused:

"Your God is God alone; there is no deity except Him, the Mercy-giving, the Merciful! In the creation of Heavens and Earth, the alternation between night and day, the ships which plough the sea with something to benefit mankind, and any water God sends down from the sky with which to revive the earth following its death, and to scatter every kind of animal throughout it, and directing the winds and clouds which are driven along between the sky and earth, are signs for folk who use their reason." (1)

Here the verse refers to a number of phenomena which, no doubt, are scientific facts related to the fields of astronomy, physics and climatology etc. but the Quran exhorts us to use reason and learn that these are signs of the oneness of their Creator. These phenomena include creation of the heavens and the earth with a definite order and purpose, systematic and precise alternation of day and night, and cooperation among divergent things like the sun, sea, air and the earth to produce purposeful results which are so beneficial for the humankind. These are the evidences of Allah being the sole Creator of the universe. Had there been no Designer, the universe would have been devoid of any purpose behind creation. Had there been a number of creators, there could have been no cooperation among them and hence no harmony in their creation. Therefore, the system, order, harmony and purposefulness in the universe presupposes that it is the handiwork of only one God and there is no deity except Him.

There are other passages in the Quran which state similarly observable facts to bear upon the Day of Judgement. For example, the reproduction of a baby in the womb of its mother and the sprouting in soil to produce every sort of lovely species mentioned in verse

22:5 are the evidences of how man will be given new life in the Hereafter and the task would not require any big effort from the Almighty Allah. Some verses comment on the situation in which the Holy Prophet (PBUH) and his companions found themselves in face of their adversaries and an explanation is given in the light of God's practice manifest in nature.² In all such passages, emphasis is not on sciences as such but on their being evidences of the facts stated in a particular context.

Natural Phenomena as Signs of Allah's Attributes:

Secondly, some of the verses having reference to scientific phenomena are meant to bring home to man the attributes of Allah. The following passage is quite clear in this respect:

"God will support anyone who retaliates insofar as he has suffered, then is set upon again; for God is Pardoning, Forgiving. That is because God merges night into daylight and merges daylight into night. God is Alert, Observant. That is because God is Truth, while anything they appeal to instead of Him is false. God is the Sublime, the Great. Have you not seen how God sends down water from the sky, so the earth becomes verdant. God is so Gracious, Informed. He holds whatever is in Heaven and whatever is on Earth; God is the Transcendent, the Praiseworthy! Have you not seen how God has subjected whatever is on earth to you, and the ships that sail at sea by His command? He holds back the sky from falling down on the earth except with His permission. God is so Gentle, Merciful towards mankind."³

In these verses the attributes of Allah, which are responsible for bestowing His favours on human beings, are interspersed, making use of natural phenomena the manifestation thereof. They reveal that Allah is not indifferent to His creation, nor is He ill-informed or incapable. He holds complete authority over the universe. He regulates its days and nights. He holds the reins of everything. It is with His permission that man is able to use his contrivances to his advantage.

If God had not been so Gracious, nothing would have been subservient to man and his science would have met with utter failure. The attributes made out in these verses are Allah's alertness, observation, knowledge, greatness, sublimity, transcendence, praise-worthiness, graciousness and mercy. All these attributes can be understood by means of their effect which is observable in the objects of nature around us. In other verses God's power, wisdom, control and planning are deduced from similar observations. Man can know God by these attributes and fairly understand his own position in His dominion.

Natural Phenomena Invoking Gratitude:

The third import of the verses having reference to scientific phenomena is that these are designed to impress upon man that he is a creature with little power of his own. God knew his imperfections and bestowed favours on him. This makes it obligatory for man to be grateful to God alone. The following passage is clear in this respect:

"God is the One Who has created Heavens and Earth, and sends down water from the sky. He brings forth produce by means of it as sustenance for you. He has subjected ships to you so that they may sail at sea by His command; and subjected rivers to you. He regulates the sun and moon for you, both journeying on and on, and regulates night and day for you. He gives you everything you ever ask Him for. If you counted up God's favours, you would never be able to number them; yet man is so unfair, ungrateful."⁴

The verse means that God created everything for the sake of man, who was appointed His vicegerent on earth. He subjected the powers of nature to his service and provided him whatever he was in need of. The Sustainer-Master would continue to provide him all his necessities till the end of life on the earth. These favours call for a deep sense of gratitude in man towards Allah resulting in his humility and submission.

