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Germ Cell as Equivalent to the Qur'anic Term "*Nutfah*": A Genetic and Linguistic Approach

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Abstract

Germ cells play a unique role in gamete production, genetics and evolution. Therefore, to understand the mechanisms that specify germ cells is a central challenge in developmental and evolutionary biology. Germ cells in mammalian embryos are specified shortly after implantation, emerging from the epiblast that consists of pluripotential cells. Germ cells and somatic cells (or soma) are responsible for the most basic division of cellular function in metazoan biology. Germ cells are the source of heritable genetic variation, and they produce the totipotent zygote from which embryogenesis commences. Embryogenesis depends on a highly coordinated cascade of genetically encoded events. In animals, maternal factors contributed by the egg cytoplasm initially control development, whereas the zygotic nuclear genome is quiescent. Genes expressed during spermatogenesis encode proteins necessary both for general activities and for processes specific to germ cells. The protein product of each Hox gene is a transcription factor. Each Hox gene contains a well-conserved DNA sequence known as the homeobox, of which the term "Hox" was originally a contraction. The term germ cell is equivalent to the term "Nutfah" (sperm) in Arabic. The word "Nutfah" has dozens of meaning. That's because Arabic language is known as an etymological language, which means that its words are always abundant of synonyms. In the current article we have selected ten Qur'anic verses that explain the meaning of this word and its decisive role in the process of divine creation of man, as it is material basis of fertilization and procreation. From these verses we also, understand that the creation of the "Nutfah"/sperm was the first and fundamental step in the process of the creation of the man. And if we know today that this "Nutfah"/sperm carries within it the genetic makeup of the living being, then this means that at the beginning of creation there were genes, from which, the "fine/delicate/ transparent mixtures "chromosomes" were encoded to create the soul, and the dense mixtures "chromosomes" were encoded to create the somatic cells (body organs) according to Ibn Sina.

Keywords: The Holy Qur'an, Germ Cell, "*Nutfah*" , Divine Creation, Spermatogenesis, Oogenesis, Genetics

1. General Scientific Review

Multi-cellular eukaryotes are made of two fundamental cell types—germ cell and somatic cell. The germ cell is characterized by their ability to undergo meiosis. Meiosis is a highly specialized cell division that converts diploid germ cells into haploid sperm or eggs, cells that are primed to meet for the propagation of the organism. Mammalian meiosis is initiated by an extrinsic signal retinoic acid and consists of meiosis I and II, each of which is divided into prophase, metaphase, anaphase, and telophase [1,2].

Prophase of meiosis I is the first and most complex stage of meiosis, when maternal and paternal homologs pair to allow the exchange of genetic information. Prophase is subdivided into five stages: leptotene, zygotene, pachytene, diplotene, and diakinesis [3].

Germ cells play a unique role in gamete production, heredity and evolution. Therefore, to understand the mechanisms that specify germ cells is a central challenge in developmental and evolutionary

biology. Specification of that germ cells can be achieved either by maternally inherited determinants (preformation) or by inductive signals (epigenesis) [4].

Germ cells in mammalian embryos are specified shortly after implantation, emerging from the epiblast that consists of pluripotential cells. Before gastrulation, precursor cells of primordial germ cells (PGCs) are induced within the proximal rim of the epiblast by the functions of bone morphogenetic protein signals provided from adjacent extra embryonic ectoderm [5].

In addition, Douglas and Mary King reported that the germ line is distinguished as an independent cell lineage when primordial germ cells (PGCs) are specified during embryogenesis. However, the mechanisms that direct PGC specification are not conserved across the animal kingdom or even, in some cases, between closely related species [6].

Sexual fate of mammalian germ cells does not determine based on their XX or XY chromosomal constitution. But, rather is dependent on the gonadal environment in which they develop. Germ cells in a fetal testis, commit to the spermatogenic programme of development during fetal life, although they do not enter meiosis until puberty. In a fetal ovary, germ cells commit to oogenesis by entering prophase of meiosis I. [7].

Germ cells and somatic cells (or soma) are responsible for the most basic division of cellular function in metazoan biology. Germ cells are the source of heritable genetic variation, and they produce the totipotent zygote from which embryogenesis commences. The development of the somatic cell lineages occurs under the control of the zygotic genome and determines the fitness of genetic innovations in response to selection [8].

