## She Almost Bore Her Brother

## How Genetics Vindicates an Ancient Arabic Saying

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كادَتِ الْمَرَاةُ أَنْ تَلِدَ أَخَاهَا: قُولٌ صَحِيحٌ لَكَنْ بِنَكَهَةٍ عَرِبِيَّة

Exaggeration is an authentic Arab art, never leaving the lips of its speakers. "A hundred" and "a thousand" have always signified "ten" and "twenty" when the intent was to magnify and obscure a small number. The impact of their multitude steals one's breath, and souls anticipate the gravity of their action. Thus, the speaker captures the intent of his crafted message, leaving the audience intrigued, lending their ears to a discourse that follows.

The Arabs attributed two-thirds of a child to its maternal uncle (Khal), leaving the immediate family to dispute the remaining third. It would have been more fitting for them to grant the uncle a quarter of the youth and return the remainder to its rightful owners, so that they might enjoy peace. The truth is, the daughter is more custodial of her genetic inheritance, and credit is ascribed to the son while they thereby wrong her. For the son has often squandered the legacy of his fathers, while the daughter has preserved the genes of the ancestors, and yet they persistently deny this.

Today, I turn to science for elaboration. I restore rights to their owners, I delineate. Genetics has become a landmark I seek like a lover, never tiring of the pursuit. I add to it some of my own conclusions, for the argument is preserved with me, and nothing remains but interpretation. My research in cell science led me to the discovery, and with this new discovery, I have clarified much and continued to speak. For those who have lost the old saying and missed its modern interpretation, I begin with its old form and then return to explore the new discovery.

## 1. They Said, and Their Saying is True Except in One Matter

A child receives half of its genes from the father and borrows the second half from its mother. The daughter does the same as her male brother, no different from him. Thus, the child, whether male or female, is related to its father by half ( $\frac{1}{2}$ ) and to its mother by the same proportion. It is a scientific law, beyond reproach among those who know.

Full siblings may share their portion of parental genes entirely, resulting in complete (100%) genetic congruence. Or, one sibling may select one half of the parents' genes, and his full sibling may select the half of the genes left behind by both parents, at which point the genetic difference between the two siblings is absolute (0%). Between the two absolutes of the first (100%) and the second (0%), the genetic commonalities between full siblings vary widely.

And since it was necessary to assign a fixed numerical value amenable to exchange and circulation, a value that serves in studying the degree of relatedness between full siblings, the average value of that wide range of percentages was taken. The value of (50%) was satisfactory to all. Conventionally, the average value of ( $\frac{1}{2}$ ) was adopted to indicate the degree of relatedness between full siblings. It serves the purpose of study on one hand, and is largely factual on the other. It was well that they did so!

# 1.1. Degree of Relatedness Between the Son of a Sister and her Full Brother (the Maternal Uncle)

The son of the sister (Q) takes half of his genes from his mother (M), and the other half from his father. Thus, he does not deviate from the detailed degree of relatedness between a child and either parent, which is half ( $\frac{1}{2}$ ).

The degree of relatedness between the child (Q) and either grandparent is one quarter (1/4). Because half of his genes were taken from his mother (M), and she took half of her genes from her father (A), so the genetic congruence between the child (Q) and his grandfather, his mother's father (A), is (25%), i.e., (1/4). What is said about the grandfather applies equally to the grandmother (B).

By analogy, the degree of relatedness between the child (Q) and his maternal uncle (K) also becomes  $(\frac{1}{4})$ . The genetic commonalities between his mother (M) and her brother (K) are (50%) on average. Only half of these commonalities were passed to her son (Q), so the genetic congruence between the child and his uncle is only (25%); see Figure (1).

# 1.2. Degree of Relatedness Between the Son of a Brother and his Full Sister (the Paternal Aunt)

And according to their perspective, the case is the same with the son of the brother (S). He is related to his father (K) by  $(\frac{1}{2})$ , and to his paternal aunt (M) by  $(\frac{1}{4})$ . With this, the subject of our research becomes invalid. The resemblance of the sister's son to his uncle is no greater than that of the brother's son to his aunt. There is no preference between them in this, no distinction. With this, the benefit of such a saying and such detail becomes void, and delving into it becomes nothing more than a heresy without cause. This is what I personally disagree with; see Figure (1).