But unfortunately man goes on enjoying all these privileges without caring for his responsibility. This behaviour is a witness to his ungratefulness.

Other passages conveying the same message are 29:63, 35:11-13, 39:5-7 and 43:9-14. God in His Majesty declares as follows:

"Even if you were ungrateful, God could still dispense with you. He does not approve of ungratefulness among His servants; however if you act grateful, He will approve of you."⁵

Man in his ignorance considers himself master of the universe. Success in his scientific pursuits has given him this wrong impression. The Quran dispels such impressions and points out limitations of his science. He makes it clear that man can take steps but ultimate result rests with Allah. A passage reads as follows:

"Have you considered what you plant as crops? Do you grow it or are we the Growers? If we so wished, We would turn it into chaff so you would do nothing but exclaim: 'We are debt-ridden; in fact, we are destitute'; Have you ever considered the water you drink? Do you pour it down from the rain-clouds or are We its Pourers? If We so wished, We might make it brackish. If you would only act grateful!"⁶

The passage means that man should be aware of his limitations and cast aside his misgivings about Allah's control over his designs. Only with this consciousness he can act gratefully.

Natural Phenomena as parables:

Quite a large number of the parables in the Quran are actually the statements of natural phenomena. Being real experiences, they are instrumental in producing vivid understanding of the subject under discussion. The light of faith in Allah in a believer's mind and the

darkness of infidelity in an infidel's is made really perceptible by comparing it to our physical experiences quite common in nature. The Quran says:

"God is the Light of Heaven and Earth! His light (in a believers's mind) may be compared to a niche in which there is a lamp; the lamp is in a glass; the glass is just as if it were a glittering star kindled from a blessed olive tree, which is neither eastern nor western, whose oil will almost glow though fire has never touched it. Light upon light, God guides anyone He wishes to his light. God is aware of everything!"²

"Those who disbelieve (will find) their deeds (will disappear) like a mirage on a desert: the thirsty man will reckon it is water till, as he comes upto it, he finds it is nothing. Yet he finds God (stands) beside him and he must render Him his account; God is Prompt in reckoning! Or like darkness on the unfathomed sea: one wave covers up another wave, over which there (hang) clouds; layers of darkness one above the other! When he stretches out his hand, he can scarcely see it. Anyone whom God does not grant light to will have no light!"³

In the first parable, the light of the lamp combines various factors for its incandescence, each factor enhancing the intensity of glow. Likewise, a believer finds a number of factors to enlighten his mind. His nature and intellect are already full of inward light and the guidance through revealed word is, in fact, light upon light, so that the believer never finds his way enshrouded in darkness. An infidel, on the contrary, lives beneath layer after layer of darkness. His nature has no inward light. His intellect is prone to all types of whims and heresies. He keeps himself aloof from prophetic guidance and therefore, is unable to receive light from

God. His so-called good deeds will be ineffectual like a mirage and he will not be rewarded for these deeds. Parable of worldly life in verses 10:24 and 57:20 makes use of our experience of an attractive plantation full of promise, mowed down by some natural calamity. The message is convincingly conveyed.

Summing up, it may be stated that the natural phenomena in the Quranic perspective are indicators of Allah's sovereignty and power in the universe. These are witness to His oneness and uniqueness. These are signs foretelling the Day of Judgement and are evidences of various laws governing this universe. One can understand the attributes of Allah by observing and experiencing these phenomena. They convey the message that man should be grateful and subservient to Allah alone and this is the right way to live on this earth.

