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**Critical Review of “The Qur’an and Modern Science Compatible or
Incompatible” by Zakir Naik Case Study : Embryology**

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المستخلص

الداعية الإسلامية ذاكر نايك ، ذَكَرَ في كتابه «توافق أو عدم توافق العلوم الحديثة و القرآن الكريم» نماذج من العلوم الحديثة الثابتة وربطها مع القرآن الكريم وتحديدًا مع الآيات التي فيها إشارات علمية. فمن هذا المنطلق سوف يكون موضوع المقال الذي بين أيدينا هو دراسة انتقادية حول موضوع علم الأجنة الذي ذكره الكاتب في كتابه. لذلك فیتبع هذا المقال هدف واضح و هو بیان مدي صحة الدلائل القرآنية أو الحديثية أو اللغوية و النحوية التي استند إليها ذاكر نايك لإثبات التوافق و الترابط الحاصل ما بين القرآن الكريم و المكتشفات العلمية الحديثة في علم الأجنة. الجدير بالملاحظة أن بعض الأدلة التي ذكرها الكاتب في هذا المجال هي ادلة صحيحة و مقننة.

الكلمات الرئيسية : ذاكر نايك ، توافق أو عدم توافق العلوم الحديثة و القرآن الكريم ، الإعجاز العلمي في القرآن .

Abstract

In his book, entitled The Qur'an & Modern Science Compatible or Incompatible, Naik represented samples of modern scientific achievements as well as referring to the related verse(s) in the Qur'an, i.e. the verses to which the scientific points are mentioned. The present paper is to review “embryology” in his book. In order to attain the implication of the verses of the Qur'an upon the scientific points, different viewpoints like exegetical, tradition, lexical and syntactic are used and scientific viewpoints are mentioned to attain the conclusiveness of the scientific points to which Naik considered. The result shows that his performance was correct in some cases.

Key words : Zakir Naik , The Qur'an & Modern Science Compatible or Incompatible , scientific miraculousness of Qur'an .

Introduction

One of the aspects of Qur’an miraculousness is related to science, whose latest sections are revealed by human progress in science. By means of modern science, interpreters and Muslim scholars have tried for many years to prove the claims of the Qur’an, corresponding with the reality, to non-Muslims. Zakir Abdul-Karim Naik is one of those who has tried, in this regard, by giving lectures in different countries. He is the founder and manager of Islamic Research Foundation. IRF is a general non-profit institute with responsibility for charitable affairs which is registered in Mumbai.

Scientific Miraculousness of Qur’an

The concept of the scientific miraculousness of Qur’an is related to verses of Qur’an which are:

1. scientific secret revealing; i.e. the scientific point is mentioned in Qur’an and nobody knew about it before the revelation of the Qur’an. Then by passing time the scientific point revealed in modern science. This scientific point should be like one which, by common ways, had not been attainable in the era of revelation of Qur’an.
2. The Supernatural predictions should be about natural events and historical incidents which no one knew in the period of revelation and also should be happened the very same prediction after the revelation. These predictions shouldn’t have been attained through common ways.

In general, if there is a prediction in Qur’an which was mentioned in previous revealed scriptures, or has been in scientific centers of Greece and Iran as well as scientific books and scientific viewpoints or has been innately comprehensible, it is not considered as scientific miraculousness (Rezaei Isfahani 1387 Sh, 29-30).

To put it simply, the scientific miraculousness is intended to Qur’an in the way that a scientific point is represented in present time which was unknown ahead, but Qur’an, revealed almost fourteen centuries ago, has referred to the scientific point. Naik described this issue in his book and present paper is to investigate it.

The principles of review

From the point of view of science, the existence of a phenomenon or a truth may be doubtful or definite and may be observable. So, if the trace of it is in the Qur’an, it should be kept in mind that the implication

of the words on the existence of that phenomenon can also have a possible or definite aspect.

Therefore, four distinct states are predictable:

1. There is a possible aspect from the point of view of the modern science, and implication of the Qur'an upon it is also probable.
2. In terms of science, it is definite and probably observable, but the implication of the Qur'an upon it is not definite.
3. The phenomenon has a possible aspect from the point of view of science, but the implication of the Qur'an upon it is definite.
4. The phenomenon is scientifically definitive and possibly visible, and the implication of the Qur'an upon it is verifiable.