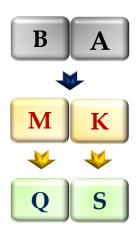


Figure (1): The Old Saying

- Parents: Father (A), Mother (B)
- Their children: Son (K), Daughter (M)
- Son (K)'s son: (S)
- Daughter (M)'s son: (Q)

- Arrows indicating genetic contribution.

- Caption: The son (K) and daughter (M) each get  $\frac{1}{2}$  from (A) and  $\frac{1}{2}$  from (B). Their sons (S) and (Q) get  $\frac{1}{2}$  from their respective parents (K) and (M). The

## 2. As For My Statement, Which is a Correction of What They Said

Personally, I do not see the brother (K) following the path of his sister (M) in their preservation of the parental inheritance. She is stingy with the genes of the ancestors, and very keen on transmitting them to her child. How could it be otherwise! She is the trustee of preserving the constitution, perpetually engaged in stabilizing the fundamental characteristics of the human species for as long as it and she endure. Thus, this human does not change however circumstances shift and the grindstone of days confronts him. He is today as he was in the distant past. He has remained in his state since the All-Merciful permitted him to be the primordial Human.

As for the male, he is incessantly engaged in alteration and modernization of the genes of his sperm. Empowering the human species has been Adam's occupation since the beginning. Diligently, he monitors the updates of his time and the novelties of his place, and then, prudently, transmits them to his children. The means is genetic modification here, and the phasing out of other genes there. With a long lifespan, he may arrive at a combination of genes for his sperm that does not greatly resemble the genes he inherited from the ancestors. And in this lies a necessity above which there are no duties or trusts. For man does not conquer the adversities of fate and the darkness of time with the genes of the fathers. If he does not implement modernization in them, he falls, like others, in the arduous tests of time.

### **Important Note:**

I have explained at length the role of Eve in preserving the specific characteristics of the human species, and I wrote an article on this which you can find at the link:

Eve Preserves Humanity's Blueprint; Adam Drives Its Evolution (DOI)

#### In Parentheses:

For further clarification, suppose, for example only, that the number of Eve's genes is one hundred red balls. This is the number of genes in Eve's somatic cells, and it

must necessarily be the number of genes in the Oogonia (egg-precursor cells). At this point, you will find in all of Eve's Oocytes (eggs) fifty red balls. The division of justice occurs here, and every egg gets half of the mother's genes without manipulation or genetic modification.

In contrast, suppose also that the number of Adam's genes is one hundred blue balls. This is the number of genes in Adam's somatic cells, and it is also the number of genes in the Spermatogonia (sperm-precursor cells). Here, you will not find fifty blue balls in all of Adam's sperm. Rather, you will find a wide variety of sperm that do not match each other, and they do not match the genes of the parent cells that produced them either.

Some sperm may contain (50) blue balls, while others may contain (49) blue balls and one yellow or white one, perhaps... it doesn't matter. What matters is the non-correspondence of the sperm's genes with the genes of the parent cell that produced it. For not a single sperm is free from a genetic variation here, and another mutation there.

## 2.1. Oocytes are Genetically Constant, Preserving Human Identity

To preserve traits, Eve proceeded to build her reserve of Oocytes very early on. As the female fetus develops, the division of the Oogonia begins, each giving one Oocyte. This division process ends, and Eve's reserve of Oocytes is complete, while Eve is still a fetus in her mother's womb. Then, these Oocytes slumber for a long time until the woman reaches puberty. At that point, some of these dormant cells awaken in each Menstrual Cycle to enter a new creation cycle, while the others remain dormant awaiting their turn and function.

The purpose of Eve's haste in producing her entire reserve of Oocytes, and the speed of accomplishment within a relatively short time during intrauterine life, is to protect her eggs from external influences of all kinds. Eve is keen to preserve the genes of her eggs, the buds of the next generation of her child, constant in their state. Thus, she transmits the genetic trust, her inheritance from both parents, to her child without being touched by the act of alteration and modernization.

Accordingly, every child of her progeny receives an identical copy of half of his mother's genes, which is also an identical copy of a quarter of the genes of each grandparent. Thus, his degree of relatedness to his mother is half ( $\frac{1}{2}$ ), and to both grandparents is ( $\frac{1}{4}$ ).

Consequently, it is also correct to attribute a quarter of the youth (Q) to his maternal uncle (K), due to the two sharing half of the mother's (M) genes. To recognize the importance of this in proving the validity of the saying under research, we must compare it with the degree of relatedness between the brother's son (S) and his father (K) first, and then his degree of relatedness with his paternal aunt (M) second; see Figure (2).