During early development at the time of gastrulation, the primordial germ cells (PGCs),which is considered the precursors of egg and sperm migrate initially through the primitive streak into the posterior endoderm that forms the hindgut and from there later into the genital ridge that will be the site of the developing gonad. The maintenance of pluripotency within this cell population may arise through epigenetic modifications that suppress somatic differentiation programs. These cells differentiate at different times in male testis and female ovary development. Recent molecular studies suggest that final determination occurs after PGCs colonize the developing gonad [9].

The origin of human PGCs (hPGCs) has been less clear and has been difficult to study because of the technical and ethical constraints that limit direct studies on human embryos. In recent years, however, *in vitro* simulation models using human pluripotent stem cells, together with surrogate non-rodent mammalian embryos, have provided insights and experimental approaches to address this issue. In this respect, Kobayashiand, Surani, reported that the posterior epiblast and/or the nascent amnion in pregastrulation human embryos is a likely source of hPGCs, and that a different gene regulatory network controls PGCs in humans compared with in the mouse. Such studies on the origins and mechanisms of hPGC specification prompt further consideration of the somatic cell fate decisions that occur during early human development." [10].

2. Specific Genetic Review

Embryogenesis depends on a highly coordinated cascade of genetically encoded events. In animals, maternal factors contributed by the egg cytoplasm initially control development, whereas the zygotic nuclear genome is quiescent. Subsequently, the genome is activated, embryonic gene products are mobilized, and maternal factors are cleared. This transfer of developmental control is called the maternal-to-zygotic transition (MZT) [11].

Genes expressed during spermatogenesis encode proteins necessary both for general activities and for processes specific to germ cells. From 15,000 to 20,000 different transcripts are present in a cell population and only a few percent of the genes expressed in germ cells have been identified. Some of these genes encode proteins with essential roles for structures or functions specific to spermatogenic cells; are expressed in developmentally regulated patterns; and are transcribed only in spermatogenic cells or produce mRNAs unique to spermatogenic cells.

Genes with these characteristics have been named chauvinist genes, because male germ cells favor their expression with such strong prejudice [12].

Chauvinist genes can be grouped into three general categories: homologous genes, unique genes and genes expressing unique transcripts. Homologous genes are those expressed only in spermatogenic cells, such as histone H1t, heat shock protein HSP70-2 and lactate dehydrogenase C. Regarding unique genes they encode spermatogenic cell proteins such as ynaptonemal complex protein 1, transition proteins 1 and 2 TSP1 and. TSP2 and protamines 1 and 2 [13].

Hox genes are conserved transcription factor-encoding genes that specify the identity of body regions in bilaterally symmetrical animals. In numerous insect species, the Hox genes Sex-combs reduced (Scr), Antennapedia (Antp), Ultrabithorax (Ubx), and abdominal-A (abd-A) jointly regulate the identities of middle and posterior body segments, suggesting that these genes may restrict PGC formation to specific abdominal segments in G. bimaculatus [14].

The protein product of each Hox gene is a transcription factor. Each Hox gene contains a well-conserved DNA sequence known as the homeobox, of which the term "Hox" was originally a contraction; humans have over 200 homeobox genes, of which 39 are Hox genes [15,16].

Hox genes are regulated by gap genes and pair-rule genes, which are in their turn regulated by maternally-supplied mRNA. Then, Hox genes activate realisator genes that cause the segments in the developing embryo to differentiate. Regulation is achieved via protein concentration gradients, called morphogenic fields [17].

Transcribed genes as a source of genome instability; however, the degree to which large-scale shifts in transcriptional activity cause DNA damage was not known. One example of a large-scale shift in transcriptional activity occurs during development, when maternal regulators are destroyed and zygotic genome activation (ZGA) occurs. Here, we show that ZGA triggers widespread chromosome damage in the primordial germ cells of the nematode *C. elegans*. We show that ZGA-induced DNA damage activates a checkpoint response, the damage is repaired by factors required for inter-sister homologous recombination, and topoisomerase II plays a role in generating the damage. These findings identify ZGA as a source of intrinsic genome instability in the germline and suggest that genome destabilization may be a general consequence of extreme shifts in cellular transcriptional load [18].