In the first and second stages, the scientific justification of miraculousness is not feasible and, supposing, if such a situation exists throughout the Quran, it will never be applicable in this case and could not be relied upon.

In the fourth state, scientific justification is certainly feasible and, as far as the number of such cases is added, it will be more cogent and reasoned, but the third state is not currently applicable to such justification, although it can be used by scholars who believe in The Qur'an to be considered a proper clue in scientific research, and if they succeed in proving the certainty of the phenomenon or truth, especially if they provide the possibility of objective observation, not only they take steps in their scientific effort, but also add to the samples of scientific justification of miraculousness (Boroumand, 239-240).

In order to consider the fourth state, in the present paper, we examine different lexical, syntactic as well as tradition viewpoints. Moreover, we are required to examine the exegetical viewpoints accompanying the advancing of modern science in contemporary age like *al-Mizan* and *Nimumah*. We also refer to scientific viewpoints so as to examine the points mentioned by Naik.

Embryology in the view of Naik

In this regard, Naik has mentioned some points that, in a general view, could be divided into three categories:

- A) The topics which have scientific miraculousness and are explained correctly by Naik .
- B) The topics which have scientific miraculousness and are not explained correctly by Naik .

- C) The topics which don't have scientific miraculousness. In the present paper, we deal with the first and second parts and review them then give a brief reference to the third one.

A) The topics which have scientific miraculousness and are explained correctly by Naik.

Given the specialty of embryology, Naik has tried to state the opinions of experts, like Dr. Keith Moore and Dr. Joe Leigh Simpson, in this field. He mentions:

- *Alaq* (congealed clot of blood)

“Proclaim! (or Read!) In the name of thy Lord and Cherisher, Who created - Created man, out of a (mere) clot of congealed blood” (*alaq*) (Q 96: 1-2)

Naik believes that the Arabic word *alaq*, besides meaning a congealed clot of blood, also means something that clings, a leech-like substance (Naik, 47-49).

Interpretative views

Alaq

The word "*alaq*" means blood clot, i.e. the first state in which the semen takes form in womb (Tabataba'i 1374 Sh, 20:548).

"*Min Alaq*" (from *Alaq*) basically means sticking to something, and therefore it is said *alaq* to blood clot and also to "leech" which sticks to the body to suck blood (Makarim Shirazi 1374 Sh, 27:156).

Narrative view

In Nahj al-Balaghah, Imam Ali (a) said:

"Or look at man whom Allah has created in the dark wombs and layers of curtains from what was overflowing semen, then shapeless clot" (Sermon 82)

Scientific view

According to medical science, from day 15 the embryo is hanging or suspended via the 'connecting stalk' and it obtains nutrients through contact with the maternal blood vessels. This description bears a striking resemblance to the word *alaqah* – a 'hanging' or 'suspended' substance, obtaining nutrients from its host's blood (Andreas Tzortzis 2011, 19).

Lexical views

Alaq is equivalent to *Faras* means leech or it is plural of *Alaqe* means blood coagulation, which is the next state of the semen (Qareshi 1371 Sh, 5:31). In other words, *alaq* is the same red, thick, or solid before it is dried (Morteza Zobeidi 1414AH, 13:344). The lexicographer of *al-Ein*

also considered *alaq* as a solid blood before it is dried (Farahidi 1409AH, 1:162).

Review

In this part, Naik has tried to use scholars’ points of view in order to prove the compatibility of the claims in the Qur’an with the reality. This behavior is appropriate on the one hand, because a non-Muslim addressee will accept the compatibility through the admission of a scientist. On the other hand, it should be noted that some addressees tend to read the scientific point directly and consider its consistent with the Qur’an. Only one part of the author's speeches is related to scientific miraculousness, and that is "*alaq*."

According to some of the traditions as well as the Qur’an, human creation is from *alaq*. On the other hand, if *alaq* means blood clot, its fit with the cases of usage could have some meanings: 1- Its sticky (blood clot that sticks to the body to suck blood). 2- Its hang □ to the wall of the womb. 3- The likeness of the fetus to the leech is that the leech can suck as much as a cup of blood of human or animal each day, the fetus in the womb sticks to the uterus like a leech, and feeds on the blood. 4- Nutrition from the blood (Mahmoudi 1391 Sh, p. 67).

