

SCIENCE AND RELIGION IN THE SERVICE OF HUMANITY

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Published by

Local Society Initiative (LSI) and
The Nigerian Association for the Study and
Teaching of Religion and Natural SCIENCES
(NASTRENS)
University of Ilorin, Ilorin, Nigeria.

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First Published 2006

ISBN 978 - 978 - 48449 - 0 - 1

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A RE-EVALUTION OF THE RELATIONSHIP BETWEEN ISLAM AND NATURAL SCIENCE: HUMAN EMBRYONIC AND FETAL DEVELOPMENT AS A CASE STUDY

ADEGOKE K. ADEKUNLE

Introduction

Islam

is a compressive and perfect way of human life as it leaves nothing untouched about affairs of the physical world and the next world in order to offer the guidance and instruction to humanity¹ Quran says:

Nothing have we omitted from the Book²

To you a book explaining all things, a guide, a mercy and glad tidings to the Muslims.³

And all things have we explained in detail⁴

Thus Islam does provide useful and viable information as regard the physical world by correcting the previous mistake ideas about the nature of affairs and replace it with the genuine one, one of which is going to be discussed in this paper. It is indisputable fact that Islam inspired the universal Muslims irrespective of their language, to achieve rapid progress in the various scientific field such as Mathematics, Astronomy, Medicine, Sociology Architecture, Geography and Anatomy.⁵ Therefore, there is no limit to the extent to which Islam has gone in making known new areas of learning which modern scientists now regard as new discoveries. It is this Islamic legacy and heritage, which have impact on western thought that necessitates the study of natural science *vis a-viz* Islamic contribution toward it before the recent scientific discoveries of the west. The human embryonic and fetal development in his mother's womb is going to be examined in order to find out how deeper Islam has

gone in exposing this scientific facts before the recent scientific discovery on human reproduction

Definition of Terms

The word "re-evaluation" is a conjunction of two words, "re" which means "again make something in a different way"⁶ while "evaluation" is an act of finding out or deciding the amount of value in a thing⁷. Relationship is the way people, things or ideas are joined (connected) to each other⁸. Natural science is a deep study of nature of the creation of plants and mammals through observation and experimentation.⁹ Islam literally means submission. It is etymologically derived from the syllabic arabic verb "*aslama*"¹⁰, which means to submit, to surrender or to abide with¹¹. In the technical sense, Islam could be defined as a total submission to the divine will of Allah as enjoined in the Quran¹² and sunnah¹³

Islamic and Embryonic Foetal Development

It was not known by some people that Islam contains several scientific facts referring to the developmental stages of embryo and foetus until the early twentieth century of the Christian era when the West conducted deeper scientific study of the embryo and foetus¹⁴. Prior to this time, several theories have been propounded by various people but which could not meet the test of validity. For instance, both Aristotle and Galen opined that human embryonic development was similar to that of the chicken by comparing the chicken embryo with that of human in the second century of Christian era. Also in the sixteenth century, some scientists believed that the human embryo develops from menstrual blood and anonymous seed. The invention of microscope in the early part of the seventeenth century of Christian era brought up the discovery of spermatozoa, which was also mistakenly believed to contain a miniature or physical replica of human being. This erroneous belief robbed the female of their contribution to human embryonic development. The fact that the spermatozoa and ovum were necessary for conception was not known until the eighteenth century of Christian era¹⁵

Islam had already discovered these scientific facts in the seventh century of Christian era from the Qur'an and *sunnah* of the prophet

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Muhammad (S.A.W) in the Arabian peninsular. The problem however, was that these terminologies were not clearly understood since they were scientifically unknown at that period¹⁶. This is one of the reasons why the Islamic classification of embryonic stages becomes a surprise to the people, most especially non-Muslims, as it came into being in the seventh century of Christian era when nothing of that nature was known by mortal being.

Islamic Stages of Embryonic And Fetal Development

Various Quranic verses (*Ayat*) and *sunan* (plural of *sunnah*) have already pointed out some scientific facts on embryonic and fetal development of human being. Some of these Quranic verses and *sunan* are going to be looked into for the certification of these alleged scientific facts in order to exhibit the unanimous agreement of the Islam and Natural Science.