Conclusions:

The Muslim scientists' plea that the Quran makes reference to scientific facts can, by no means, be ignored altogether. Their import might be any as stated above, Yet they are scientific phenomena and the Quran exhorts us to make it a point to study them. Therefore, we must draw conclusions satisfying the scientists' plea without jeopardizing the Quranic perspective, as under:

First, science in Islam is neither secular nor mundane. It is one of Allah's favours on man designed to be of service to him during his tenure on earth. It is pregnant with arguments for Allah's oneness and defines obligations of man towards Him. Therefore, the guise of science in western civilization is far from being realistic. That is why, it is overladen with mundane purposes and has a tendency to become dangerous for man's life.

Secondly, science is not an end in itself but a means to comprehend realities of the universe, the foremost being to recognise the Creator

alongwith His true attributes. God reveals Himself through His creation. Therefore, each discovery should bring the scientist nearer to God and every invention making life easy, comfortable and luxurious should make the user more and more grateful to Allah.

Thirdly, just as the natural phenomena have a message to convey, science being a derivative of these phenomena, must also have a message. Hence, it is imperative that science should be taught with religious orientation. Books on science written without moral conclusions are apt to make its logic lop-sided and bereft of Divine blessings.

Lastly, the exercise of the Muslim scientists to extract science out of Quranic verses needs caution. This exercise tends to ignore the contextual meanings of the verses to make room for scientific import. This would result in making the countenance of Islamic science similar to that of western science. It is high time that the enthusiastic Muslim scientists place the Quranic precept in the forefront.

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REFERENCES

1. The Quran, 2:163-164
2. cf The Quran, 30:46-50
3. The Quran, 22:60-65
4. Ibid., 14:32-34
5. Ibid., 39:7
6. Ibid., 56:63-70
7. Ibid., 24:35
8. Ibid., 24:39-40

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THE OBJECT OF SCIENTIFIC PURSUIT IN THE
WORLDVIEW OF THE QURAN

It is a matter of great significance that the Quran describes reason as the basis of faith. An ardent student of the Book finds it largely comprising of discourses regarding (i) the attributes of the Almighty Allah, (ii) the commission of the prophets of Allah and (iii) the eschatology. These three subjects are interspersed in whole of the Book and one is astonished to find that nowhere the Quran thrusts its contention upon its audience. It justifies and argues every theme by means of arguments drawn from nature or the psyche of man¹. Surprisingly, when the Prophet Muhammad's (p.b.u.h.) audience asked for some sort of miraculous appearance of the Providence or His angels before they could be convinced of the veracity of the Prophet's message, the Quran dispensed with such demands merely by saying that in the past miracles had failed to convince people. Hence a rational approach was now necessary:

"And nothing hinders Us from presenting signs except that the people of old had discredited them. We presented to Thamud a she-camel as a visible sign; yet they maltreated her. We give signs only by way of warning". (17:59)

Thus the Quran does not deprive the rational being of his prime quality of reasoning for the sake of gaining his allegiance.

On close examination of the signs drawn from nature (and these signs make the bulk of Quranic arguments) one finds that these are no more than natural phenomena which call for scientific inquiry. These have been drawn from the realm of astronomy, astrophysics, geology, botany, physiology, climatology and sciences of the like. People have counted as many as 750 verses of the Quran on this subject². According to Maurice Bucaille, the Book did not contain a single statement that was assailable from a modern scientific

point of view³. The Muslim scientists have felt the need of producing scientific literature wherein the Quranic view finds a pivotal position⁴.

The Quran encourages scientific inquiry because it is more fruitful for perception of realities than mere faith. A subject of such fundamental importance has not gone undefined in the Book. In normal practice, a scientific pursuit requires the use of senses to make observations and of intellect to draw conclusions and enunciate theorems. In the process one lays hands on material gains, which ultimately become an end in themselves. That is why, science is considered secular and mundane. The Quran, on the other hand, relies on the use of senses and intellect but at the same time defines more elaborate functions for the intellect. This results in an approach toward science which is quite different from the one we are familiar with.