Regardless of the rare related points to the subjects the author has mentioned, it could be said that he performed well in explaining the scientific miraculousness of the *alaq*.

- *Nutfatin amshaaj* (mingled liquids)

“Verily We created man from a drop of mingled sperm (*nutfatin amshaajin*)” ... (Q 76: 2)

Naik said in this regard:

The Arabic word *nutfatin amshaajin* means mingled liquids. According to some commentators of the Qur’an, mingled liquids refer to the male or female agents or liquids. After mixture of male and female gamete, the zygote still remains *nutfah*. Mingled liquids can also refer to spermatid fluid that is formed of various secretions that come from various glands. Therefore, *nutfatin amshaaj*, i.e. a minute quantity of mingled fluids refers to the male and female gametes (germinal fluids or cells) and part of the surrounding fluids (Naik, 51-52).

Interpretative view

The word *amshaj* is the plural of the word *mashij* or *mashaj* or *mashej*, and these three words mean mixed, and if *nutfah*, in Quran, comes to this attribution, it is because the validity of various components of it,

or the validity of the mixing of male water with female water (Tabataba'i 1374 Sh, 20:194).

Narrative

views

Imam Ali (a) states: Two gametes (male and female) are intermixed in the womb, in this case, each of the two that is more dominant, the embryo is like gamet (male or female). Therefore, if the woman's gamet is dominant, the embryo is similar to its uncles (maternal relatives and their genetics). If the sperm is dominant, the embryo is similar to its uncles (paternal relatives and their genetics) (Rezaei Kermani 1390 Sh, 107).

Considering the (Q 76:2), Imam Baqir (a) states: "male and female waters have intermixed" (Bahrani 1416AH, 5:546).

Lexical view

Amshaj is the same as the combination, the male semen, the female semen, the blood and *alage* (Azhari 1421AH, 10:292).

Scientific views

In regard to this, embryologists John Allen and Beverley Kramer state that the human individual arises from the conjugation of two minute structures called cells, one from the mother and one from the father. These are called gametes. Together, these gametes form a single cell, the zygote, from which the entire embryo, including its surrounding membranes, grows (Andreas Tzortzis 2011, 13).

Review

Pointing out that the Qur'an did not speak about the fetus producer elements, or based on the words of old physicians such as Galenus that male gamete is dominant rather than female gamete, some writers (Mahmoudi 1391 Sh, 65) don't consider verse (Q 76: 2) as scientific miraculousness verses. First of all, it could not be expected that all the issues with details are mentioned in the Qur'an.

Secondly, by referring to the true commentators of the Quran, which are *Ahlul-Bayt (a)*, the scientific miraculousness of the verse can be offered. According to the narrative view of Imam Ali (a), the impressionability of the embryo from sperm or ovum, depends on the overcoming of one another. This suggests that both germ cells are involved in the formation of the fetus, and, contrary to Galenus's opinion, the male sperm is not necessarily dominant over the female ovum.

Therefore, although the author gives brief but true explanations over the verse, it is possible to refer to the scientific miraculousness of the

verse according to narrative, interpretive, lexical and scientific points of view.

- The Stages of Embryology

In this section, Naik used the views of the researchers as well as the verses of the Qur'an to explain the stages of the embryo's formation:

“Man We did create from a quintessence (of clay) - then We placed him as (a drop of) sperm in a place of rest, firmly fixed (*qaraarin makeen*) - then We made the sperm into a clot of congealed blood; then of that clot We made a (foetus) lump (*mudghah*) then We made out of that lump bones (*izâm*) and clothed the bones with flesh (*lahm*); then We developed out of it another creature. so blessed be Allah, the Best to create” (Q 23:12-14)

“Then did he become a clinging clot; then did (Allah) make and fashion (him) in due proportion” (Q 75: 38)

“Him Who created thee, fashioned thee in due proportion, and gave thee a just bias; in whatever Form He wills, does He put thee together” (Q 82: 7-8)

In this verse Allah states that man is created from a small quantity of liquid which is placed in a place of rest, firmly fixed (well established or lodged) for which the Arabic word *qaraarin makeen* is used. The uterus is well protected from the posterior by the spinal column supported firmly by the back muscles. The embryo is further protected by the amniotic sac containing the amniotic fluid. Thus the foetus has a well-protected dwelling place.