Recent studies in which somatic cells were experimentally converted into pluripotent stem cells revealed that genes expressed in primordial germ cells (PGCs), such as *Oct*3/4, *Sox*2, and *Lin*28, are involved in this reprogramming. These findings suggest that PGCs may be useful for identifying factors that successfully and efficiently reprogram somatic cells into toti- and/or pluripotent stem cells. Here, we show that *Blimp*-1, *Prdm*14, and *Prmt*5, each of which is crucial for PGC development, have the potential to reprogram somatic cells into pluripotent stem cells. Among them, Prmt5 exhibited remarkable reprogramming of mouse embryonic fibroblasts into which *Prmt*5, *Klf*4, and *Oct*3/4 were introduced. The resulting cells exhibited pluripotent gene expression, teratoma formation, and germline transmission in chimeric mice, all of which were indistinguishable from those induced with embryonic stem cells. These data indicate that some of the factors that play essential roles in germ cell development are also active in somatic cell reprogramming [19].

3. *"Nutfah"*: The Linguistic Analysis in Relation to Some Religious and Philosophical Notions

3.1. Linguistic Analysis

3.1.1. The Arabic Root of the Meaning of the Term

According to the Lesan al-Arab dictionary, the word "*Nutfah*" has dozens of meaning. Arabic language is known as an etymological, which means that its words are always abundant of synonyms, but in the current context we will choose the closest meanings that serve this article and reflect its contents. Hence, the word "*Nutfah*" means:

- A little of water. (A metaphor for the meaning that the sperm are little in quantity)
- "*Nutfah*" is the man's semen (man's fluid)
- Semen is called sperm (Nutfah) due to its smallness.
- *Nutfah* (sperm) is the one from which the offspring come.
- The word "*Nutfah*" comes in both singular and plural forms, meaning one thing: sperm. This, most importantly, signifies the solidity of the term's sovereign meaning. This interpretation has crucial philosophical and biological significance, because ultimately, only one super viable and strong sperm among millions will win the race and pass its genes on to the next generation. This literally signifies uniqueness and independence of the sperm, while at the same time testifying to the precision and eloquence of the Arabic language [20].

3.1.2. The Most Characteristics of the Sperm as the Equivalent to the Term "*Nutfah*"

- Sperm: a small cell produced by a male animal that joins an egg from a female animal to create a baby.
- Sperm: (spermatozoon, plural spermatozoa) is often the smallest than egg.
- The chromosomes of many sperm have dispensed with the histones of somatic cells and are packed instead with simple, highly positively charged proteins called protamines.
- The DNA in the nucleus is extremely tightly packed, so that its volume is minimized for transport, and transcription is shut down
- The motile tail of a sperm is a long flagellum, whose central axoneme emanates from a basal body situated just posterior to the nucleus.
- In the head of most animal sperm, is a specialized secretory vesicle called the acrosomal vesicle, which contains hydrolytic enzymes that may help the sperm to penetrate the egg's outer coat.

The entire of these specific qualities of the sperm and many others are manifestations of the divine creation process, and this is reflected in one of the verses of the Holy Qur'an: *Surat Al-Qamar* (the Moon). 54/27, verse number, 49: In the name of God, the Most Gracious, and the Most Merciful {Verily, We have created all things with qadar (Divine preordainments of all things before their creation as written in the Book of Decrees – *Al-Lauh Al-Mahfuz*).

The interpretation of this verse is that God Almighty created everything in the universe with a wise, measured creation, arranged in accordance with what the divine wisdom required of its creation, meaning that every creature has specifications and functions that are completely appropriate to its role in the movement of the universe. All these specifications and functions are exclusively preserved in the " *Al-Lauh Al-Mahfuz*" , which means that before all creatures were created, God set for them their nature, components, roles, and destinies. This understanding applies to the general laws governing the motion of the universe just as it applies to the specific laws that pertain to each individual living being.

So every creature and every inanimate element has its own specific law that distinguishes it from other creatures or elements. And all of them are in a state of integration, balance, and communication, to achieve the state of human perfection that God has intended for His creation and servants. Regarding, our current state, the small, weak, humble sperm and the genes it carries in the form of a code, despite their small size, were created to be the building basis of a new, perfect being. Nothing in the universe was created in vain.