Let us see how the Quran develops this theme. The Quran urges us to use our faculties of hearing and observing to the maximum when it says:

"Of His Signs is your slumber by night and by day, and your seeking of His bounty. Herein indeed are portents for those who hear"⁵. (30:23)

"Have you not seen how Allah drives the clouds, then gathers them, then makes them layers, and you see the rain come forth from between them; He sends down from the heaven mountains wherein is hail, pelting with it whom He will, and averts it from whom He will. The flash of His lightning almost snatches away the sight. Allah causes the revolution of the day and the night. Herein indeed is a lesson for those who see". (22:43-44)

This hearing and seeing is not limited to its physical use only but is intended to be an instrument for drawing conclusions and learning lessons.

Next comes the role of the mental faculties. In this sphere the Quran expects much more from a scientist than mere inferences of physical nature that are generally considered the end of a scientific pursuit. The Quran uses the words - Aql, Fiqh, Ibrah, Tazakkur and Tafakkur - to describe the functions of the mental activity of a true scientist.

Aql, according to William Lane⁶, signifies intelligence, understanding, intellect, reason and the knowledge of the quality of things, of their goodness and badness, etc. Every scientist is normally required to use this quality in his pursuits. The Quran points out the use of this quality in verse 2:164.

"Lo! in the creation of the heavens and the earth, in the alternation of night and day, in the ships that sail the ocean with cargoes beneficial to man, in the water which Allah sends down from the sky, thereby reviving the earth after its death, and dispersing therein all kinds of beasts, in the circulation of the winds and in the clouds obedient between heaven and earth, are signs for people who have sense"⁷.

This verse alludes to the harmony in nature in spite of the contrasts prevalent here and there. Omnipotence and beneficence of the Creator is self-evident. Once a person applies his mind to the phenomena described in the verse, he will find instruction for the cultivation of his mind.

Fiqh means comprehension and thorough understanding of a subject so as to learn the science of a thing. Ilm is the outcome of intellect but Fiqh is a function of heart and mind which is full of emotions and feelings.⁸ Therefore, Fiqh takes the pursuit beyond material gains. The signs of Allah are not unveiled to a person whose prime concern is materialistic. The use of this faculty of understanding is invoked in verse 6:98, which says:

"It was He that created you from one being and furnished you with a dwelling and a resting place. We have made plain our revelation to men who comprehend".

The verse argues oneness of God by the multiplicity of human race and fulfilment of their needs through a perfect planning.

Ibrah means an evidence whereby one passes from the knowledge of what is seen to the knowledge of what is not seen. Thus one learns lessons from the observed facts. This Ibrah has been invoked while explaining how Allah brings forth constituents of milk from a conjunction between the contents of the intestine and the blood:

"In cattle, too, there is a lesson for you. We give you to drink of that which is in their bellies, from betwixt the refuse and the blood, pure milk palatable to the drinkers". (16:66)¹⁰

The verse describes a sign of Allah's beneficance, He is a great Designer with subtle means to produce unimaginable results.

Tazakkur, according to William Lane,¹⁰ means to become reminded of something. In Quranic usage, too, being reminded through association of ideas is Tazakkur. The knowledge of all the realities has been endowed to man, who very often forgets it. The signs available in the Universe remind him of these forgotten realities. For example, if someone is not convinced of the Day of Resurrection, he should observe how Allah gives life to barren soil by means of rain. Similarly, Allah has created things in pairs which are complementary to each other. If life in this world seems lopsided and there is no explanation to justify this lopsidedness, then why should a man not think of another life in the Hereafter which should be complementary to this world. The scientists are required to call into play the mental faculty of Tazakkur in the following verses:

"And He cast into the earth firm mountains lest it should quake with you, and set streams, roads and landmarks so that you may be rightly guided. And by the star-s they are directed. Is He then who creates like him who has created nothing? Will you not then be reminded". (16:15-17)

The verse implies that it is unreasonable on the part of man to associate other gods with the Almighty Allah, when no one equals Him in His attributes.