This small quantity of fluid is made into *alaqah*, meaning something which clings. It also means a leech-like substance. Both descriptions are scientifically acceptable as in the very early stages the foetus clings to the wall and also appears to resemble the leech in shape. It also behaves like a leech (blood sucker) and acquires its blood supply from the mother through the placenta.

The third meaning of the word *alaqah* is a blood clot. During this *alaqah* stage, which spans the third and fourth week of pregnancy, the blood clots within closed vessels. Hence the embryo acquires the appearance of a blood clot in addition to acquiring the appearance of a leech.

The *alaqah* is transformed into *mudghah* which means ‘something that is chewed (having teeth marks)’ and also something that is tacky and small which can be put in the mouth like gum. Both these explanations

are scientifically correct. Prof. Keith Moore took a piece of plaster seal and made it into the size and shape of the early stage of foetus and chewed it between the teeth to make it into a *mudghah*. He compared this with the photographs of the early stage of foetus. The teeth marks resembled the 'somites' which is the early formation of the spinal column.

This *mudghah* is transformed into bones (*izâm*). The bones are clothed with intact flesh or muscles (*lahm*). Then Allah makes it into another creature (Naik, 54-56).

Interpretative

views

fi qaraarin makeen (in safe and secure point)

The interpretation of the uterus to the *qaraarin makeen* (safe and secure point) refers to the specific position of the uterus in woman, in fact, it lies at the most conservative point in the body (Makarim Shirazi 1374 Sh, 14:207).

nutfah (fetus)

The principle of the creation of human is in the first stage that Allah created him from an exiguous gamete in the darkness of the womb (Makarim Shirazi 1374 Sh, 26:221).

fasawwaka (fashioned thee in due proportion)

In next step, which is the stage of "alignment and arrangement", Allah made each organ of human body well-proportioned and in wonderful arrangement, and eyes, ears, hearts, vessels and other organs that, if human being considers, one by one, each arrangement and system, and looks at God's grace and blessing, he would observe a world of knowledge, power, grace and favor before his eyes (Makarim Shirazi 1374 Sh, 26:221).

faadalak (and gave thee a just bias)

The third blessing is "the moderation, coordination and relationship among the faculties and the organs." The human body is made up of two parts that are symmetrical: arms, legs, eyes and ears, bones, vessels, nerves and muscles are coordinated and complementary in two parts of the body and, in addition, various organs complement each other task (Makarim Shirazi 1374 Sh, 26:221).

fi ayye suratin ma sha'a rakkabak (in whatever form He wills, does He put thee together)

The final stage is the comparison of human face shaping to other beings. God has given humankind, in comparison with different kinds of

animals, a well-proportioned and beautiful face, a beautiful character with an enlightened nature, and a combination to which is ready for accepting any science, knowledge and education. Allah has created the human in best form, as in (Q 95: 4) is mentioned (Makarim Shirazi 1374 Sh, 26:222).

Lexical views

alaq

Alaq means solid blood, before it is dried (Farahidi 1409AH, 1:161), thickened blood (Jawhari 1376 Sh, 4:1529), coagulated blood, a worm that sticks to the throat of animal and also means a germ or something from which a child comes into existence (Raghib Esfahani 1376 Sh, 2:633). *Olqe* means hanging to and to whatever is clung (Raghib Esfahani 1376 Sh, 2:633).

mudghah

Mudghah signifies a piece of meat (Farahidi 1409AH, 4:370, Jawhari 1376 Sh, 4:1326). In the opinion of Raghib, *mudghah* means a piece of meat which is chewed to some extent and not cooked (Raghib Esfahani 1376 Sh, 4:231).

