Economic System of Islam- Production: Learning & Experimentation

Summary of 8.5 “Production: Qur’anic Foundation”

Instead of looking at curves and theory we started from the ideological foundation of production and productivity in Islam.’ We indicated that the basis for productivity in Islam is not mearly economic survival but also seeking the pleasure of God by responding to his directives in the Quran to explore the universe and benefit from it.’ We quoted quite extensively from the Quran that exploitation of various resources is something commendable.’ We discussed varieties of agricultural resources, water resources and fishing resources that were mentioned.’ The Quran goes beyond this by encouraging people to explore and benefit from the various laws created by God in nature and by trying to understand the various phenomenas.

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8.6”””” Production: Learning and Experimentation

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Host:’ How does Islam view science in particular?

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Jamal Badawi:

Science is basically the knowledge of natural phenomena and rational explanation of existence on the basis of observation which can be confirmed by experimentation and criticism.' The basic elements of science are observation and experimentation.' The senses and reason are used in order to understand and connect observation.' As far as the senses are concerned in the Quran there are frequent exhortation on the use of senses.' Many times we read in the Quran 'don't they look,' 'don't they see,' 'don't they hear,' which are down to earth: seeing, hearing and watching.' The Quran even describes people who are turn away from truth as deaf and blind.' Among the worst people in the sight of God are those who are deaf and blind (not physically) but people who do not use their natural faculties.' In the Quran it threatens that in the Hell fire there will be lots of people with ears with which they do not hear and eyes with which they don't see (again not physically) as they refused to use these capabilities.' The Quran describes the believers it says that those who are reminded of the signs (observing, watching and seeing what is in the universe) of God they do not just fall deaf and blind.' In all of these examples are easily found in the Quran which show how using the senses and trying to understand the universe are so important.

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Experimentation in its nature presumes that one has observations.' Observations stimulate one to experiment.' We find that in the Quran there are many hints which can easily be construed to refer to the use of experimentation to understand things around us.' For example in (16:69) it speaks about honey and it says 'wherein is healing for men' which is a clear reference that there are certain medicine values in honey.' In order for the audience who received this message from the Quran to make sense of this he or she would have to study chemistry in order to find out what the ingredients in honey are that provide medicinal value.' In (57:25) it talks about iron 'We sent down Iron, in which is (material for) mighty war, as well as many benefits for mankind." This is an inducement to study the properties of iron so that we can derive the various benefits and uses from it.' This does not only pertain to iron but is an example.' This takes us into physics and chemistry.' We frequently get references to the creation of the human and that the biggest sign of the existence of God and His compassion is in ourselves.' This is clear reference to the study of biology and anatomy which would help one find out about the marvelous being that God has created.' One can refer to areas that hints the study of anthropology.' In some verses in the Quran it says 'don't they walk on the earth and find out the destiny of nations before them." This goes into anthropology, exploration and trying to find out what happened to previous nations.' In chapter 2 when it refers to the creation of humankind, Adam, it says that God taught him al-asma'a kulaha.' Al-asma'a literally means names but many interpreters of the Quran explain it to mean that God taught Adam the nature of all things which is something extra and Angels themselves did not have access to.' Knowledge of the nature of things or knowledge of creation is a clear stimulus for the study and understanding of the property of those aspects.' Islam herald new spirit, which replaced the spirit of speculation that was predominant in the past with something that is based on firm knowledge which is provable and subject to experimentation.' In a Quranic verse it says that conjecture is no good substitute for truth or something that is based on firm knowledge.' To conclude among the greatest contribution of Islam to humanity is the idea of experimental approach.

Host:’ When most think of the experimental approach they think of it originating with Roger Bacon, who would we respond to this?