Fikr means repeated consideration for the purpose of seeking to discover its meaning or arranging of known things in the mind in order to attain to the knowledge of an unknown thing . Thus Tafakkur is reflection to arrive at the wisdom lying hidden in various occurrences. The Quran promises greater reward to persons who are in the habit of reflection. This function of mind leads one to the metaphysical domain of life, to feel the presence of Allah in the Universe, to understand divine laws in force on this planet, and to perceive the Hereafter approaching in the wake of death. The Quran says:

"Your Lord inspired the bee, saying: choose your habitations in the hills, in the trees and in that which they thatch; they feed on every kind of fruit, and follow the paths of your Lord made smooth for you. There comes forth from their bellies a drink divers of hues, wherein is healing for mankind. Surely in this there is a portent for people who reflect". (16:68-69)

Production of honey by a very complicated process and harnessing the bee for the benefit of mankind is a great portent of Allah's mercy and sustenance.

Another verse reads:

"Allah takes away men's souls upon their death and soul of the living during its sleep. He keeps that soul for which He has ordained death and restores the rest till an appointed term. Herein indeed are portents for people who reflect". (39:42)¹²

The verse means that life of the human beings is under strict control of the Creator. Man rehearses daily for his resurrection on the day of judgement.

According to the Quran, Tafakkur should be the ultimate endeavour of every scientist. If properly carried out, it unveils the obscure realities which are of paramount importance for the future of man. He does not see the universe as a jumble of causes and effects which came into being through accident. He observes an accomplished design in it. This design is so perfect and full of wisdom that it much have been brought about by the omnipotent and omniscient God whose will is supreme and binding on his creation. He is so wise that he must not have created the universe as a plaything. Everything here is perishable. The world as a whole must also face an end. Man, who enjoys privilage in this world, must be answerable to his Creator and should face the doom if he fails to discipline life as desired by his Lord. The Quran reveals that such are the conclusions a true scientist arrives at when he carries out the scientific pursuit in accordance with the Quranic injunctions. It says:

"Lo! in the creation of the heavens and the earth and in the alternation of night and day are tokens for men of understanding such as remember Allah standing, sitting and reclining, and reflect on the creation of the heavens and the earth, (and say): O Lord! You have not created this in vain. Glory be to you! Preserve us from the doom of fire". (3:190-191)

In surah 45, the Quran describes some of the natural phenomena followed by verse 6 which reads:

تلك آيات الله نتلوها عليك بالحق

"These are the portents of Allah which we describe before you with an aim". Maulana Islahi, an eminent exeget of the Quran, explains this verse in a manner which is conducive to the above contention. He says:

"The word Al-Haq in this verse denotes the definite and correct conclusion reached after reflection on the above portents. So far as mere pondering over the signs is concerned, people do this job but with a specific and limited point of view,

with the result that either they cannot arrive at the realities underlying these signs or they do reach correct conclusions but these happen to be against their wishes and therefore, they ignore them. An astronomer does ponder over the signs in the heavens and a geologist the sign in the earth, an anatomist studies human body, a zoologist looks into various aspects of animal life, a meteorologist gathers much out of the revolution of night and day, the direction of winds and the climatic conditions but all of them have a short-sighted approach. They use telescopes and microscopes to observe the tiniest of objects, yet they are unaware of the most gigantic of all realities. The meteorologist would foretell that on a following day the weather will remain hot and dry because of such and such factors. This prediction often comes true and the factors may also be correctly defined, but these observations are limited to the study of atmosphere. The meteorologist is not concerned with the question as to who is responsible for the variation of weather and what are his rights and obligations. The fact of matter is that the variations and changes observed in this universe are meant to guide man to the above question. He is required to discover its answer himself or if anybody else provides him with a plausible answer, he is expected to own it and act accordingly".¹⁹