### 2.2. Sperm are Genetic Variables for Empowering Offspring

Adam is in no hurry to produce sperm, his provision in the battle of immortality and survival. He takes his time until he absorbs the variables of his time and thoroughly imbibes the updates of his place. Thereafter, at the time of his puberty, he sets out actively producing his arsenal. Every sperm in his arsenal will be loaded with a genetic modification; his reading of what is obligatory and necessary of updates, to be more suitable for the future of his children.

Time never ceases to throw at us great variables, and if man clings to the inheritance of the ancestors, he forfeits his possibility of survival. Therefore, you see Adam constantly anxious, monitoring the state and conditions. If an environmental variable or a temporal novelty persists for long, Adam launches into the act of modernizing the genes of his sperm to empower the next generation and improve its chances of survival. Therefore, you see Adam never ceasing sperm production as long as he is alive. Environmental variables are a flowing waterfall, its roar unceasing. And if Adam wants immortality on this earth, he must meet the most persistent and influential of them in his life in the best manner possible.

It is not strange, given the situation as I have described, for Adam to begin his sexual activity late and with sperm that do not match his own genes fundamentally. The sperm does not carry an identical copy of half of his genes—he who is the manufacturer of these sperm—but falls short of that slightly. If this sperm fertilizes an egg, the result will never be a youth who matches his father in half of his genes.

Thus, half of the youth (S) cannot be ascribed to his father (K), who must content himself humbly with less than that ( $< \frac{1}{2}$ ).

If Adam (K) lives a long life, his sperm become the farthest thing from the copy of the founding fathers' genes. And Adam's lifespan may extend immensely, so that in his final stages he ends up with sperm whose genes do not resemble his genes in anything. The act of genetic modernization would have overwhelmed the pristine origin of the founding fathers' genes. At that point, the son (S) no longer resembles his father (K) in many things. The degree of relatedness between them may plummet to an unprecedented low (<<<1/2).

How could it not, when Adam (K) himself does not match his father (A) letter for letter in half of his genes? The youth is not faithful to his genetic inheritance. Likewise, his sperm incessantly abandon the pristine origin of genes, and eagerly adopt everything modern, hoping it might be beneficial. The act of betrayal seems to be a trait in Adam as it is in his sperm. But it is a constructive betrayal this time, with its justifications and the good built upon it for this human.

Nevertheless, do not worry. The youth (S) will remain genetically belonging to his father (K). And the degree of relatedness between them will remain close to  $(\frac{1}{2})$ , even if it does not match it. My statement above is an intentional act of exaggeration. For I am stingy with the linguistic heritage of the ancestors. And exaggeration is a craft I profess, through which I demonstrate a truth that has possessed me. Thus, exaggeration is only for clarification and enlightenment, and to emphasize the importance of genetic variation in Adam's sperm.

Now, if the genes of the sperm are not faithful to half of Adam's own genes – he who is their producer and monitor for their purpose – how can they be entrusted with the genes of his aunt (M), when the distances between them are vast? Thus, the poor aunt only gets less than a quarter ( $< \frac{1}{4}$ ) of genetic commonalities linking her to that youth; see Figure (2).



Figure (2): The Modern Saying

- The daughter (M) gets a faithful  $\frac{1}{2}$  from (A) and (B).
- The son (K)'s genes, especially in his sperm, have been updated and do not fully match his inherited ½ from (A) and (B).
  - Therefore, (Q) is related to his mother (M) by  $\frac{1}{2}$  and to his uncle (K) by  $\frac{1}{4}$ .
  - However, (S) is related to his father (K) by  $<\frac{1}{2}$  and to his aunt (M) by  $<\frac{1}{4}$ .

# To the Uncle the Youth is Ascribed, or to the Grandfather is it more rightful to be ascribed?

To the Uncle it is more rightful to ascribe the youth. For the relatedness of the youth (Q) to the uncle (K) conventionally reaches a quarter  $(\frac{1}{4})$ . And if the uncle (K) matches the genes of the youth's mother (M), his degree of relatedness to her son (Q) approaches half  $(\frac{1}{2})$ . This is possible in occurrence and verification. It may happen that the uncle (K) and the mother (M) share the very same genes from the parents (A) & (B). At that point, the genetic congruence between them is complete (100%). Consequently, half of the sister's son's (Q) genes match half of the uncle's (K) genes. Thus, their relatedness ascends to the degree  $(\frac{1}{2})$  as a gain; see Figure (3).