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Jamal Badawi:

Roger Bacon was born in 1214 which is the 13th century.’ Islam and the revelations that we cited were revealed in the 6th century.’ We are talking about 600 year before Roger Bacon was born when all these concepts were ingrained in the minds of many Muslim scientists.’ It is not a theory but during those centuries there were valuable contributions made by Muslim scientists from all over the world to this experimental approach.’ This is why we find that some of the fair historians and writers clearly disagree with giving credit of the experimental approach to Roger Bacon.’ Robert Briffault in his book The Making of Humanity strongly rejected the notion of giving credit to Bacon for the introduction of the scientific method.’ In fact he says that Bacon was simply one of the apostles of Muslim science that was transferred to Christian Europe.’ In fact, one issue of Encyclopedia Britannica says: ‘It is beyond all doubt that Roger Bacon was profoundly versed in Arabian learning (it should be Muslim learning) and derived from it many of the gems of his philosophy.” This is not an opinion given by Muslims.’ We find many western scholars who come to the same conclusion that Roger Bacon was really a student of Islamic Science and the new experimental methodology introduced by Islamic civilization.

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Host:’ What practical effects do these teachings have and when was this effect felt?

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Jamal Badawi:

The scientific progress and the introduction of this scientific method started from the Quran itself which generated this new spirit of research and sort of rebellion against the old approach of rigidity, dogmatism and imitation rather than finding the information out for one's self.' This type of progress seems to have manifested itself quite early under the Umayyad Dynasty.' Aside from whatever deviations the Umayyad Dynasty committed in terms of the system of government it is fair to say that during the Dynasty there were lots of poets and scientists.' In the entry of the Caliph's court there were lots of scientists which included Muslims, Christians and Jews.' In fact, during the reign of the Umayyads we find that lots of physical evidence was left to show the great progress that was achieved.' For example during the Caliphite of Abdul Malik's the Mosque of Omar, in Jerusalem, was ordered to be built.' During the reign of his son Ibn Al-Walid two signs were left in the Al Amawi (mosque in Damascus) and Al Madina Mosque.' The Golden Age of Islamic scientific progress was during the Abbasid Dynasty which ranged between the 8th till the 13th century (750-1258CE).' Parallel to that was the Umayyad Dynasty in Spain which survived from the 8th till the 15th century (755-1492CE).' For five centuries as a French writer Jack Risler put it 'Islam with its strength, learning and superior civilization dominated the world for at least five centuries." Many people think about the supper powers and their influence on the world which has been for the last century or so.' We are talking about five continuous centuries of Muslims carrying their banner throughout the world.

Host:' What are other centers of learning and research which sustained the progress you had just described?

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Jamal Badawi:

From the very beginning the place of worship was much more than jut that.' The concept of Mosque was much more than a place of worship as it was a center of learning on a local level.' Many historians also report that when the Muslim civilization was flourishing almost every city had a public library.' Many historians report endowments made to colleges, of scholarships established for students and about the respectable position given to anyone with knowledge.' Among the strong centers of learning in addition to the local city centers was Bait Alhikmah or House of Learning which was established in Bagdad as early as the 9th century under the Caliphite of Al-Mamoon.' This was a complex that held so many activities.' It was an academy, central library and a translation center which was a major step towards central learning and scientific approach.' Bait Alhikmah was responsible for the famous Bagdad school who's influence I should say continued till the 15th century; so we are talking about 600 years of scientific' activities.' This basically covers the eastern portion of the Western world. 'In the West the most important place was in Spain known as Toledo which was a very important translation center in which many of the works of Muslims was translated from Arabic into Latin in order which introduced it to the Western world which was responsible for the Renaissance.' In this center in Toledo all kinds of centers were studied: astronomy, mathematics, medical science, chemistry, botany and philosophy.' The first French Pope who adopted the name of Sylvester the Second who spent three years in Toledo learning from Muslim scholars and scientists.

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Host:' What is the connection of the Islamic civilization and the European Renaissance?' What was Europe like when the Islamic civilization began to take root?