3.2. Excerpts from the Verses of the Holy Qur'an Explaining the Meaning and Creative Role of "*Al-Nutfah*"

- **Surah Al-Mu'minun (The Believers) No.23/18**, verses13 and 14: In the name of God, the Most Gracious, and the

Most Merciful {We created man of an lineage/strain of clay. Then, We made him as a "*Nutfah*" (sperm) in a safe, firmed lodging.[13] Then, We made the "*Nutfah* "into a clot (coagulated drop of blood), then we made the clot into a little lump of flesh, then We made out of that little lump of flesh bones, then We covered (clothed) the bones with flesh, and then We brought it forth an another creation. So, Blessed Allah, the best of creators.[14]

- **Surah Al-Hajj, (The Pilgrimage) No.22/17,** verse, 5: In the name of God, the Most Gracious, and the Most Merciful {O mankind! If you are in doubt about the Resurrection, verily We have created you from dust, then from a "*Nutfah*" (germ cell) then, from clot (a piece of thick coagulated blood), then, a little lump of flesh- some formed and some unformed (as in the case of miscarriage) - that We may (it) clear to you (i.e. to show you Our Power and Ability to do what We will). And We cause whom We will to remain in the wombs for an appointed term}
- **Surah Fatir, (The originator of Creation or The Angels) No.35/22**, verse 11: In the name of God, the Most Gracious, and the Most Merciful {And Allah did create you (Adam/ mankind) from dust, then from "*Nutfah*", and then He made you pairs (male and female). And no female conceives or gives birth but without His knowledge. And no aged man is granted a length of life nor is a part cut off from this life (or another man's life), but is in the Book (*Al- lauh Al-Mahfuz*) surely, that is easy for Allah}.
- **Surah Ya-Sin, No.36/22**, verse 77: In the name of God, the Most Gracious, and the Most Merciful {Does not man see that we have created him from" *Nutfah*". Yet behold he (stand forth) as an open opponent}.
- **Surah Ghafir, No.40/24**, verse, 67: In the name of God, the Most Gracious, and the Most Merciful {It is Who has created you from dust, then from "*Nutfah*" (sperm), then from a clot (a piece of coagulated blood), then bring you forth as an infant, then (makes you grow) to reach the age of full strength, and afterwards to be old (men and women) – So some among you die before, - and that you reach an appointed term in order that you may understand}.
- **Surah Al-Najm, No. 53/27**, verse, 45-46: In the name of God, the Most Gracious, and the Most Merciful {And that He (Allah) creates the pairs, male and female from "*Nutfah*" [45] when it is emitted (when the semen is emitted)[46]}
- **Surah Al-Insan, No. 76/29**, verse, 2: In the name of God, the Most Gracious, and the Most Merciful {Verily, We have created man from "*Nutfet Amshag*", in order to try/afflict him. So We made him hearer and seer.}
- **Surah Al-Tin, No. 95/30**, verse 4: In the name of God, the Most Gracious, and the Most Merciful {Verily, we created man in the best (perfect) stature (mould)}.
- **Surah Sad, No. 38/23**, verses 71-72: In the name of God, the Most Gracious, and the Most Merciful {(Remember) when your Lord said to the angels: "Truly I am going to create man from clay" [71]. So, when I have formed him and breathed into him (his) soul created by Me, then you fall down prostrated to Him}.
- **Surah, Al-An'am, No. 6/7**, verse 98: In the name of God, the Most Gracious, and the Most Merciful {It is He Who has created you from a single self/soul/person (Adam), and has given you a place of residence, and a place of storage. Indeed, we have explained in detail our revelations (this Qur'an) for people who understanding}.(people with deep knowledge and a wise reason).

Translation "with slightly modification" according to Muhammad Taqi-ud-Din Al-Hilali and Muhammad Muhsin Khan (1404 AH - 1984 AD) [21].