Qur'an says:

And indeed we created man out of an extract of clay, thereafter we made him as a drop (*Nutfah*) in a safe lodging, then we made the *Nutfah* (drop) into a clot (*Alaqah*) then, we made the cloth into a little lump of flesh, (*Mudgah*) then, we made out of little of fleshy bones (*Izam*) and then we brought it forth as another creation. So Blessed is Allah, the Best of Creators¹⁷.

There are six stages of embryonic and fetal development in the womb as it is enunciated in the above-mentioned Quranic text and they are as follows:

- I. *Nutfah* Stage
- II. *Alaqah* Stage
- III. *Mudgah* Stage
- IV. *Izam* Stage
- V. *Lahm* Stage
- VI. *Nash'ah* Stage

Nutfah Stage

Nutfah literally means a drop of sperm and ovum. It is the stage of releasing spermatozoa and ovum and their union or fusion by zygote (fertilized ovum). The zygote moves into the womb or uterus for implantation where it divides into two cells, then into four, then into eight, sixteen, thirty-two and so forth until there is a sphere of several hundred cells known as blastocyst¹⁸. At this stage, Prophet Muhammad (S.A.W) said that it would remain as a blastocyst for the period of forty days before it would now move to the next development stage of *Alaqah*¹⁹. On this, Qur'an says:

Was he not a *Nutfah* (mixed male and female discharge) of semen emitted (poured forth). So let man see from what he is created. He is created from a water gushing forth.²¹

'Alaqah Stage

This is a stage when the blastocyst would change to a clot of blood (*'Alaqah*) and it would remain like that for another period of forty days²².

Quran is referring to this stage when it says:

Then, he become an '*Alaqah* (a cloth)...²³
Then (Allah) has created man for a clot"²⁴

If pregnant woman has a miscarriage during this stage, only the blood clot will be released.²⁵

Mudghah Stage

This is a stage of little lump of flesh. The above- mentioned blood clot (*'alaqah*) would change to a little lump of flesh after the forty days of existence. The embryo would remain in this condition for another period of forty days as pointed out in the prophetic tradition which goes.

Verily, the creation of any one of you takes place when He is assembled (fusion spermatozoa and ovum) In his

mother is womb (uterus), for forty days, he is a drop, then he become a clot, in the same way (forty days) and then in same way (forty days) a mass (lump of flesh).²⁶

Keith Moore²⁷ advocated that this *mudgah* stage has been indicated in modern embryology. At this stage, it has been determined that after the formation of the embryo and placenta, the embryo receives nutrients and energy, thereby rapidly increasing the growth process²⁸. At this stage, the embryo looks like a chewed substance as its back resembles teeth – mark on a chewed substance²⁹. The thickly blood clot and some tissues would be released by woman if there is case of miscarriage or abortion at this stage.³⁰ otherwise, the embryo would move into the next stage.

'Izam Stage

'*Izam* literally means bone. The embryo, due to its reception of needed nutrients and energy transforms into skeletal bone which is referred to as '*Izam* stage. On this, Keith Moore *et.al* opine that the bodily mass (*mudghah*) rapidly gives way to the appearance of bone and muscle and that the embryo would acquire cartilaginous skeleton of bone. The bone development will commence in the embryonic limb buds from mesenchymal cell and the primary ossification centers appear in the femur, sternum (breast-bone) and the maxilla (upper jaw)³¹. Imam Shafi', the founder of Shafi' school of Thought opines that there would be cessation of embryonic development in *Mudghah* stage. Thus, the pregnancy is no more referred to as embryo but foetus. He added that there after, foetus would start to develop humanic organ systems such as fingers, toes nails, ears and eyes for post-natal functions³².

However, the Qur'an refers to the procreated being in the womb as *Janin*, which means foetus irrespective of the stage of development. This also is the basic definition in *Shari'ah*. This is not to say that the view of Imam Shafi' is not correct. His view of the commencement of fetal development at the *Izam* stage is helpful as it is closest to modern natural scientific facts and also as reflected in both the Quran and the *sunnah* of fetal growth³³.