As for the relationship of the grandson with his grandfather, it is clouded by constructive doubt. The youth's mother (M) was formed from the genes of the father's sperm (A) and the mother's egg (B). From the union of these genes, the mother (M) came into being as a body, and so did all her reserve of Oogonia. Then, quickly, the Oogonia divided, each giving one Oocyte.

Thus, the Oocyte of (M) is faithful to the genes of the father's sperm (A) and also to the genes of the mother's egg (B). And while the genes of the mother's egg (B) are identical to the mother's own somatic genes, the genes of the father's sperm (A) are not in the same condition as the genes of the founding father (A). The sperm, as we mentioned before, worked alteration and modernization in its genetic storehouse for the sake of adaptation and empowerment.

What I mean to say is that the Oocyte, the foundation of the youth's (Q) existence, has Genes identical to a quarter of the genes of the sperm of (A). It is not necessarily identical to the somatic genes of (A) himself. The difference between them is established and clear. With this, the youth (Q) is related to the grandfather's sperm (A) by a degree of (1/4), and to the grandfather himself by a degree less than that (< 1/4); see Figure (3).

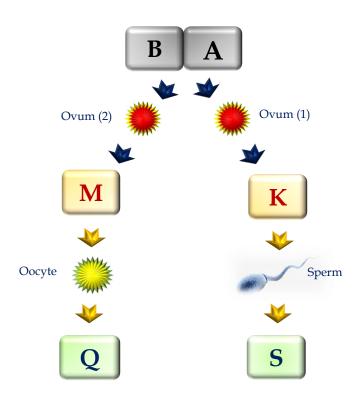


Figure (3): The Final Word

- The founding parents: Father (A) and Mother (B).
- Two possible fertilized eggs from them: Ovum(1) giving Son (K), and Ovum(2)

#### giving Daughter (M).

- The daughter (M) produces her Oocytes early, directly from Ovum(2)'s genes, making them faithful copies.
- The son (K) produces his sperm later in life. The genes in his sperm, especially produced later in life, may differ from the original genes of his founding Ovum(1) due to ongoing genetic updates.
- **Conclusion**: Therefore, the grandson (Q) is closely related to his mother (M) (½) and his uncle (K) (¼, potentially ½), but his relatedness to his grandfather (A) himself is less than ¼.

## You Spoke the Truth, Messenger of God

You spoke the truth when you stood as an orator and guide to the people, advising them to "Choose carefully for your sperm, for a woman almost gave birth to her brother," and in a second narration, "...to her father." As for the second, I dismiss it. What need do we have for it when the first is more sound in logic and more correct in meaning? For there is no truer sample than the maternal uncle for what the sons of sisters can be like.

O Messenger of God! The early ones and those who followed them were perplexed when they weakened your hadith due to a weak chain of transmission. Had they known the eloquence of the text and the truth of its explicit meaning, I swear they would not have done so.

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## In other contexts, you can also read the following articles:

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- <u>The Hyperreflexia, Innovated Pathophysiology</u>
- DOI The Spinal Shock
- <u>The Spinal Injury, the Pathophysiology of the Spinal Shock, the Pathophysiology of the Hyperreflexia</u>
- <u>DOI</u> <u>Upper Motor Neuron Lesions, the Pathophysiology of the</u> <u>Symptomatology</u>

- <u>DOI</u> <u>Hyperreflexia (1): Pathophysiology of Disproportionate Motor</u>
  <u>Response</u>
- <u>DOI</u> <u>Hyperreflexia (2): Pathophysiology of Bilateral-Response</u> <u>Hyperreflexia</u>
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- DOI The Clonus, 1st Hypothesis of Pathophysiology
- DOI The Clonus, 2<sup>nd</sup> Hypothesis of Pathophysiology
- DOI The Clonus, Two Hypotheses of Pathophysiology
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- <u>The Nerve Transmission through Neural Fiber (2), The Action Potentials</u>
- <u>The Nerve Transmission through Neural Fiber (3), The Action</u> Electrical Currents
- <u>The Function of Standard Action Potentials & Currents</u>
- <u>The Three Phases of Nerve transmission</u>
- DOI Neural Conduction in the Synapse (Innovated)
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