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Jamal Badawi:

It suffices to use the term that is usually used by historians and scholars to refer to this period: Medieval Times or Middle Ages (which is objectionable because they seem to imply that the history of the world is the history of Europe) which is followed Renaissance.' The history of the world is not that of Europe alone there is no question about it.' Another name that used (which is a misnomer if we generalize it for the rest of the world) was the Dark Ages.' It was the Dark Ages for Europe but elsewhere that was not the case.' There was a flourishing civilization side by side this state of decay at this particular period.' The Dark Ages of the European continent extended between the 5th or 10th (almost 500 years).' To describe the state of this time it is better to refer to European and non-Muslim historians.' In Singer's book Science and Civilization he details the 'highly savage state in which the people in Europe lived." He speaks of the lack of personal cleanliness, of the poverty, the way people dressed and lived in terms of accommodation at a time when life was much more civilized and advanced elsewhere in the Muslim world.' An interesting reference and quite extensive study called The History of Intellectual Development in Europe (two volumes) by John Draper where he discusses science and how Spain contrasted quite clearly with what was going on in Europe.' He said that in Europe, suppression of science was quite normal, the study of material phenomena was attributed to the will of spirits.' If a person had an accident or got a fever he ran to the nearest Saint's shrine hoping that he will be cured by a miracle.' At that time in the Muslim world physicians were busy discovering many medicinal cures dealing with various ailments.' In fact like the Singer, Draper also used the term barbaric to describe the kind of life in which Europe has sunk into.' As we indicated earlier this is quite a contrast between what was going on and 'Dark Ages' is an overly generalized statement.

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Host:' Many people claim that the restoration of science in Europe was simply a restoration of Greek heritage?

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Jamal Badawi:

This is a statement that is made but which is not correct.’ For example, in the famous volumes Then Outline of History by the late H.G. Wells who said that the Greek did not really have much knowledge about the past of mankind and that the knowledge of geography was restricted to the Mediterranean area as well as the frontiers of Persia and that the state of knowledge was based on rudimentary speculations and were very poor in experimental apparatus.’ The same assessment was given by A.N. Whitehead in his book Science and the Modern World in which he agrees with Wells when he said that the Greek were overly theoretical, the science was an offshoot of philosophy.’ The same kind of state applied to the Romans.’ We are not saying that there was no contribution from either the Greek or Roman civilizations which would be rather unfair but in terms of scientific development and methodology it was very poor and not based on experimentation which is the foundation of modern science.’ So it may have been good for its time but it was not the foundation of modern science.’ It is quite erroneous to claim that the European Renaissance was based simply on the restoration of the Greek-Roman heritage.’ It was based very strongly as many historians admitted on the flourishing Islamic civilization with its new approach and outlook.

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Host:’ Are there specific historical indicators that show this influence?

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Jamal Badawi:

First of all, the historical fact that is quite readily admitted is that for several centuries the language of the Quran was the international vehicle for scientific development.' Just like today where most of the advanced work in technology and science is in English, French or German.' At that time anyone who wanted to learn anything about science would have had to be versed in the Arabic language.' This shows that the scientific works were in Arabic.' A person who wanted to learn anything about science would have to be versed in the Arabic language.' Many historians say that a person who wanted to learn things about the sciences (physics, chemistry, medicine, astronomy, mathematics) could not do it in Europe because of the atmosphere and they reported that the only place left was for them to go to Muslim universities in Muslim Spain.' Many of the people who tried to popularize Muslim science in Europe were given the term Muhammedans simply because they wanted to absorb the new scientific approach that Muslim scientists introduced.' In fact Roger Bacon, himself, was accused of being a Muhammedan because he followed the path of scientific approach and for that he spent 14 years in prison.' If we really look at it there is ample evidence that students from all over the European continent flocked to Muslim universities (particularly those in Spain) to learn through Muslim science and scientists brought.' They brought back the knowledge with them which was the spark that later resulted in the European Renaissance.