Scientific views

alaq

According to medical science, the union of the ovum and sperm forms a fertilized egg, or zygote. After fertilization, the zygote then undergoes mitosis, or individual cell division, that splits it into more and more cells due to cleavage. After initial cleavage, the solid ball of cells becomes a *morula* (J. Fehrenbach and Popowics 2016, 20).

qaraarin makeen

In medical science, implantation begins at about the 6th to 7th day after fertilization. The part of the blastocyst projecting into the uterine cavity remains relatively thin. The syntrophoblast contains a proteolytic enzyme which causes destruction of the endometrial cells so that the blastocyst sinks deeper and deeper into the uterine mucosa...The final deficiency in the endometrium is sealed off by a blood or fibrin clot, overlying the blastocyst. This cover is called the operculum. By about 10 to 12 days after fertilization, the blastocyst is completely encased in the endometrium and thus, implantation is complete (Andreas Tzortzis 2011, 17).

mudghah

Some of the embryologists state that in the fourth week, the medially

placed mesenchymal cells of the somites migrate towards the notochord to form sclerotomes [mesenchyme is the loosely arranged embryonic connective tissue in the embryo] (Mitchell and Sharma 2009, 27).

izâm and lahm

The *izâm* stage in medical science is as follows:

The origin of mesenchymal cells forming the skeletal tissues varies in different regions of the body. Mesenchymal cells forming the axial skeleton arise from the mesodermal somites, whereas the bones of the appendicular skeleton are derived from the somatopleuric mesenchyme of the lateral plate mesoderm. After reaching their destination the mesenchymal cells condense and form models of bones. The subsequent differentiation of mesenchymal cells into chondroblasts or osteoblasts is genetically controlled (Mitchell and Sharma 2009, 20).

The appendicular skeleton consists of limb girdles and the bones of the limbs. The bones of the appendicular skeleton develop from mesenchymal condensations which become cartilaginous models (Andreas Tzortzis 2011, 30).

lahm

Barry Mitchell and Ram Sharma explain the process of muscle formation over the developing limb skeleton:

The limb muscles differentiate from myoblasts in the proximal part of the limb bud, and soon receive their innervations from the ventral rami of the spinal nerves. The myoblasts then migrate distally and soon become organized into a dorsal and ventral muscles mass surrounding the developing skeleton, carrying their innervations with them (Mitchell and Sharma 2009, 24).

Soon after the cartilaginous models of the bones, in muscles formation, have been established, the myogenic cells, which have now become myoblasts, aggregate to form muscle masses on the ventral and dorsal aspects of the limbs. These muscle masses, the relevant compartments, form the flexors and extensors of the joints. Rotator muscles are also formed so that flexors and pronators are related and extensors and supinators are related (Andreas Tzortzis 2011, 35).

Review

qaraarin makeen

Naik originally referred to *qaraarin makeen*, and explained it correctly. The uterus is located in the most well-kept point of the body, which is completely protected from each side; the spine and the ribs in

one side, the firm pelvis in other side, multiple abdominal layers in another side and the guard from the hands are all evidence of this safe point (Makarim Shirazi 1374 Sh, 14:207- 208).

alaq

According to scientific and lexical views, *alaq* is sticky, leech-like and blood clot in some stages. Naik believes that the blood clot stage lasts at the third and fourth weeks of pregnancy, and it is medically correct, since, as mentioned, human embryo, from the fertilization of ovum and sperm is on the way up to nine days to place in the womb. Then it is implanted in the womb on the ninth day and continues to grow in the form of parasite (*alaq*) for up to 14 days.

mudghah

As mentioned in the Qur'an, the next stage of the *alaq* is *mudghah*, and the author has referred to it correctly, and it is also scientifically proved. Moreover, *mudghah* is as a piece of chewed meat according to lexical views.

izâm and *lahm*

Bone creation and formation of flesh occur in the third week of embryo growth, and this point is evident in author's statement as well as the Qur'an.

Alignment, arrangement and combination of the body
At the end of his work, the author mentions verses from Chapters al-Qiamah and al-Infitar to explain the stages of embryology, which refers to the sperm, *alake*, alignment, arrangement and combination of human. Let it not remain unsaid that all of the above, except for the combination, are explained in the author's explanation. The combination is about the formation of human face which God forms anyone's face in his wisdom.

In general, the author's performance in this section is acceptable, since he has expressed the verses associated with the stages of embryology and has made a scientific explanation step-by-step.