When we judge the modern science according to the criteria given in the Quran, we find in it complete lack of Tafakkur, Tazakkur and Ibrah. That is why it has become divorced from metaphysics, ethics and religion. The scientist has forgotten God and is unaware of his place in the Universe. He is not mindful of the realities of life and death. He has become a prophet of gloom having no inner light to guide him. He is piling up knowledge for destructive purposes and the mankind is awaiting disaster wrought by the scientists. Salvation of the mankind lies in adopting the Quranic view of the scientific pursuits.

NOTES

1. The fact is asserted in the Quran in verse 41:53 as follows:
 "We shall show them our portents on the horizons and within their self until it is manifest unto them that this is the Truth".
2. El-Nejjar, Zaghlo1 R., The limitations and the Teachings of Science, Amer. Jour. Isl. Soc. Sci., Sept.1986. p.67.
3. Bucaille, Maurice, the Bible, the Quran and Science. American Trust Publications, 1979, p.vii.
4. The Late Dr. Ismail al-Faruqi established the International Institute of Islamic Thought in America in 1981 with the expressed desire of 'Islamization of Knowledge'. The Association of Muslim Social Scientists, Indiana, USA, is also working on these lines.
5. Another verse of similar import is 16:65.
6. Lane, Edward William, Arabic-English Lexicon, William & Morgate, London, 1874.
7. Other verses of similar import are 16:67, 30:24 and 45:5.
8. Islahi, Amin Ahsan, Tadabbur-e-Quran, II, Markazi Anjuman Khuddam-ul-Quran, Lahore, 1976. p.500.
9. Lane, Edward William, Loc cit.
10. Another verse of similar import is 23:21.
11. Lane, Edward William, Loc.cit.
12. Other verses of similar import are 13:3, 16:11, 30:21 and 45:13.
13. Islahi, Amin Ahsan, Tadabbur-e-Quran, VI. Faran Foundation, Lahore, 1978. pp.306-7.

THE LESSONS OF TECHNOLOGICAL DEVELOPMENT IN QURANIC PRECEPTS

Technology is defined as "the invention and employment of artefacts i.e. the materials altered through human agency for human uses"¹. It is defined more pragmatically as "The tools, techniques, procedures, things; the artefacts fashioned by modern industrial man to increase his power of mind and body."² In this sense of the word man has employed technology from the times immemorial and the discovery of ploughpoints and simple workmen's tools in the ruins of ancient cities and of extensive irrigation systems of ancient Egypt and Iraq are witness to it. During the recorded history there were periods when technology made tremendous strides. However, the advent of the age of Science two hundred years ago was accompanied by spectacular progress of technology. It is rightly said of modern technology that "it has enhanced human power beyond anything known or even dreamed of before. This is a power over matter, over life on earth, and over man himself; and it keeps growing at an accelerated pace."³ It continues to move forward in quite unpredictable ways and has the capacity of going out of control of the man who has invented and harnessed it so far. This aspect of modern technology has caused worry among the humanists and social philosophers. The Muslims are also worried about the negative effects of this technology which are manifest among the most developed nations and the developing nations are finding it difficult to exploit the advantages of technology without experiencing its ill-effects.