4. Interpretation and Discussion

Germ cells are considered the first seeds of formation and creation of all living organisms, and as important as their role and function are, they have always received sufficient attention from researchers of religions, sciences and philosophy alike, the aim of this article is to provide a scientific, philosophical and genetic religious foundation that illuminates one aspect of these great cells. Without which there would be no creation and there would be no humanity. If the philosophy in the past was the head of wisdom, but now the data of modern science play a pivotal and purposeful role in understanding and analyzing all the phenomena of the essence governing the universe and human life alike. Perhaps the interesting and enjoyable science of genetics, with all its tremendous modern manifestations, will lead us to the final word in understanding the essence of nature and man together. Accordingly, we will start the discussion of the current article by getting to know these germ cells as a genetic term in its simplest and most important implications:

- **Spermatogenesis**

  The essential hormonal regulators of spermatogenesis are testosterone and follicle stimulating hormone FSH. Testosterone is a steroid hormone produced by Leydig cells located between the seminiferous tubules of the testis. Testosterone acts through the androgen receptor, and affects spermatogenesis indirectly through this receptor in Sertoli and peritubular cells, but the nature of the signals from these cells to germ cells are unknown. FSH is a peptide hormone produced in the anterior lobe of the pituitary. It binds to receptors on the cell surface to activate signal transduction processes. Such receptors are present on Sertoli cells but not germ cells. FSH has an effective effect on the Sertoli cell replication during fetal and neonatal life, but male mice with a targeted deletion of the FSH b-subunit gene are fertile. In this respect, Zirkin[22], Sharp[23] and Kumar *et al*.[24] suggested that FSH supports spermatogenesis, but does not have a significant role in regulating gene expression in germ cells.

There are three levels of the intrinsic regulation of gene expression in spermatogenesis, which are: transcription, translation and post-translation. First one is the primary determinant of gene expression, as in other cell types. However, second one probably has a greater role in germ cells than in other cell types, particularly for proteins synthesized during the post-meiotic phase. Regarding, third one it occurs through modifications of proteins, perhaps in response to extrinsic and intrinsic cues, to effect transcription and translation

during spermatogenesis [12].

- **Oogenesis**

Oogenesis is a complex process regulated by a vast number of intra- and extra-ovarian factors. Oogonia, which originate from primordial germ cells, proliferate by mitosis and form primary oocytes that arrest at the prophase stage of the first meiotic division until they are fully-grown. Within primary oocytes, synthesis and accumulation of RNAs and proteins throughout oogenesis are essential for oocyte growth and maturation; and moreover, crucial for developing into a viable embryo after fertilization. Oocyte meiotic and developmental competence is gained in a gradual and sequential manner during folliculogenesis and is related to the fact that the oocyte grows in interaction with its companion somatic cells. Communication between oocyte and its surrounding granulosa cells is vital, both for oocyte development and for granulosa cells differentiation. Oocytes depend on differentiated cumulus cells, which provide them with nutrients and regulatory signals needed to promote oocyte nuclear and cytoplasmic maturation and consequently the acquisition of developmental competence [25].

In mammals, the way in which eggs are produced differs from the way sperm are produced. For example, in human females, eggs reproduce only in the fetus, enter meiosis before birth, and become arrested as oocytes in the first meiotic prophase, and they may remain for up to 50 years. From these stock, individual oocytes mature and are ovulated at intervals, generally one at a time, starting at the beginning of the puberty. In contrast, meiosis and spermatogenesis to form sperms does not begin in male's testes until puberty, and then go on continuously in the epithelial lining of very long, tightly coiled tubes, called *seminiferous tubules*. Immature germ cells, "*spermatogonia*" are located around the outer edge of these tubes next to the basal lamina, and they proliferate by mitosis continuously [26].

Regulation of gene expression in the oocyte is not only dependent on polyadenylation but also on the presence of highly conserved sequences at the 3′ and 5′ untranslated regions (UTRs) of RNA which are implicated in processes such as polyadenylation, initiation of translation, masking of RNAs and the disposition of mRNA to undergo deadenylation and degradation [27,28]. The regulation of reproduction function by miRNAs has not been extensively studied. Recently, in vitro studies have demonstrated that miR-224 is expressed in granulosa cells at different stages of follicle development and its levels are up-regulated by TGFβ1 and activin A. Interestingly, *Smad4* seems to be a potential target of miR-224 and by negative regulation of SMAD4 protein expression, miR-224 might be involved in TGFβ1-mediated granulosa cell proliferation and function [29].