B) The subjects that are scientific miraculousness but Naik did not correctly explain:

- Protection of the fetus among the three veils of darkness

“He makes you, in the wombs of your mothers, in stages, one after another, in three veils of darkness” (Q 39: 6)

In this regard, Naik made a brief speech on relevant verse and naming three veils of darkness:

According to Dr. Keith Moore, these three veils of darkness in the Qur’an refer to:

(i) anterior abdominal wall of the mother (ii) the uterine wall (iii) the amnio-chorionic membrane (Naik, 54).

Interpretative view

The usage of triple darkness refers to the darkness of the abdomen, womb, and the amnion (the special sac in which the embryo is located), which in fact are three thick layers drawn over the embryo (Makarim Shirazi 1374 Sh, 19: 384).

Narrative views

On *Arafa* invocation, Imam Hussain (a), when mentioning blessings and power of God, says in the presence of Allah: "So, You fashioned my creation from semen that gushed forth and put me up in triple darkness among flesh, blood, and skin."

Also it is said about 3 veils from Imam Sadiq (a): "Divine Order (*Tadbir Ilahi*) was to cover the embryo, in the womb, within three (veil of) darkness: belly, uterus, and abdomen" (Mirzae 1388 Sh, 46).

Scientific views

Based on the medical science, the function of the uterus is to provide a supportive environment for development of the fetus. The uterus contains multiple layers of tissue. The outermost layer of the uterus is a highly vascular layer known as the perimetrium. Inside this is the myometrium which is composed of smooth muscle. Finally, the innermost layer of the uterus is known as the endometrium and generates the thick nourishing layer into which the embryo implants (Kevin 2013, 31).

Review

The author has not investigated the issue in terms of interpretative and scientific explanations, especially he has not made a relationship between darkness, which is referred to in the Quran, with fetus. In other words, what is the use of darkness for the fetus is not answered in author's statement. Although according to narrative, interpretive, and scientific viewpoints the scientific miraculousness of this verse is considered, the author was not successful in persuading the reader to understand these concepts correctly.

C) The subjects that are not scientific miraculousness but author considered them as scientific miraculousness :

- Drop emitted from between the back bone and the ribs

Alongside a description, Naik believes that the following verses are considered as scientific miraculousness (Naik, 49-50):

“Now let man but think from what he is created! - He is created from a drop emitted - Proceeding from between the back bone and the ribs” (Q 86: 5-7)

Interpretative views

In this regard Allameh Tabatabai said:

“Apparently the purpose of “*between the back bone and the ribs*” (Q 86: 7) is that the semen is emitted from the confined point of the body, which is between the bones of the back and the bones of the breast” (Tabataba’i 1374 Sh, 20: 431).

Some others believe that both *sulb* and *taraib* should be sought by the man semen producer organ (Taleghani 1362 Sh, 3: 331).

Another meaning of *sulb* and *taraib* (Q 86: 7) seems to be related to the woman, i.e. a human is born into *sulb* and *taraib* of the woman. Seemingly *taraib* means the breast or two sides, and it is clear that the place of the child is between the back and side of mother; the meaning of this interpretation is to remind human the first stage of life and to defeat his haughtiness and arrogance (Shariati 1346 Sh, 133).

Scientific views

In men, bulbourethral glands secrete nonviscous material into the urethra before and during ejaculation to mix with sperm, seminal vesicle fluid, and prostatic fluid to form semen (Lambert and Wineski 2011, 91) and in women, the ovaries are almond-shaped reproductive glands that are located close to the lateral wall of the pelvis on each side of the uterus. The ovaries produce oocytes (L. Moore 2016, 10).

Review

Given the above discordant views, it can be concluded that the verse does not incorporate scientific point of view, but it is intended to remark the power of God, to which human is created through intercourse of two opposite sexes - one is manifestation of toughness and the other is manifestation of softness - and the emission of valueless liquid (Nowbari 1390 Sh, 104).

- *Sulalah* (quintessence or the best part of a whole)

From the viewpoint of Naik, it is possible to accord the sperm, which was able to reach the stage of fertilization among several million sperms, to the word *Sulalah* in the Quran (Q 32:8). He has the same opinion about ovum (Naik, 51).