Technology is one of Allah's Favours:

A Muslim's concept of life stems from the precepts of the Holy Quran, which attributes man's ability to harness the powers of nature to Allah's benevolence. Allah created man to act as His vicegerent on earth and subjected the powers of nature in his service. Just as God taught the birds to fly, to make nests, to find food and to procreate, He bestowed on man --- the best of His creation - the powers of perception,

reasoning and inference. Having created everything the man would ever need, He keeps on inspiring him how to utilize it for his well-being. Man has accordingly resorted to agriculture to grow a large variety of food, harnessed waters to irrigate land and to generate electrical energy, invented vessels to float in the ocean, conserved solar energy, and so on. The Quran makes mention of this fact in the following verses:

Allah is He who created the Heavens
and the earth and sent down water
from the clouds, then brought forth
thereby the fruits for your provision.
And He subjugated to you the
rivers. And He has made subservient
to you the sun and the moon
pursuing their courses, and He
has made subservient to you
the night and the day. And He
conferred upon you of all that
you asked Him. And if you count
Allah's favours, you will never be
able to enumerate them. (14:32-34)

Thus science and technology (S&T) as well as their products are, in the Quranic perspective, bounties of Allah bestowed by Him on man to be of service to him. The Quran, therefore, is not against technology. Rather it enumerates a number of its products such as apparel, woollens, ornaments, tentage and armour and describes them as Allah's favour.⁴

God's creation is not without planning. He unravels the advantages of S&T to man according to His own design and programme. He says:⁵

"And there is not a thing but with Us are the treasures of it,
and we do not send it down but in a known measure."

Technology is not Omnipotent

Modern Technology, with a tremendous record of its successes, tends to claim its omnipotence. The Quran makes man recall that he is neither the designer nor the creator of anything. Rather he discovers laws to consume the raw material created by God to his benefit. He is successful only to the extent which Allah wills that he should attain. He can dig tube wells and obtain water so long as God wills. But if water should sink away, there is none to bring him flowing water.⁶ Man voyages in vessels laden with goods and reaches his destination comfortably. It is Allah by whose leave this voyage is made. Had He willed, He could sink the ship and there could be nobody to help and come to rescue the people on board.⁷ Man can sow the crops and irrigate the fields but God can make the crops crumble to pieces even at a juncture when man is planning for their harvest.⁸ By these examples, the Quran makes it clear that it is only Allah who is omnipotent. He controls the reins of everything, but man, with his wishful thinking, considers himself the master of the universe.

Technology is not value-laden

Thinkers have not been able to resolve so far whether technology is value-less or value-laden. According to William Lowrence, "technical activity must be considered value-laden in two senses: technical people's social values and value perceptions affect their research and service; and that work, in turn, affects the value-situations of others in the public".⁹ Sardar is of the view that "there is nothing neutral or value-free about technology. Modern technology is the product of the particular history and culture of Western civilization, and it carries the seeds of its cultural origin wherever it goes."¹⁰ On the other hand Pacey describes technology as 'culturally, morally and politically neutral, essentially amoral, a thing apart from values.'¹¹ The former two thinkers attribute value to technology because of the social values of the technologists or the history and culture of their civilization. Obviously these factors are not intrinsic to technology but external

to it. A machine designed to spin yarn would accomplish its job equally well in the hands of a pious worker and an irreligious person. The process of fermentation in itself is very beneficial to man and rich in possibilities in the manufacture of chemicals and drugs, yet it is the man who decides whether to use dates and grapes to make vinegar or wine. From a Muslim's point of view, in the latter choice, the question of value creeps in because of a factor external to technology. Thus it may be concluded that technology is essentially apart from values. However, it is an instrument which can be used for both good or ill purposes.

This point may further be elaborated by an example from the life of the Prophet Muhammad (p.b.u.h.). When the verses prohibiting drinking were revealed at Madina, he banned the use of Muzaffat, Nageer, Hantam, and Dubba - various types of vats used for fermentation. However, when the instructions about drinking were fully implemented and there was no likelihood of the misuse of the vats in the Islamic society, the Prophet withdrew the ban, allowing use of vats for purposes other than making wine.¹²