Regarding the main part of the article, which is the term" *Nutfah* "and inferring its meanings and specifications from the Holy Qur'an, we presented 10 verses that clarify the context of the meaning, and concerning, the necessity of interpreting those noble verses, then now we put a comprehensive, explanatory overview of those previous verses as follows:

The verses included are just the tip of the iceberg in which we have collected the verses of revelation that include the term "*Nutfah*" / sperm. Despite the difference in the reasons for revelation in each one of them individually, we find the unity of meaning, significance and repetition in order to establish the essential meaning and the main concept. It should also be emphasized that, the repetition of synonymous keywords was intended to emphasize that the foundations upon which divine providence adopted the creation of man were dust and (*Nutfah*)/ sperm, then the development of the sperm into a fetus until birth. Here, we must clearly differentiate between the word "*Al-Nutfah*" as an independent linguistic term which means sperm and the phrase "*Nutfahet amshag*" as a linguistic structure which means zygote [30].

One of the most important concepts that represent a point of disagreement among the interpreters of the Holy Qur'an is where the sperm is located. Is it in the womb, as the most interpreters say, or in another place (the testicles, according to our belief)? The answer to this question comes from the Qur'an itself. In Surah Al-MU'MINUN (THE BELIEVERS), verses 12 and 13, it says: In the name of God, the Most Gracious, and the Most Merciful {We created man from a (strain/lineage) of clay, [12], then We made him (formed him) a sperm (*Nutfah*) in a secure resting place [13]}.

According to the Holy Qur'an, this place must be safe, fortified, and have specific and strict physiological and anatomical properties in order to perform its protective function to the fullest extent [30].

This is why we assumed that the only place for sperm is the testicles and not the womb at all, because the womb is merely a warehouse for building the potential baby until its maturity and birth are complete.

Another new Qur'an verse that supports and reinforces our vision and interpretation of the place of sperm. Surah, Al-An'am, verse [98]: In the name of God, the Most Gracious, and the Most Merciful {It is He Who has created you (all of you) from a single self/soul/ person (Adam), and has given you a place of residence, and a place of storage. Indeed, we have explained in detail our revelations (this Qur'an) for people who understanding (people with deep knowledge and a wise reason).

In interpreting this verse, we say that the structure of the Qur'an sentence here is the most eloquent because the process of creation has been formulated with the utmost wisdom. First, it contains the confirmed acknowledgment that the beginning of creation was Adam. This is a clear and established fact. Then, the Qur'an revelation was completed with a short sentence of two consecutive, similar words, but with a subtle difference between them, which imposed some ambiguity in extracting the true meaning. The first word means a stable place, which indicates permanence and stability in conditions that allow it to remain for a long time. While the second word means a warehouse/storage place, which is a place with a temporary, transitional nature and function. Accordingly, we can say with confidence that the first word, with its specifications, literally means the testicles that give birth to and protect the sperm

"*Nutfah*" As for the second word, it means (women's wombs) that embrace the zygote, which is known in Arabic as (*Nutfet amshag or amshag Al-Nutfah*) for a certain period [29]. In addition, the way the fifth letter of the first word is pronounced, according to the grammatical rules of Arabic language, determines the meaning of the word accurately, and necessarily determines the meaning and structure of the second word, which is the same meaning and structure that we intended and formulated in our interpretation. As for the last part of the verse, it is as if God Almighty is testing His servants in their contemplation, awareness and intelligence to discover the hidden meaning in His noble words.

It could be concluded that the theory of creation according to Islamic doctrine derived from the Holy Qur'an is based on two foundations: the first is that the man was created from a lineage of clay, and the second foundation is the "*Nutfah*"/sperm that was preserved in a firm place.

In clarifying this meaning, we discover some facts:

- The word lineage indicates and confirms that the man was not the first of creatures, but rather he is a link in a chain of successive creatures, but each creature or lineage of them may have a unique genetic constitution (genome) that is different from the others in reality and time period.
- The term " *Nutfah* " is repeated many times in the verses of Qur'an, and in each time it gives an additional meaning. For example, it comes in the singular form to literally mean the sperm, and then it comes accompanied by the word "*Amshag*" (gamete) to mean the zygote.
- If we look closely, and consider the pattern of the sequence in the creation process, we find that the "*Al-Nutfah*"/sperm (germ cell) was created as the first thing that God Almighty created to be the basis for the formation of man. This means, most importantly, that this human existence since the first beginning of the creation is indebted to these wonderful lovely cells that God Almighty created and placed in them the secret of existence, which are the genes. To be precise and certain, we are the gift of our genes, and if we die, they remain carrying the code of our souls, which may return to us (I mean that each one of us will have his own soul and never any other soul) at the day of the final divine justice (doomsday).

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