Lahm Stage

Lahm literally means human flesh. This stage marks the development of definitive muscles in the trunk and limbs of foetus and the beginning of fetal movement in the womb. The muscle takes its position around the bone by clothing the bone (*Izam*). This, we refer to as the stage of *Izam*. *Lahm* stage continues the process of straightening and smoothing the bone which has already started in the *Izam* stage. It is this stage that the sex of the foetus would be identified

Nash'ah Stage

Nash'ah literally means growth or development. *Nash'ah* stage is the period of development of foetus in the womb. At this stage, the foetus has exactly resembled human being and could be easily distinguished from the foetus of other mammals. The stage also witnesses various types of growth in foetus such as the foetal skeleton which develops from the cartilaginous bones to solid calcium bone, nail growth, head hair growing physiological development of the nervous system hearing and feeling for post-natal function and the maturation of brain and spinal cord. This growth and development continue rapidly until foetus is ready for delivery³⁵

Qur'an says:

... Verily your Lord is of vast forgiveness. He knows you well when he created you from the earth (Adam) and when you are foetuses in your mother's womb³⁶

And we cause whom we will to remain in the wombs For an appointed term, then we bring you out as Infants³⁷

He created you in the wombs of your mother, creation after creation (*Khalqan min ba di khalqin*) In three veil of darkness (*Zulumatin Thalathat*)³⁸

Bucaille in collaboration with modern Quranic Exegets (*Mufasssirun*) interpret the *khalqan min ba'di khalqin* (creation after creation) as the several rapid growth of various organ systems of foetus in preparation for post-natal functions after his delivery. *Zulumatin thalathat* (three veils of darkness) on the other hand, is interpreted as the abdominal

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wall, the uterus and surroundings of the foetus which are placenta, embryonic membranes and amniotic fluid.³⁹

Acquisition of Soul

The modern scientific studies have not identified and determined the acquisition of soul of foetus which Islam made mention. The problem of modern scientific studies in this area lies in the inability to believe in the existence of whatever cannot be experimented, observed and tested.⁴⁰ The acquisition of soul of foetus is discussed in both Qur'an and *Sunnah*. On this Qur'an says:

...And we brought it (foetus) as another creation (*khalqan Akhar*). So Blessed is Allah, the Best of creators!⁴¹

Oh mankind, if you are in doubt about the Resurrection, then Verily, we have created you (i.e Adam) from dust, then from *nutfah*..... then from a clot, some formed (*Mudghah Mukhalaqah*) And some unformed (*Mudghah Ghayr Mukhalaqah*)⁴²

The terms used by Allah in the mentioned Quranic texts have been explained by the scholars to signify the process of ensoulment of the foetus which the modern scientific fact could not discover. Madkur interpreted *Khalqan Akhar* as used in the Quranic verse cited above as the ensoulment of the foetus which would serve as a perfection of the human creation in the womb.⁴³ At Tabari also interpreted *Mudghah Mukhalaqah* and *Ghayr Mudghah Mukhalaqah* as the souled foetus and unsouled foetus respectively.⁴⁴

Prophet Muhammad (S.A.W) capped it all when he said in a prophetic tradition related by Abdullah Ibn Mas'ud:

Verily, the creation of any one of you takes place when He is assembled in his mother's womb, for forty days, (he is) a drop, then he becomes a clot, in some way, and then in the some way a mass. Then an angel him four words of command are given (to the angel), his works that the writes down his for time, his life span. His works and whether he will among the wretched or he happy ones.....⁴⁵

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At this juncture, it is highly essential to point out the fact that the acquisition of life as could be thought by some people. Islam makes it known that acquisition of life has been endowed on spermatozoa and ovum at their inception in the male testis and female ovary respectively, before fertilization. It should be sensibly known that if both spermatozoa and ovum are not alive, the process of fertilization would not be able to take place

Conclusion

The paper discussed a re-evaluation of the relationship between Islam and natural science in the light of embryonic and fetal development of human being. The paper was able to have a critical look into the sequence of the developmental stages of pro-creation of human being in the womb or uterus in the light of Qur'an and *Sunnah* of Prophet Muhammad (S.A.W). The study underscored the fact that what Islam had recorded in respect of the stages of development of the child in the womb, more than fourteen centuries ago has just recently been discovered by the Western scientists who possess advanced scientific equipment and sophisticated scientific methods.

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