Causes of Ill-effects of Technology

Now let us consider another important question - if technology is not value-laden, why do we experience its ill-effects? It is argued that large scale manufacture has destroyed the moral fabric of the human personality and society, and has led to mortal conflicts at social, political, economic and international levels.¹³ Organised crime has become a great threat to social order. Every great advancement has an immense impact on human culture and social behaviour. The danger of global nuclear war is acute and the situation is pregnant with the chances of destruction of human civilization. These are hard but again external to technology itself. It is the man behind the wheel who matters. He is to be blamed for the misuse of technology. Think of a knife. It is an instrument of great benefit to man. But if one uses it to strike the belly of someone to kill him, it is not the fault of the knife but of its user. According to the Quran, every bounty of Allah

can be misused. Even such simple and harmless things as the wealth and the progeny of man are described Fitnah i.e., a means to try the faithfulness of man. This type of ordering was necessary in the scheme of things as designed by the Almighty Allah, who created this world to try the humankind. Therefore, correct approach for man here is to use every bounty of Allah to satisfy his genuine needs and remain grateful to Him. If he misuses the bounty against the commands of the Almighty, he proves himself to be disloyal, ungrateful and fit for His chastisement.

This fact is brought home in the Quran at a number of places. For example, man is required to remember the benevolence of Allah while riding a ship or wearing garments designed to protect him from the vagaries of seasons or the weaponry of the enemy.¹⁴

Two Models of Technologically developed nations:

In order to explain the point further, the Quran has presented two models of the society affluent with the products of technology and discussed their character. The first model is represented by the society during the reign of David and Solomon (pbut) - the prophet-kings of Jewish history. According to the Quran, this period was characterized by unprecedented advancement in the metallurgy of iron and copper; the metals were put to use in making armours. Solomon's navy of ships had connections with far off lands; Solomon utilized forces, manned by creatures other than human beings, in large construction works. Affluence of this period is not questioned by the present day researchers who describe it as a period of exceptional intellectual and cultural change in which industrial revolution was brought about. Navy was organized and the united kingdom of Israel reached the zenith of its grandeur.¹⁵ In spite of this affluence, the Quran says, both the kings were fully alive to their duty towards God. They were grateful to him. They attributed their successes not to their own actions but to the favour of the Almighty Allah. They firmly believed that God tries the human beings

with favours and affluence. Therefore, they were all obedience towards Him. They always acted in accordance with His commands. God was also kind and their peoples flourished. Such a character of a technologically developed nation finds Allah's approval and blessings and is a good example to follow.

The second model for developed nations mentioned in the Quran is that of Aad, Thamud and the people of Sheba. Aad, because of their might, had no match among the nations of their age. Their might and affluence revealed itself in their monuments, lofty buildings, fortresses and tyrannical behaviour. Thamud excelled in the art of hewing houses in the mountains and making lush gardens. People of Sheba were a nation with flourishing agriculture and trade. Yet all these nations used their affluence and technology for making mischief and committing inordinacy in the land. Because of their ingratitude God let his chastisement fall on them. Aad and Thamud were destroyed by natural disaster and the people of Sheba saw withdrawal of the sources of their affluence and the whole community perished. The character of these doomed nations invites Allah's wrath and is a bad example to follow.

Modern Technology and new Ethics:

Unfortunately, technological development in this age is following a pattern reminiscent of the one followed by the tribes of Aad, Thamud and the people of Sheba. No doubt, there has been a sustained growth during the last two hundred years and it has transformed every phase of life of modern man; yet this development has eroded the foundations from which norms could be derived. It has failed to provide social harmony, international justice and moral and spiritual fulfilment. The humanists today are advocating containment of technology and adoption of new ethical policies and moral discipline. From the Quranic point of view, the human values are ingrained in the nature of man and are the same for all times. Therefore, there is no need of evolving a new code of ethics. What we require is to create awareness of human values and man's responsibility before God. Technology should not be

allowed to enjoy unrestrained exercise of human will. It must be subjected to remain within the limits ordained by God. Only then mankind will be able to avoid the ill-effects of technology and the disastrous end as a result of God's chastisement.

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