Interpretative views

Sulalah is the human reproductive cell which is made of soil of Adam (Tabarsi 1360 Sh, 17:36). *Sulalah* is also said to be droplets of clear water that is poured out of something, and in verse (Q 32: 8) the meaning is male reproductive cell. It is called *Sulalah* because it is emitted from male *Sulb* (Tabarsi 1360 Sh, 19:212).

Scientific view

In embryology, it is stated that:

Of the 200 to 300 million spermatozoa deposited in the female genital tract, only 300 to 500 reach the site of fertilization. Only one of these fertilizes the egg (Sadler 2015, 40). In women, selection (of egg) occurs in the ovary by a variety of mechanisms with several follicles growing but ultimately only one egg is ovulated in the vast majority of cases (Kevin 2013, 1).

Review

Naik has tried to reconcile *Sulalah* - means pure anything - with a sperm among several million sperms, which has been able to fertilize an ovum among thousands of ova. But, according to the above scientific viewpoint, there is no specific characteristic for the sperm or ovum reached the stage of fertilization. In other words, there is no indication that the sperm or the ovum, in fertilization, conforms to *Sulalah*.

- Embryo partly formed and partly unformed (*mukhallaqah wa ghayri mukhallaqah*)

Conforming the following verse to modern science, Naik remarks that at early stage of embryo development there are some cells which are differentiated and there are some cells that are undifferentiated – some organs are formed and yet others unformed (Naik, 59-60).

“... We created you out of dust ... then out of a morsel of flesh, partly formed and partly unformed” (Q 22:5)

Narrative view

It is narrated from Imam Abu Ja’far (a) that *mukhallaqah* (Q 22: 5) is the particles that God has placed on the back of Adam, pledged them, and then transmitted them to the men’s back and women's womb. They are the ones who are born in order to be questioned about the pledge. But *ghayri mukhallaqah* (Q 22: 5) is every human being whom God did not place on the back of Adam during the creation of particle. As a result, it is eliminated or if it gets the form of human being, not achieving the

perfection, it will be aborted before the blown of the soul (Tabataba’i 1374 Sh, 14:500).

Interpretative views

In the course of creation of *mudghah* (Q 22: 5) sometimes is transformed into *mukhallaqah*. In the sense that its formulation is completed, and it will be born healthily after the soul is blown into it. *Mudghah* sometimes is transformed into *ghayri mukhallaqah*. In this sense it will be aborted before or after the stage of blowing the soul (Najafi Khomeini, 1398AH, 13:24).

Scientific view

Somites, which are paired aggregates of mesodermal cells (J. Dye 2012, 195), until day thirty, beginning in the cervical region, subdivide into two kinds of mesodermal primordia: dermamyotomes and sclerotomes. Dermamyotomes contribute to the dermis of the neck and trunk, as well as to the myotomes, which form the segmental musculature of the back and the ventrolateral body wall; additionally, myotomes give rise to cells that migrate into the limb buds to form the limb musculature. Sclerotomes give rise to vertebral bodies and vertebral arches and contribute to the base of the skull (Schoenwolf 2009, 82).

Review

Although, according to some views, *mukhallaqah* is related to the cells creating all tissue and organs of the body such as hands and feet and *ghayri mukhallaqah* is related to a part whose creation and illustration has not been completed (Malek al-Shoaraei 1390 Sh, 6), a common point, between the present point of view and the narrative and interpretation points of view, could not be found in order to consider the verse as the scientific miraculousness of Qur’an.

- Sex determination

According to the verses

“That He did create in pairs – male and female, from a seed (*nutfah*) when lodged (in its place)” (Q 53: 45-46)

“Was he not a drop of sperm emitted (in lowly form)? Then did he become a clinging clot; then did (Allah) make and fashion (him) in due proportion. And of him He made two sexes, male and female” (Q 75: 37-39)

and scientific opinions, Naik believes that sperm is responsible for determining the sex of the fetus (Naik, 52-53).

Interpretative views

According to some of the interpretations, *nutfah* in the verse (Q 53: 46) means the water in man and woman, which is the origin of the child's birth (Tabataba'i 1374 Sh, 19:79) (Tabarsi 1360 Sh, 23:419).

Lexical view

Although *nutfah* is mostly attributed to man, other meaning is the cell of man and woman which is the quintessence and separated from the existence of man and woman (Qareshi 1371 Sh, 7:79).

Scientific views

Some of the scholars state that:

During the 6th week of the developing embryo the primary sex cords are finger like projections. At this time both the male and female gonads appear identical. However, just after the 6th week a significant event occurs that determines the physical expression of the embryo's genetic make up. This event is the activation of genes that stimulates the production of male and female hormones. If the Y chromosome is present in the embryo's cell, a gene within the short arm of the chromosome called SRY will turn on, initiating a chemical chain reaction that will turn on other genes and stimulate the production of male hormones. If the X chromosome is present, or if the SRY gene is missing from the Y chromosome, the embryo will develop into a female via mechanisms that are not fully understood (Andreas Tzortzis 2011, 47).

Review

Naik has properly referred to the scientific point of sex determination, i.e. sex determination depends on the cells of the man. Y chromosome in spermatozoon leads to male sex (x+y+44) and ovum of female always has X chromosome. The male chromosome leads to female sex (x+y+44). Although sex determination of the embryo in Qur'an is one of the scientific references, signifying great value, the present point can't solely prove the scientific miraculousness of Qur'an. The reference of Qur'an is general and covert and latent mysteries are not expressed (Mahmoudi 1391 Sh, 78-79).

- Growing sense of hearing and vision in the fetus

According to the verses

“... and He gave you (the faculties of) hearing and sight and feeling (and understanding)...” (Q 32: 9)

“Verily We created man from a drop of mingled sperm, in order to try him: so We gave him (the gifts), of Hearing and Sight” (Q 76: 2)

“It is He Who has created for you (the faculties of) hearing, sight, feeling and understanding: little thanks it is ye give” (Q 23:78),

Naik claims that the development of the auditory sensation in the fetus is ahead of the development of sight sensation (Naik, 60).

Interpretative view

In most verses of the Qur’an referring to hearing power and vision power, it is obvious that both hearing power and ear(s) are mentioned before the vision power or eye(s), as in the verse (... *(We) have assigned hearing (and) vision to him*) (Q 76: 2). But in another verse, the word related to vision power is mentioned before the word related to the hearing power as in the verse (... *and (they) have eyes to which they can’t see and (they) have ears to which they do not hear ...*) (Q 7: 179).

Narrative views

In some narrations, the word related to the hearing power is mentioned before the word related to the vision power. Imam Ali (a) says:

“He has made ears for you to preserve what is important, eyes to have sight in place of blindness” (Sermon 82).

But in some other narrations, the word related to vision power has been emphasized before the word related to hearing power. Describing the righteous, Imam Ali (a) states:

“They keep their eyes closed to what Allah has made unlawful for them, and they devote ears to the knowledge which is beneficial to them” (Sermon 192).

Scientific views

According to medical science, the first indication of the developing ear can be found in embryos of approximately 22 days as a thickening of the surface ectoderm on each side of the rhombencephalon (Sadler 2015, 343) and the eyes begin to develop as a pair of outpocketings that will become the optic vesicles on each side of the forebrain at the end of the fourth week of development (Sadler 2015, 361).

Review

The scientific viewpoint suggests the start of the function of the embryo ears before its eyes. In some verses of the Qur’an and narrations, the word related to hearing power is mentioned before the word related to vision power. However, it is impossible to definitely consider the verses, intended by Naik (Q 32: 9, 76: 2, 23: 78), as scientific miraculousness of Qur’an, because in other verse (Q 7: 179) and the above narration, the

word referring to the vision power is stated before the word referring to the hearing power.

Conclusion

In order to demonstrate the miraculousness of the Qur'an to non-Muslims, Zakir Naik, in his book, has tried to point out the new achievements of the science and adapt them to the Qur'an. Dealing with such an issue requires twofold sensitivity and precision, because on the one hand, some scientific theories are not stable; in other words, more accurate theories may be formulated over time. On the other hand, some of the verses of the Qur'an are not understandable to everyone. Therefore, in order to understand the scientific miraculousness of the Qur'an, it is necessary not only to use proven and valid scientific rules but also, for the proper understanding of the Qur'an, it is necessary to use the words of the true commentators of this Holy book, i.e. *Ahlul-Bayt (a)*.

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